

New York Supreme Court

APPELLATE DIVISION — FIRST DEPARTMENT



In the Matter of a Proceeding under Article 70 of the CPLR
for a Writ of Habeas Corpus,

THE NONHUMAN RIGHTS PROJECT, INC., on behalf of TOMMY,

Petitioner-Appellant,

against

PATRICK C. LAVERY, individually and as an officer of Circle L Trailer Sales,
Inc., DIANE L. LAVERY, and CIRCLE L TRAILER SALES, INC.,

Respondents-Respondents.

RECORD ON APPEAL VOLUME II OF II Pages 393 to 802

PATRICK C. LAVERY, individually
and as an officer of Circle L
Trailer Sales, Inc.
3032 State Highway 30
Gloversville, New York 12078
518-661-5038

Respondent-Respondent Pro Se

DIANE L. LAVERY
3032 State Highway 30
Gloversville, New York 12078
518-661-5038

Respondent-Respondent Pro Se

ELIZABETH STEIN, ESQ.
5 Dunhill Road
New Hyde Park, New York 11040
516-747-4726
liddystein@aol.com

and

STEVEN M. WISE, ESQ.
(of the bar of the State of Massachusetts)
by permission of the Court
5195 NW 112th Terrace
Coral Springs, Florida 33076
954-648-9864
wiseboston@aol.com

Attorneys for Petitioner-Appellant

(Additional Counsel on the Reverse)

CIRCLE L TRAILER SALES, INC.
3032 State Highway 30
Gloversville, New York 12078
518-661-5038

Respondent-Respondent Pro Se

Table of Contents

Page

Volume I

Pre-Argument Statement	1
Notice of Appeal, dated October 6, 2016	7
Order of the Honorable Barbara Jaffe, dated July 8, 2016, Appealed From, with Notice of Entry	10
Declined Order to Show Cause and Memorandum of the Honorable Barbara Jaffe, dated December 23, 2015	13
Verified Petition, dated December 2, 2015	15
Exhibit 1 to Verified Petition - (i) Order of the Honorable Joseph M. Sise, dated December 17, 2013	35
(ii) Transcript of Proceedings held before the Honorable Joseph M. Sise on December 3, 2013	36
Exhibit 2 to Verified Petition - Letter from Arthur Carl Spring to Robert D. Mayberger, dated May 1, 2014	76
Exhibit 3 to Verified Petition - Order of the Appellate Division, Third Department, dated July 9, 2014	77
Exhibit 4 to Verified Petition - Decision and Order of the Appellate Division, Third Department, decided January 30, 2015	79
Exhibit 5 to Verified Petition - Order of the New York State Court of Appeals, decided September 1, 2015	80

Table of Contents
(Continued)

	<u>Page</u>
Exhibit 6 to Verified Petition - Letter Brief of Amicus Curiae Laurence H. Tribe in Support of Motion for Leave to Appeal, dated May 8, 2015	81
Exhibit 7 to Verified Petition - Letter Brief of Amicus Curiae Justin Marceau, <i>Habeas</i> <i>Corpus</i> Scholar, in Support of Motion for Leave to Appeal, dated April 14, 2015	99
Exhibit 8 to Verified Petition - Order of the Appellate Division, Second Department, dated April 3, 2014	103
Exhibit 9 to Verified Petition - The Nonhuman Rights Project, Inc. Trust for Tommy, Kiko, Hercules and Leo, dated November 15, 2013	104
Affidavit of Molly Polidoroff, sworn to December 5, 2014	114
Exhibit A to Polidoroff Affidavit - Photographs of “STC” Sanctuary	122
Exhibit B to Polidoroff Affidavit - Standards for Great Ape Sanctuaries, dated January 2013	126
Affidavit of Steven M. Wise (“Second Hercules and Leo Petition”), sworn to January 21, 2015	198
Exhibit A to Wise Affidavit - Printout of “Announcement of Agency Decision: Recommendations on the Use of Chimpanzees in NIH Supports Research,” dated June 26, 2013	201

Table of Contents
(Continued)

	<u>Page</u>
Exhibit B to Wise Affidavit - Brazilian Decision in Portuguese, in <i>In favor of Suica, a Chimpanzee</i> , dated September 28, 2005	238
Exhibit C to Wise Affidavit - English Translation of Brazilian Decision, in <i>In favor of Suica, a Chimpanzee</i> , dated September 28, 2005	243
Exhibit D to Wise Affidavit - Excerpts from Brief filed in Appellate Division, Fourth Department on behalf of Kiko	245
Exhibit E to Wise Affidavit - Excerpts from Oral Argument of Steven M. Wise, in Appellate Division, Fourth Department	247
Exhibit F to Wise Affidavit - (i) Excerpts from Memorandum of Law filed in Supreme Court, Niagara County on behalf of Kiko, dated December 2, 2013	251
(ii) Verified Petition filed in Supreme Court, Niagara County on behalf of Kiko, dated December 2, 2013	253
Affidavit of Steven M. Wise, sworn to December 2, 2013	270
Exhibit A to Wise Affidavit - Disc of Video of Tommy	273
Exhibit B to Wise Affidavit - Photographs of Tommy in Enclosure	274

Table of Contents
(Continued)

	<u>Page</u>
Exhibit C to Wise Affidavit - Printout of “Announcement of Agency Decision: Recommendations on the Use of Chimpanzees in NIH Supports Research,” dated June 26, 2013 (Reproduced Herein at pages 201 to 237)	276
Exhibit D to Wise Affidavit - Brazilian Decision in Portuguese, in <i>In favor of Suica, a Chimpanzee</i> , dated September 28, 2005 (Reproduced Herein at pages 238 to 242)	276
Exhibit E to Wise Affidavit - English Translation of Brazilian Decision, in <i>In favor of Suica, a Chimpanzee</i> , dated September 28, 2005 (Reproduced Herein at pages 243 to 244)	276
Affidavit of James R. Anderson, sworn to November 20, 2013	277
Exhibit A to Anderson Affidavit - References	286
Affidavit of Christophe Boesch, sworn to November 19, 2013	290
Exhibit A to Boesch Affidavit - <i>Curriculum Vitae</i>	304
Exhibit B to Boesch Affidavit - References	328
Affidavit of Jennifer M.B. Fugate, sworn to November 22, 2013	330
Exhibit A to Fugate Affidavit - References	338
Affidavit of Mary Lee Jensvold, sworn to November 21, 2013	340

Table of Contents
(Continued)

	<u>Page</u>
Exhibit A to Jensvold Affidavit - <i>Curriculum Vitae</i>	353
Exhibit B to Jensvold Affidavit - References	370
Affidavit of James King, sworn to November 21, 2013	373
Exhibit A to King Affidavit - <i>Curriculum Vitae</i>	382
Exhibit B to King Affidavit - References	391

Volume II

Affidavit of Tetsuro Matsuzawa, sworn to November 23, 2013	393
Exhibit A to Matsuzawa Affidavit - <i>Curriculum Vitae</i>	403
Exhibit B to Matsuzawa Affidavit - References	417
Affidavit of William C. McGrew, sworn to November 21, 2013	423
Exhibit A to McGrew Affidavit - <i>Curriculum Vitae</i>	435
Exhibit B to McGrew Affidavit - References	462
Affidavit of Mathias Osvath, declared November 19, 2013	466

Table of Contents
(Continued)

	<u>Page</u>
Exhibit A to Osvath Affidavit - References	475
Affidavit of Emily Sue Savage-Rumbaugh, sworn to November 22, 2013	477
Exhibit A to Savage-Rumbaugh - <i>Curriculum Vitae</i>	494
Exhibit B to Savage-Rumbaugh - References	531
Supplemental Affidavit of James R. Anderson, sworn to November 18, 2015	542
Exhibit A to Anderson Supplemental Affidavit - References	552
Supplemental Affidavit of Christophe Boesch, sworn to October 14, 2015	556
Exhibit A to Boesch Supplemental Affidavit - References	566
Affidavit of Jane Goodall, sworn to September 21, 2015	570
Exhibit A to Goodall Affidavit - <i>Curriculum Vitae</i>	580
Supplemental Affidavit of Mary Lee Jensvold, sworn to September 29, 2015	607
Exhibit A to Jensvold Supplemental Affidavit - References	613

Table of Contents
(Continued)

	<u>Page</u>
Supplemental Affidavit of William C. McGrew, sworn to October 9, 2015	615
Exhibit A to McGrew Supplemental Affidavit - References	626
Supplemental Affidavit of Emily Sue Savage-Rumbaugh, sworn to December 1, 2015	628
Exhibit A to Savage-Rumbaugh Supplemental Affidavit - References	653
Proposed Order to Show Cause	667
Memorandum of Law in Support of Petition for <i>Habeas Corpus</i> , dated December 2, 2016	669
Certification Pursuant to CPLR § 2105	802

Affidavit of Tetsuro Matsuzawa, sworn to November 23, 2013
[pp. 393 - 402]

FILED: NEW YORK COUNTY CLERK 12/02/2015 05:12 PM

NYSCEF DOC. NO. 32

INDEX NO. 162358/2015

RECEIVED NYSCEF: 12/02/2015

STATE OF NEW YORK
SUPREME COURT COUNTY OF FULTON

In the Matter of a Proceeding under Article 70 of
the CPLR for a Writ of Habeas Corpus,

THE NONHUMAN RIGHTS PROJECT, INC.,
on behalf of TOMMY,

Petitioners,

v.

PATRICK C. LAVERY, individually and as an
officer of Circle L Trailer Sales, Inc., DIANE
LAVERY, and CIRCLE L TRAILER SALES,
INC.,

Respondents.

**AFFIDAVIT OF
TETSURO MATSUZAWA**

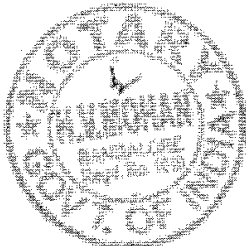
Index No.:

COUNTRY OF INDIA)
STATE OF MAHARASHTRA) ss:
CITY OF PUNE)

Tetsuro Matsuzawa being duly sworn, deposes and says:

Introduction and Qualifications

1. My name is Tetsuro Matsuzawa. I reside and work in Kyoto, Japan. I was awarded a Ph.D. in Science from Kyoto University in 1986.
2. I submit this affidavit in support of Petitioners The Nonhuman Rights Project, Inc. ("NHRP"), on behalf of Tommy, for a writ of habeas corpus. I am a non-party to this proceeding.
3. I am currently a Full Professor of Language and Intelligence at Kyoto University and was the Director of the Primate Research Institute of Kyoto University in 2006-2012. I am also the Director of the Center for International Collaboration and Advanced Studies in



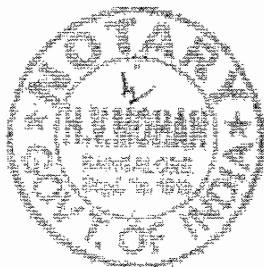
Primatology at Kyoto University, which promotes scientific research across disciplines and collaborators.

4. I am currently President of the *International Primatological Society*. I sit on the editorial board of *The Royal Society, Philosophical Transactions B*, and am the Chair of the Scientific Program for the 2016 *International Congress of Psychology*. I am the recipient of several professional honors including the Prince Chichibu Memorial Award for Science in 1991 and the Jane Goodall Award in 2001.

5. My specialization is in chimpanzee intelligence both in the wild and in the laboratory. I have studied tool use in wild chimpanzees in West Africa (Bossou-Nimba, Guinea) since 1986 and have been Director of the on-going laboratory study of captive chimpanzees known as the "Ai-project" since 1978. The "Ai-project" focuses upon language-like skills and the understanding of numbers in a female chimpanzee named Ai, her son Ayumu and three generations of chimpanzees constituting one of the longest-running laboratory research projects on chimpanzee intelligence. This combination of field and laboratory studies provides me with a uniquely comprehensive and in-depth view of chimpanzee intelligence.

6. I have written or co-edited 4 books including: *Primate Origins of Human Cognition and Behavior* (2001, Springer), *Cognitive Development in Chimpanzees* (2006, Springer), *The Mind of the Chimpanzee: Ecological and Experimental Perspectives* (2010, University Of Chicago Press), and *The Chimpanzees of Bossou and Nimba* (2011, Springer).

7. I have published 123 peer-reviewed scientific articles on cognition, intelligence, development, and welfare of chimpanzees and other primates in the world's most prominent scientific journals: *Nature*, *Proceedings of the National Academy of Sciences*, *Journal of Comparative Psychology*, *International Journal of Primatology*, *American Journal of*



Primateology, *Current Biology*, *Animal Cognition*, *Animal Behaviour*, *American Journal of Physical Anthropology*, among others. I have also authored and co-authored 17 book chapters. The specific topics I have researched and written about on chimpanzees include: tool-making and use, culture, memory of numerals, facial perception, caregiving, development and maturation, food sharing, handedness, gaze following, and categorization and classification of colors and objects.

8. I have given over 58 invited talks at international venues in countries such as: Austria, China, France, Germany, Korea, Italy, Japan, Mexico, Scotland, Switzerland, the United Kingdom and the United States, among others. I continue to regularly give both local and international presentations at academic conferences, wildlife conservation meetings, and other scientific venues. My Curriculum Vitae fully sets forth my educational background and experience and is annexed hereto as "Exhibit A".

Basis for Opinions

9. The opinions I state in this Affidavit are based on my professional knowledge, education, training, and over 37 years of laboratory research and field work with chimpanzees, as well as my review of peer-reviewed literature about primatology published in the world's most respected journals, periodicals and books that are generally accepted as authoritative in the field of primatology, many of which were written by myself and colleagues with whom I have worked for many years and whose research and field work I am personally familiar with. A full reference list of peer-reviewed literature cited herein is annexed hereto as "Exhibit B".

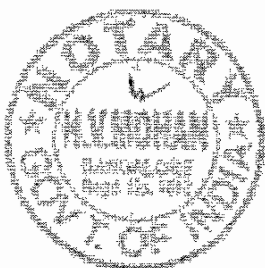
Opinions

10. As chimpanzees and humans share close to 99% of their DNA, their brains, too, are very similar (Semendeferi and Damasio, 2000). There are a number of shared characteristics in the brain that are relevant to such capacities as self-awareness and autonomy as well as



general intelligence. Both have larger brains than expected for their body size (Armstrong, 1985; Bauchot and Stephan, 1969; Bronson, 1981). This means they both evolved to possess above-average mental abilities compared with other species of the same body size. Both share similar circuits in the brain which are involved in language and communication (Gannon, Holloway, Broadfield, and Braun, 1997; Tagliatela, Russell, Schaeffer, Hopkins, 2008; and see below). Both have evolved large frontal lobes of the brain, which are intimately involved in the capacities for insight and foreplanning (Semendeferi and Damasio, 2000). Both share a number of highly specific cell types which are thought to be involved in higher-order thinking (see below) and chimpanzee and human brains also share a number of important functional characteristics related to sense of self. Finally, both human and chimpanzee brains are similar in terms of how the brain develops and matures, indicating that chimpanzees and humans go through similar cognitive developmental stages.

11. Developmental delay (a long protracted period of brain development over many years) is a key feature of human brain evolution and is thought to play a role in the emergence of complex cognitive abilities, such as self-awareness, creativity, foreplanning, working memory, decision making and social interaction. Delayed development of the brain, and specifically the prefrontal cortex, provides a longer period in which this part of the brain may be shaped by experience and learning (Furster, 2002; Goldberg, 2002). Likewise, chimpanzee brains exhibit a very similar level of developmental delay in the prefrontal cortex, leading to the neuroanatomical basis for such high-level capacities as self-awareness, forethought, decision-making, and working memory in chimpanzees (Sakai et al., 2011; 2010). Consistent with these similar functions in humans and chimpanzees, chimpanzee infants share some common mental features and patterns with human infants (Matsuzawa, 2007). These features include the ways in which



mothers and infants interact and use social smiling and mutual gaze (looking into each other's eyes) as ways of strengthening their bond (Tomonaga et al., 2004) as well as how and when they first start to manipulate objects, which is related to their shared capacity for tool-making and use.

12. One of the hallmarks of sophisticated communication and even language-like capacities is brain asymmetry. In humans the left and right parts of the brain have different shapes which are related to language capacities. Furthermore, these brain asymmetries are correlated with handedness. That is, most humans are right-handed and process language in the left hemisphere. This is referred to as a "population-level right-handedness." Studies of the anatomy of the brain reveal that chimpanzees possess very similar patterns of asymmetry (Cantalupo and Hopkins, 2001; Dadda, Cantalupo and Hopkins, 2006; Gannon, Holloway, Broadfield and Braun, 1997). Furthermore, chimpanzees exhibit population-level right-handedness in captivity (Hopkins et al., 2010) as well as in patterns of tool use in the wild (Humle and Matsuzawa, 2009). These overall findings point to a key similarity in the way chimpanzee and human brains are structured, particularly in ways that are relevant to language and communication.

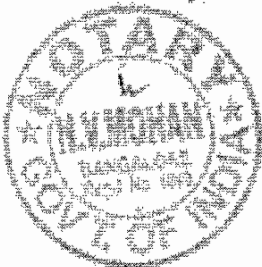
13. Language is a volitional process in humans that involves creating intentional sounds for the purpose of communication, and is, therefore, a reflection of autonomous thinking and behavior. Findings regarding functional aspects of the chimpanzee brain demonstrate volitional control over their vocalizations as well. Certain sounds are produced by chimpanzees selectively to capture the attention of an inattentive audience (Hopkins et al., 2007). These sounds are produced almost exclusively in the presence of an audience and are, therefore, under volitional control as they serve the purpose of informing others about the presence of various items, such as food or a play object or tool. Not only do chimpanzees create purposeful



vocalizations, like humans, their brain responds differently to their own name than other sounds. In a study of brain wave patterns, one captive chimpanzee, 'Mizuki', showed specific brain wave responses to the sound of her own name, suggesting that this response might signify self-relevance in chimpanzees as for humans. Her name may have evoked a specific memory, emotion or mental representation (Ueno et al., 2009).

14. Further evidence for the similarity between human and chimpanzee brains comes from the finding that they both possess a specialized type of cell – known as a spindle cell (or von Economo neuron) – in the same area of the brain. This area, known as the anterior cingulate cortex is involved in emotional learning, the processing of complex social information, decision-making, awareness, and, in humans, speech initiation. Therefore, the presence of spindle cells in both chimpanzees (and other great apes) and humans strongly suggest they share a number of these higher-order brain functions (Allman et al., 2011; Hayashi et al., 2001).

15. The concept of self is an integral part of being able to have goals and desires, intentionally act towards those goals, and the ability to understand whether they are satisfied or not. There is abundant and robust evidence that chimpanzee possess a sense of self, as they have repeatedly demonstrated the ability to recognize themselves in mirrors (Gallup, 1970; Povinelli et al., 1993) and show a number of capacities which stem from being self-aware, such as metacognition, that is, the ability to think about and reflect upon one's own thoughts and memories (Beran et al., 2013; Call, 2010; Call and Carpenter, 2001). For instance, when given a task in which the identity of a food item is a critical piece of information needed to obtain a reward, chimpanzees, like humans, first check a container they are unfamiliar with before making their choice. They show efficient information-seeking behavior that strongly suggests they are aware of what they know and do not know (Beran et al., 2013). They, like human



children, also know when they have enough visual information to complete a task (Call and Carpenter, 2001), and, also know that they could be wrong about the information they have and, again like human children, will check if they are uncertain (Call, 2010). All of these abilities are related to self-monitoring and self-reflection in chimpanzees as in humans.

16. The ability to distinguish actions and effects caused by oneself from events occurring in the external environment is called "self-agency" and is a fundamental component of autonomy and purposeful behavior. Chimpanzees are able to distinguish between movement of an object, e.g., a computer cursor, controlled by themselves and motion caused by someone else. These and many other similar findings demonstrate that chimpanzees and humans share the fundamental cognitive processes underlying the sense of being an independent agent (Kaneko and Tomonaga, 2011).

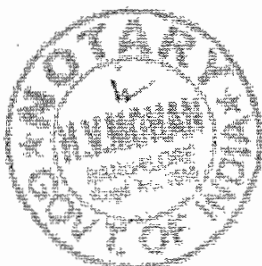
17. Not only do chimpanzees reflect upon their own thoughts and states of knowledge but they understand the mind's and experience of others. For instance, chimpanzees cannot only imitate the actions of others but anticipate the intentions of others when watching a human or another chimpanzee try to complete a task (Myowa-Yamakoshi and Matsuzawa, 2000). Chimpanzees know what others can and cannot see (Hare et al., 2000, 2001). Chimpanzees know when another's behavior is accidental or intentional (Call and Tomasello, 1998; Call et al., 2004). And chimpanzees use their knowledge of others' perceptions tactically to deceive another chimpanzee and obtain hidden food (de Waal, 2005; Hirata and Matsuzawa, 2001). In situations where two chimpanzees are in competition for hidden food they show a number of strategies and counter-strategies to throw each other "off the trail" and obtain the food for themselves (Hirata and Matsuzawa, 2001). This kind of complexity in understanding others' minds is key evidence of being aware of one's own mind and that of others, as chimpanzees clearly are.



18. Finally, chimpanzees who were shown videos of other chimpanzees yawning or just showing open-mouth facial expressions that were not yawns, showed higher levels of yawning in response to the yawn videos but not to the open-mouth displays but not the other (Anderson et al., 2004). These findings are very similar to contagious yawning effects observed in humans, and are thought to be based on the capacity for empathy, the ability to put oneself in another's situation. Contagious yawning in chimpanzees provides even further evidence that they possess very complex levels of self-awareness and empathic abilities.

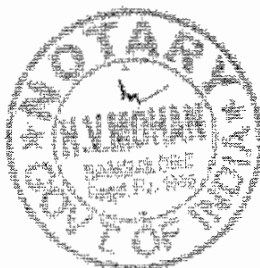
19. Numerosity, the ability to understand numbers as a sequence of quantities, requires not only sophisticated working memory (in order to keep numbers in mind) but also a conceptual understanding of a sequence, which is closely related to mental time travel (thinking about something in the future) and planning out the right sequence of steps towards a goal, two critical components of autonomy. Not only do chimpanzees excel at understanding sequences of numbers but they understand that Arabic symbols ("2", "5", etc.) represent discrete quantities, outperforming humans in some of these tasks (see below).

Sequential learning can be defined as the ability to encode and represent the order of discrete items occurring in a sequence (Conway and Christianson, 2001). Sequential learning is critical for human speech and language processing, the learning of action sequences, or any task that requires putting items into an ordered sequence. Chimpanzees can count or sum up arrays of real objects or Arabic numerals (Beran et al., 1998; Beran and Rumbaugh, 2001; Boysen and Berntson, 1989; Rumbaugh et al., 1987) and display the concepts of ordinality and transitivity (the logic that if $A = B$ and $B = C$, then $A = C$) when engaged in numerical tasks, demonstrating a real understanding of the ordinal nature of numbers (Boysen, Berntson, Shreyer, and Quigley, 1993). Chimpanzees also understand proportions (e.g., $1/2$, $3/4$, etc.) (Woodruff and Premack,



1981). Chimpanzees are able to learn to name (using a symbol-based computer keyboard) the number, color and type of object shown on the screen (Matsuzawa, 1985). They can use a computer touch screen to count from 0 to 9 in sequence (Inoue and Matsuzawa, 2007; Kawai and Matsuzawa, 2000; Tomonaga and Matsuzawa, 2000). Moreover, they have an understanding of the concept of zero, using it appropriately in ordinal context (Biro and Matsuzawa, 2001). Moreover, chimpanzees display indicating acts' (pointing, touching, rearranging) similar to what human children display when counting up a sum. So just as human children touch each item when counting an array of items, chimpanzees do the same thing, suggesting further similarity in the way numbers and sequences are conceptualized in chimpanzees and humans (Boysen, Bernston, Shreyer, and Hannan, 1995).

20. Not only do chimpanzees understand numbers and sequences, but their working memory of numbers is superior to that of adult humans. Working memory (or, short-term memory) is the ability to temporarily store, manipulate and recall items (numbers, objects, names, etc.). In other words, working memory has to do with how good someone is at keeping several items in mind at the same time. Working memory tasks require monitoring (i.e., manipulation of information or behaviors) as part of completing goal-directed actions in the setting of interfering processes and distractions. The cognitive processes needed to achieve this include attention and executive control (reasoning, planning and execution). Chimpanzees were shown the numerals 1-9 spread randomly across a computer screen. The numbers appeared for a very limited duration (210, 430a and 650 milliseconds and then were replaced by white squares, which had to be touched in the correct order (1-9). To complicate matters, in another version of the task, as soon as the chimpanzees touched the number 1, the remaining either were immediately masked by white squares. In order to successfully complete the task they had to

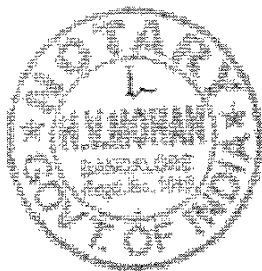


T. Matsuzawa
Teisuro Matsuzawa

Sworn to before me
this 28th day of November, 2013

[illegible]

Notary Public

[illegible][illegible]

22-41-15

SL. No. 2664
Page No. 38
Book No. I
Date 23-11-13

[illegible]

100-443886-1000

Exhibit A to Matsuzawa Affidavit -
Curriculum Vitae
[pp. 403 - 416]

Curriculum Vitae

Tetsuro Matsuzawa

Current Position

Professor, Section of Language and Intelligence,
Director, Center for International Collaboration and Advanced
Studies
Primate Research Institute, Kyoto University
President of the International Primatological Society
Editorial Board of The Royal Society, *Philosophical Transaction B*
Chair of Scientific Program of International Congress of Psychology 2016



Birth day: 15th Oct. 1950, born in Japan (Nationality: Japanese)

1969: Entered Kyoto University (Philosophy major)

1974: Graduated the Faculty of Letters, Kyoto University; Entered Graduate School of Kyoto University (Psychology major): PhD (Science) from Kyoto University in 1986

1976-present: Primate Research Institute of Kyoto University

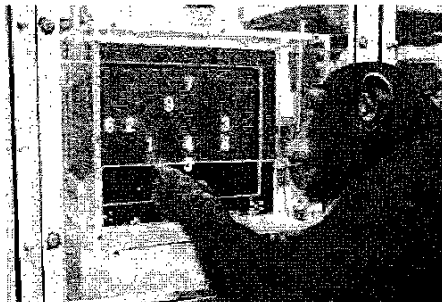
(1976: Assistant professor, 1987: Associate professor, 1993: full professor, 2006-2012: Director)

Major: Primatology, Psychology, especially establishing "Comparative Cognitive Science"

Research Summary

Matsuzawa has been studying chimpanzee intelligence both in the laboratory and in the wild. The laboratory work is known as "Ai-project" since 1976. He has also been studying the tool use in the wild chimpanzees at Bossou-Nimba, Guinea, West Africa, since 1986. Matsuzawa tries to synthesize the field and the lab work to understand the nature of chimpanzees. He published journal papers and also the books such as "Primate origins of human cognition and behavior", "Cognitive development in chimpanzees", "The chimpanzees of Bossou and Nimba". He also published several popular books to the public too, that have been translated into Chinese and Korean. He got several prizes including Prince Chichibu Memorial Award for Science in 1991, Jane Goodall Award in 2001, and The Medal with Purple Ribbon in 2004.

Please see the web site: <http://www.pri.kyoto-u.ac.jp/ai/>



Publications list

Books

- Matsuzawa T, Humle, T & Sugiyama, Y (2011) *The Chimpanzees of Bossou and Nimba*. Springer.
- Lonsdorf, E, Ross, S & Matsuzawa T (2010) *The mind of the chimpanzee: Ecological and experimental perspectives*. The University of Chicago Press.
- Matsuzawa T, Tomonaga M, Tanaka M (2006) *Cognitive Development in Chimpanzees*, Springer.
- Matsuzawa T (2001) *Primate origins of human cognition and behavior*, Springer-Verlag.

Papers (Reviewed academic journal paper)

- Hattori Y, Tomonaga M, Matsuzawa T (2013) Spontaneous synchronized tapping to an auditory rhythm in a chimpanzee. *Scientific Reports*, 3 : 1566 | DOI: 10.1038/srep01566, 28 Mar 2013
- Matsuzawa T (2013) Evolution of the brain and social behavior in chimpanzees. *Current opinion in Neurobiology*. 23:443–449 <http://dx.doi.org/10.1016/j.conb.2013.01.012>
- Sakai T, Matsui M, Mikami A, Malkova L, Hamada Y, Suzuki J, Tanaka M, Miyabe-Nishiwaki T, Makishima H, Nakatsukasa M, Matsuzawa T (2013) Developmental patterns of chimpanzee cerebral tissues provide important clues for understanding the remarkable enlargement of the human brain. *Proceedings in the Royal Society B*, 280: 20122398.
- Koops K, McGrew WC. , Matsuzawa T (2013) Ecology of culture: do environmental factors influence foraging tool use in wild chimpanzees, *Pan troglodytes verus*? *Animal Behaviour*, 85, 175-185.
- Matsuzawa T (2012) GRASP in Paris 2012. *Pan Africa News*, 19(2): 15-16
- Weiss A, King JE. , Inoue-Murayama M, Matsuzawa T, Oswald AJ. (2012) Evidence for a midlife crisis in great apes consistent with the U-shape in human well-being. *Proceedings of the National Academy of Sciences*, 109, 19949-19952.
- Carvalho S, Biro D, Cunha E, Hockings KJ. , McGrew WC. , Richmond BG. , Matsuzawa T (2012) Chimpanzee carrying behaviour and the origins of human bipedality. *Current Biology*, 22, R180-R181
- Hockings KJ. , Anderson JR. , Matsuzawa T (2012) Socioecological adaptations by chimpanzees, *Pan troglodytes verus*, inhabiting an anthropogenically impacted habitat *Animal Behaviour*, 83, 801-810
- Hockings KJ. , Humle T, Carvalho S, Matsuzawa T (2012) Chimpanzee interactions with nonhuman species in an anthropogenic habitat. *Behaviour*, 149, 299 – 324

- Koops K, McGrew WC, Matsuzawa T, Knapp LA. (2012) Terrestrial Nest-Building by Wild Chimpanzees (*Pan troglodytes*): Implications for the tree-to-ground sleep transition in early hominins. *American Journal Of Physical Anthropology*, 148, 351–361
- Koops K, McGrew WC, Vries Hde, Matsuzawa T (2012) Nest-building by chimpanzees (*Pan troglodytes verus*) at Seringbara, Nimba Mountains: Antipredation, thermoregulation, and antivector hypotheses. *International Journal of Primatology*, 33, 356–380
- Kooriyama T, Okamoto M, Yoshida T, Nishida T, Tsubota T, Saito A, Tomonaga M, Matsuzawa T, Akari H, Nishimura H, Miyabe-Nishiwaki T (2012) Epidemiological study of zoonoses derived from humans in captive Chimpanzees *Primates*,
- Ogura T, Matsuzawa T, (2012) Video preference assessment and behavioral management of single-caged Japanese macaques (*Macaca fuscata*) by movie presentation. *Journal of Applied Animal Welfare Science*, 15, 101-112
- Weiss A, Inoue-Murayama M, King JE, Adams MJ, Matsuzawa T (2012) All too human? Chimpanzee and orang-utan personalities are not anthropomorphic projections. *Animal Behaviour*, 83: 1355–1365
- Inoue S, Matsuzawa T (2011) Correlation between menstrual cycle and cognitive performance in a chimpanzee (*Pan troglodytes*). *Journal of Comparative Psychology*, 125: 104-11
- Ludwig VU, Adachi I, Matsuzawa T (2011) Visuoauditory mappings between high luminance and high pitch are shared by chimpanzees (*Pan troglodytes*) and humans. *Proc Natl Acad Sci U S A*, published ahead of print December 5, 2011
- Martin CF, Biro D, Matsuzawa T (2011) Chimpanzees' use of conspecific cues in matching-to-sample tasks: public information use in a fully automated testing environment *Animal Cognition*, 14, 893-902
- Morimura N, Idani G, Matsuzawa T (2011) The first chimpanzee sanctuary in Japan: an attempt to care for the “surplus” of biomedical research. *American Journal of Primatology*, 73, 226-232
- Ohashi G, Matsuzawa T (2011) Deactivation of snares by wild chimpanzees. *Primates*, 52, 1-5
- Sakai T, Mikami A, Tomonaga M, Matsui M, Suzuki J, Hamada Y, Tanaka M, Miyabe-Nishiwaki T, Makishima H, Nakatsukasa M, Matsuzawa T (2011) Differential prefrontal white matter development in chimpanzees and humans. *Current Biology*, 21, 1397-1402
- Biro D, Humle T, Koops K, Sousa C, Hayashi M, Matsuzawa T (2010) Chimpanzee mothers at Bossou, Guinea carry the mummified remains of their dead infants. *Current Biology*, 20, R351-R352
- Carvalho S, Yamanashi Y, Yamakoshi G, Matsuzawa T (2010) Bird in the hand: Bossou chimpanzees (*Pan troglodytes*) capture West African wood-owls (*Ciccaba woodfordi*) but not to eat. *Pan Africa News*, 17(1), 6-9

- Fujisawa M, Matsubayashi K, Soumah AGaspard, Kasahara Y, Nakatsuka M, Matsuzawa T (2010) Farsightedness (presbyopia) in a wild elderly chimpanzee: The first report. *Geriatrics & Gerontology International*, 10, 113-114
- Hirata S, Yamamoto S, Takemoto H, Matsuzawa T (2010) A case report of meat and fruit sharing in a pair of wild bonobos. *Pan Africa News*, 17(2), 21-23
- Hockings KJ, Anderson JR, Matsuzawa T (2010) Flexible feeding on cultivated underground storage organs by rainforest-dwelling chimpanzees at Bossou, West Africa. *Journal of Human Evolution*, 58, 227-233
- Hockings KJ, Yamakoshi G, Kabasawa A, Matsuzawa T (2010) Attacks on local persons by chimpanzees in Bossou, Republic of Guinea: long-term perspectives. *American Journal of Primatology*, 72:887-896
- Koons K, McGrew WC, Matsuzawa T (2010) Do chimpanzees (*Pan troglodytes*) use cleavers and anvils to fracture *Treculia africana* fruits? Preliminary data on a new form of percussive technology. *Primates*, 51, 175-178.
- Miyabe-Nishiwaki T, Kaneko A, Nishiwaki K, Watanabe A, Watanabe S, Maeda N, Kumazaki K, Morimoto M, Hirokawa R, Suzuki J, Ito Y, Hayashi M, Tanaka M, Tomonaga M, Matsuzawa T (2010) Tetraparesis resembling acute transverse myelitis in a captive chimpanzee (*Pan troglodytes*): long-term care and recovery. *Journal of Medical Primatology*, 39, 336-346.
- Sakai T, Hirai D, Mikami A, Suzuki J, Hamada Y, Tomonaga M, Tanaka M, Miyabe-Nishiwaki T, Makishima H, Nakatsukasa M, Matsuzawa T (2010) Prolonged maturation of prefrontal white matter in chimpanzees. *Nature Precedings*, 4411.1.
- Yamanashi Y, Matsuzawa T (2010) Emotional consequences when chimpanzees (*Pan troglodytes*) face challenges: individual differences in self-directed behaviours during cognitive tasks *Animal Welfare*, 19, 25-30
- Adachi I, Kuwahata H, Fujita K, Tomonaga M, Matsuzawa T (2009) Plasticity of ability to form cross-modal representations in infant Japanese macaques. *Developmental Science*, 12, 446-452
- Carvalho S, Biro D, McGrew WC, Matsuzawa T (2009) Tool-composite reuse in wild chimpanzees (*Pan troglodytes*): Archaeologically invisible steps in the technological evolution of early hominins? *Animal Cognition*, 12, S103-S114
- Crast J, Frigaszy D, Hayashi M, Matsuzawa T (2009) Dynamic in-hand movements in adult and young juvenile chimpanzees (*Pan troglodytes*). *American Journal of Physical Anthropology*, Volume 138, Issue 3, pages 274-285
- Haslam M, Hernandez-Aguilar A, Ling V, Carvalho S, Torre Ide-la, DeStefano A, Du A, Hardy B, Harris J, Marchant L, Matsuzawa T, McGrew W, Mercader J, Mora R, Petraglia M, Roche H, Visalberghi E, Warren R (2009) Primate archaeology *Nature*, 460, 339-344
- Hockings KJ, Anderson JR, Matsuzawa T (2009) Use of Wild and Cultivated Foods by Chimpanzees at Bossou, Republic of Guinea: Feeding dynamics in a human-influenced environment. *American Journal of Primatology*, 71, 636-646

- Humle T, Matsuzawa T (2009) Laterality in hand use across four tool-use behaviors among the wild chimpanzees of Bossou, Guinea, West Africa. *American Journal of Primatology*, 70, 40-48.
- Humle T, Snowdon CT. , Matsuzawa T (2009) Social influences on ant-dipping acquisition in the wild chimpanzees (*Pan troglodytes verus*) of Bossou, Guinea, West Africa. *Animal Cognition*, 12, S37-S48.
- Inoue S, Matsuzawa T (2009) Acquisition and memory of sequence order in young and adult chimpanzees (*Pan troglodytes*). *Animal Cognition*, 12, S59-S69.
- Martinez L, Matsuzawa T (2009) Visual and auditory conditional position discrimination in chimpanzees (*Pan troglodytes*). *Behavioural Processes*, 82, 90-94.
- Martinez L, Matsuzawa T (2009) Auditory-visual intermodal matching based on individual recognition in a chimpanzee (*Pan troglodytes*). *Animal Cognition*, 12, S71-S85
- Martinez L, Matsuzawa T (2009) Effect of species-specificity in auditory-visual intermodal matching in a chimpanzee (*Pan troglodytes*) and humans. *Behavioural Processes*, 82, 160-163
- Matsuzawa T (2009) Symbolic representation of number in chimpanzees. *Current Opinion in Neurobiology*, 19:92-98
- Matsuzawa T (2009) Q&A: Tetsuro Matsuzawa. *Current Biology*, 19, R310-R312
- Matsuzawa T (2009) The chimpanzee mind: in search of the evolutionary roots of the human mind. *Animal Cognition*, 12, S1-S9
- Poti P, Hayashi M, Matsuzawa T (2009) Spatial construction skills of chimpanzees (*Pan troglodytes*) and young human children (*Homo sapiens sapiens*). *Developmental Science*, 12, 536-548
- Weiss A, Inoue-Murayama M, Hong K, Inoue E, Udono T, Ochiai T, Matsuzawa T, Hirata S, King JE. (2009) Assessing chimpanzee personality and subjective well-being in Japan. *American Journal of Primatology*, 71, 283-292
- Carvalho S, Cunha E, Sousa C, Matsuzawa T (2008) Chaînes opératoires and resource-exploitation strategies in chimpanzee (*Pan troglodytes*) nut cracking. *Journal of Human Evolution*, 55, 148-163
- Matsuzawa T, McGrew WC. (2008) Kinji Imanishi and 60 years of Japanese Primatology. *Current Biology*, 18(14), R587-R591
- Möbius Y, Boesch C, Koops K, Matsuzawa T, Humle T (2008) Cultural differences in army ant predation by West African chimpanzees? A comparative study of microecological variables. *Animal Behaviour*, 76, 37-45
- Ohashi G, Hasegawa R, Makan K, Matsuzawa T (2008) Arbors and cuttings: New trials for Green Corridor Project at Bossou-Nimba. *Pan Africa News*, 15(2): 20-23
- Okamoto-Barth S, Tomonaga M, Tanaka M, Matsuzawa T (2008) Development of using experimenter-given cues in infant chimpanzees: Longitudinal changes in behavior and cognitive development. *Developmental Science*, 11(1), 98-108.

- Yamamoto S, Yamakoshi G, Humle T, Matsuzawa T (2008) Invention and modification of a new tool use behavior: Ant-fishing in trees by a wild chimpanzee (*Pan troglodytes verus*) at Bossou, Guinea. *American Journal of Primatology*, 70, 699-702.
- Carvalho S, Sousa C, Matsuzawa T (2007) New Nut-Cracking Sites in Diecké Forest, Guinea: An Overview of the Surveys. *Pan Africa News*, 14 (1), 11-13
- Granier N, Marie-Claude H, Matsuzawa T (2007) Preliminary surveys of chimpanzees in Gouéla area and Déré Forest, the Nimba Mountain Biosphere Reserve, Republic of Guinea. *Pan Africa News*, 14(2), 20-22
- Hockings KJ. , Humle T, Anderson JR. , Biro D, Sousa C, Ohashi G, Matsuzawa T (2007) Chimpanzees share forbidden fruit. *PLoS ONE*, 2(9): e886
- Inoue S, Matsuzawa T (2007) Working memory of numerals in chimpanzees. *Current Biology*, Volume 17, Issue 23, R1004-R1005
- Koops K, Humle T, Sterck E, Matsuzawa T (2007) Ground-nesting by the chimpanzees of the Nimba Mountains, Guinea: Environmentally or socially determined? *American Journal of Primatology*, 69, 407-419
- Matsuzawa T (2007) Assessment of the planted trees in Green Corridor Project. *Pan Africa News*, 14(2), 27-29
- Matsuzawa T (2007) Comparative cognitive development. *Developmental Science*, 10, 97-103
- Nishimura T, Mikami A, Suzuki J, Matsuzawa T (2007) Development of the Laryngeal Air Sac in Chimpanzees *International Journal of Primatology*, Volume 28, Number 2, 483-492
- Thompson ME. , Jones JH. , Pusey AE. , Marsden SBrewer , Goodall J, Marsden D, Matsuzawa T, Nishida T, Reynolds V, Sugiyama Y, Wrangham RW. (2007) Aging and fertility patterns in wild chimpanzees provide insights into the evolution of menopause. *Current Biology*, 17, 2150-2156
- Uenishi G, Fujita S, Ohashi G, Kato A, Yamauchi S, Matsuzawa T, Ushida K (2007) Molecular analyses of the intestinal microbiota of chimpanzees in the wild and in captivity. *American journal of Primatology*, 69: 367-376
- Uenishi G, Fujita S, Ohashi G, Kato A, Yamauchi S, Matsuzawa T, Ushida K (2007) Molecular analysis of the intestinal microbiota of chimpanzees in the wild and in captivity. *American journal of Primatology*, 69: 1-10
- Adachi I, Kuwahata H, Fujita K, Tomonaga M, Matsuzawa T (2006) Japanese macaques form a cross-modal representation of their own species in their first year of life. *Primates*, 47, 350-354
- Hockings KJ. , Anderson JR. , Matsuzawa T (2006) Road crossing in chimpanzees: a risky business. *Current Biology*, Vol 16 No 17, 668-670
- Koops K, Matsuzawa T (2006) Hand Clapping by a Chimpanzee in the Nimba Mountains, Guinea, West Africa. *Pan Africa News*, 13(2)19-21
- Matsuzawa T (2006) Bossou 30 years. *Pan Africa News*, 13, 16-18

- Mizuno Y, Takeshita H, Matsuzawa T (2006) Behavior of infant chimpanzees during the night in the first 4 months of life: smiling and suckling in relation to behavioral state. *Infancy*, 9(2): 215-234
- Nishimura T, Mikami A, Suzuki J, Matsuzawa T (2006) Descent of the hyoid in chimpanzees: evolution of facial flattening and speech. *Journal of Human Evolution*, 51(3): 244-254
- Bard KA. , Myowa-Yamakoshi M, Tomonaga M, Tanaka M, Costall A, Matsuzawa T (2005) Group differences in the mutual gaze of chimpanzees (*Pan troglodytes*). *Developmental Psychology*, 41: 616-624
- Hayashi M, Mizuno Y, Matsuzawa T (2005) How does stone-tool use emerge? Introduction of stones and nuts to naive chimpanzees in captivity. *Primates*, 46(2): 91-102.
- Matsuzawa T (2005) Primate viewing. *Nature*, 434, 21-22.
- Murai C, Kosugi D, Tomonaga M, Tanaka M, Matsuzawa T, Itakura S (2005) Can chimpanzee infants (*Pan troglodytes*) form categorical representations in the same manner as human infants (*Homo sapiens*)? *Developmental Science*, 8:3, pp 240-254
- Myowa-Yamakoshi M, Yamaguchi MK. , Tomonaga M, Tanaka M, Matsuzawa T (2005) Development of face recognition in infant chimpanzees (*Pan troglodytes*). *Cognitive Development*, 20, 49-63
- Takeshita H, Frigaszy D, Mizuno Y, Matsuzawa T, Tomonaga M, Tanaka M (2005) Exploring by doing: How young chimpanzees discover surfaces through actions with objects. *Infant Behavior & Development*, 28, 316-328
- Ueno A, Matsuzawa T (2005) Response to novel food in infant chimpanzees: Do infants refer to mothers before ingesting food on their own? *Behavioural Processes*, 68(1):85-90
- Anderson JR. , Myowa-Yamakoshi M, Matsuzawa T (2004) Contagious yawning in chimpanzees. *Proc Biol Sci*, 271(Suppl 6): S468-S470
- Biro D, Inoue-Nakamura N, Tonooka R, Yamakoshi G, Sousa C, Matsuzawa T (2004) Cultural innovation and transmission of tool use in wild chimpanzees: evidence from field experiments *Animal Cognition*, Volume 6, Number 4, 213-223
- Humle T, Matsuzawa T (2004) Oil Palm Use by Adjacent Communities of Chimpanzees at Bossou and Nimba Mountains, West Africa. *International Journal of Primatology*, Vol. 25, No. 3, 551-581
- Humle T, Matsuzawa T, Yamakoshi G (2004) Chimpanzee conservation and environmental education in Bossou and Nimba, Guinea, West Africa. *Folia Primatologica*, 75(S1):280-281
- Kuwahata H, Adachi I, Fujita K, Tomonaga M, Matsuzawa T (2004) Development of schematic face preference in macaque monkeys. *Behavioural Processes*, 66, 17-21
- Matsuno T, Kawai N, Matsuzawa T (2004) Color classification by chimpanzees (*Pan troglodytes*) in a matching-to-sample task. *Behavioural Brain Research*, 148, 157-165
- Myowa-Yamakoshi M, Tomonaga M, Tanaka M, Matsuzawa T (2004) Imitation in neonatal chimpanzees (*Pan troglodytes*). *Developmental Science*, 7:4, pp 437-442

- Tomonaga M, Tanaka M, Matsuzawa T, Myowa-Yamakoshi M, Kosugi D, Mizuno Y, Okamoto S, Yamaguchi MK. , Bard KA. (2004) Development of social cognition in infant chimpanzees (*Pan troglodytes*): Face recognition, smiling, gaze, and the lack of triadic interactions. *Japanese Psychological Research*, Volume 46, Issue 3, pages 227-235
- Ueno A, Matsuzawa T (2004) Food transfer between chimpanzee mothers and their infants. *Primates*, 45:231-239
- Hayashi M, Matsuzawa T (2003) Cognitive development in object manipulation by infant chimpanzees. *Animal Cognition*, 6: 225-233
- Iversen IH. , Matsuzawa T (2003) Development of interception of moving targets by chimpanzees (*Pan troglodytes*) in an automated task. *Animal Cognition*, 6 : 169-183
- Matsuzawa T (2003) The Ai project: historical and ecological contexts. *Animal Cognition*, 6(4): 199-211
- Myowa-Yamakoshi M, Tomonaga M, Tanaka M, Matsuzawa T (2003) Preference for human direct gaze in infant chimpanzees (*Pan troglodytes*). *Cognition*, 89, B53-B64
- Nishimura T, Mikami A, Suzuki J, Matsuzawa T (2003) Descent of the larynx in chimpanzee infants. *PNAS*, 100(12), 6930-6933
- Shimizu K, Douke C, Fujita S, Matsuzawa T, Tomonaga M, Tanaka M, Matsubayashi K, Hayashi M (2003) Urinary steroids, FSH and CG measurements for monitoring the ovarian cycle and pregnancy in the chimpanzee. *Journal of Medical Primatology*, Volume 32, Issue 1, pages 15-22
- Sousa C, Okamoto S, Matsuzawa T (2003) Behavioural development in a matching-to-sample task and token use by an infant chimpanzee reared by his mother *Animal Cognition*, 6 : 259-267
- Tanaka M, Tomonaga M, Matsuzawa T (2003) Finger drawing by infant chimpanzees (*Pan troglodytes*). *Animal Cognition*, 6 : 245-251
- Humle T, Matsuzawa T (2002) Ant-dipping among the chimpanzees of Bossou, Guinea, and some comparisons with other sites. *American Journal of Primatology*, 58:133-148
- Matsumoto-Oda A, Oda R, Hayashi Y, Murakami H, Maeda N, Kumazaki K, Shimizu K, Matsuzawa T (2002) Vaginal fatty acids produced by chimpanzees during menstrual cycles. *Folia Primatologica*, 74:75-79
- Okamoto S, Tomonaga M, Ishii K, Kawai N, Tanaka M, Matsuzawa T (2002) An infant chimpanzee (*Pan troglodytes*) follows human gaze. *Animal Cognition*, Volume 5, Number 2, 107-114
- Tomonaga M, Matsuzawa T (2002) Enumeration of briefly presented items by the chimpanzee (*Pan troglodytes*) and humans (*Homo sapiens*). *Animal Learning & Behavior*, 30 (2), 143-157
- Visalberghi E, Myowa-Yamakoshi M, Hirata S, Matsuzawa T (2002) Responses to novel foods in captive chimpanzees. *Zoo Biology*, 21:539-548

- Biro D, Matsuzawa T (2001) Use of numerical symbols by the chimpanzee (*Pan troglodytes*): Cardinals, ordinals, and the introduction of zero. *Animal Cognition*, 4 :193-199
- Hirata S, Matsuzawa T (2001) Tactics to obtain a hidden food item in chimpanzee pairs (*Pan troglodytes*). *Animal Cognition*, 4, 285-295.
- Hirata S, Yamakoshi G, Fujita S, Ohashi G, Matsuzawa T (2001) Capturing and toying with hyraxes (*Dendrohyrax dorsalis*) by Wild Chimpanzees (*Pan troglodytes*) at Bossou, Guinea. *American Journal of Primatology*, 53, 93-97
- Humle T, Matsuzawa T (2001) Behavioural diversity among the wild chimpanzee populations of Bossou and neighbouring areas, Guinea and Côte d'Ivoire, West Africa. *Folia Primatologica*, 72:57-68
- Iversen IH, Matsuzawa T (2001) Acquisition of navigation by chimpanzees (*Pan troglodytes*) in an automated fingermaze task. *Animal Cognition*, 4 :179-192
- Kawai N, Matsuzawa T (2001) "Magical number 5" in a chimpanzee. *Behavioral and Brain Sciences*, 24: 127-128
- Matsuzawa T, Tomonaga M (2001) For a rise of comparative cognitive science. *Animal Cognition*, 4: 133-135
- Morimura N, Matsuzawa T (2001) Memory of movies by chimpanzees (*Pan troglodytes*). *Journal of Comparative Psychology*, 115: 152-158
- Sousa C, Matsuzawa T (2001) The use of tokens as rewards and tools by chimpanzees (*Pan troglodytes*). *Animal Cognition*, 4 :213-221
- Kawai N, Matsuzawa T (2000) Numerical memory span in a chimpanzee *Nature*, 403, 39-40
- Kawai N, Matsuzawa T (2000) A conventional approach to chimpanzee cognition: Response to M.D.Hauser (2000). *Trends in Cognitive Sciences*, (4):128-129
- Myowa-Yamakoshi M, Matsuzawa T, (2000) Imitation of intentional manipulatory actions in chimpanzees (*Pan troglodytes*). *Journal of Comparative Psychology*, 114: 381-391
- Tomonaga M, Matsuzawa T (2000) Sequential responding to arabic numerals with wild cards by the chimpanzee (*Pan troglodytes*). *Animal Cognition*, 3 :1-11
- Tsuji K, Hayashibe K, Hara M, Matsuzawa T (2000) Visuo-motor development which causes detection of visual depth from motion and density cues. *Swiss Journal of Psychology*, 59(2): 102-107
- Hirata S, Morimura N, Matsuzawa T (1998) Green passage plan (tree-planting project) and environmental education using documentary videos at Bossou: a progress report. *Pan Africa News*, 5:18-20
- Hirata S, Myowa M, Matsuzawa T (1998) Use of leaves as cushions to sit on wet ground by wild chimpanzees. *American Journal of Primatology*, 44:215-220
- Tonooka R, Tomonaga M, Matsuzawa T (1997) Acquisition and transmission of tool making and use for drinking juice in a group of captive chimpanzees (*Pan troglodytes*). *Japanese Psychological Research*, 39, 253-265

- Tomonaga M, Itakura S, Matsuzawa T (1993) Superiority of conspecific faces and reduced inversion effect in face perception by a chimpanzee (*Pan troglodytes*). *Folia Primatologica*, 61, 110-114
- Tomonaga M, Matsuzawa T (1992) Perception of complex geometric figures in chimpanzees (*Pan troglodytes*) and humans (*Homo sapiens*): Analyses of visual similarity on the basis of choice reaction time. *Journal of Comparative Psychology*, 106, 43-52
- Tomonaga M, Matsuzawa T, Fujita K, Yamamoto J, (1991) Emergence of symmetry in a visual conditional discrimination by chimpanzees (*Pan troglodytes*). *Psychological Reports*, 68, 51-60
- Matsuzawa T (1990) Form perception and visual acuity in a chimpanzee. *Folia Primatologica*, 55, 24-32
- Matsuzawa T, Sakura O, Kimura T, Hamada Y, Sugiyama Y (1990) Case report on the death of a wild chimpanzee (*Pan troglodytes verus*). *Primates*, 31, 635-641
- Matsuzawa T (1985) Use of numbers by a chimpanzee. *Nature*, 315, 57 - 59
- Matsuzawa T (1985) Colour naming and classification in a chimpanzee (*Pan troglodytes*). *Journal of Human Evolution*, 14, 283-291
- Asano T, Kojima T, Matsuzawa T, Kubota K, Murofushi K (1982) Object and color naming in chimpanzees (*Pan troglodytes*). *Proceedings of the Japan Academy, Series B*, 58, 118-122

Book chapters

- Matsuzawa T (2010) A trade-off theory of intelligence. In: Mareschal, D et al. (eds.), *The making of human concepts*. Pp. 227-245, Oxford University Press.
- Matsuzawa T & Kourouma, M (2008) The green corridor project: Long-term research and conservation in Bossou, Guinea. In: Wrangham, R & Ross, E (eds.), *Science and conservation in African forests: The benefits of long-term research*. Pp. 201-212, Cambridge University Press.
- Matsuzawa T, Nakamura, M (2004) Caregiving: mother-infant relations in chimpanzees. In: M. Bekoff (ed.) *Encyclopedia of animal behavior*, Pp.196-203, Greenwood Press.
- Matsuzawa T (2002) Chimpanzee Ai and her son Ayumu: An episode of education by master-apprenticeship. In: M. Bekoff, C. Allen, & Burghardt, G. (eds.) *The cognitive animal* Pp.189-195, Cambridge: The MIT Press
- Matsuzawa, T (2001) Primate foundations of human intelligence: A view of tool use in nonhuman primates and fossil hominids. In: *Primate origins of human cognition and behavior*, T. Matsuzawa ed., Pp. 3-25, Tokyo: Springer-Verlag
- Matsuzawa T, Biro, D., Humle, T., Inoue-Nakamura, N., Tonooka, R. & Yamakoshi, G. (2001) Emergence of culture in wild chimpanzees: Education by master-apprenticeship. In: *Primate origins of human cognition and behavior*, T. Matsuzawa ed., Pp.557-574, Tokyo: Springer-Verlag.

- Matsuzawa T (1999) Communication and tool use in chimpanzee: Cultural and social contexts. In: Hauser, M. & Konishi, M. eds., *The design of Animal communication*, Pp.645-671, Cambridge University Press.
- Matsuzawa T (1998) Chimpanzee behavior: comparative cognitive perspective. In: Greenberg, G. & Haraway, M. eds., "*Comparative psychology: A handbook*", Garland Publishers Inc., NY, 360-375.
- Matsuzawa T & Yamakoshi, G. (1996) Comparison of chimpanzee material culture between Bossou and Nimba, West Africa. In Russon, A., Bard, K., & Parker, S. (eds.), "*Reaching into thought*". Cambridge Univ. Press, 211-232.
- Matsuzawa T (1996) Chimpanzee intelligence in nature and in captivity: isomorphism of symbol use and tool use. In McGrew, W. et al. (eds.), "*Great Ape Societies*". Cambridge Univ. Press, 196-209.
- Matsuzawa T (1994) Field experiments on use of stone tools by chimpanzees in the wild. In Wrangham, R. et al.(eds.), "*Chimpanzee Cultures*". Harvard Univ. Press, 351-370.
- Itakura, S., & Matsuzawa, T. (1993) Acquisition of personal pronouns by a chimpanzee. Roitblat, H., Herman, L., Nachtigall, P. (eds.), "*Language and Communication: Comparative Perspectives*". Lawrence Erlbaum, 347-363.
- Tomonaga, M., Matsuzawa T, & Matano, S. (1991) Perception and processing of complex geometrical figures in chimpanzee (*Pan troglodytes*). In Ehara, A., Kimura, T., Takenaka, O., and Iwamoto, M. (Eds.), "*Primate today*". Elsevier: Amsterdam, 313-316.
- Matsuzawa T (1991) The duality of language-like skill in a chimpanzee (*Pan troglodytes*). In Ehara, A., Kimura, T., Takenaka, O., and Iwamoto, M. (Eds.), "*Primate today*". Elsevier: Amsterdam, 317-320.
- Matsuzawa T (1990) Spontaneous sorting in human and chimpanzee. In Parker, S. and Gibson, K. (Eds.), "*Language and intelligence in monkeys and apes: Comparative developmental perspectives*". Cambridge University Press, 451-468.
- Matsuzawa T (1989) Spontaneous pattern construction in a chimpanzee. In Heltne, P. and Marquardt, L. (Eds.), "*Understanding chimpanzees*". Harvard University Press, 252-265.
- Matsuzawa T, Asano, T., Kubota, K., & Murofushi, K. (1986) Acquisition and Generalization of numerical labeling by a chimpanzee. In D.M.Taub and F.A.,King (Eds.), "*Current perspectives in primate social dynamics*". Van Nostrand Reinhold: New York.

Invited talks (2004-2013)

2013

1) Conakry University, Jan 4, Conakry, Guinea

2) AAAS, Feb 15, Boston, USA

3) Malaysia Science University, Department of Biology, March 5, Penang, Malaysia

- 4) Malaysia Science University, Department of Education, March 6, Penang, Malaysia
- 5) Kunming University of Science and Technology, March 24, Kunming, Yunnan, China
- 6) Kunming Institute of Zoology, March 25, Kunming, Yunnan, China
- 7) Southwest Forestry University, Kunming, Yunnan, China
- 8) Yunnan University of Finance and Economics, March 26, Kunming, Yunnan, China
- 9) Royal University of Bhutan, May, May 5, Thimpu, Bhutan
- 10) Archives Jean Piaget, University of Geneva, May 14, Geneva, Switzerland
- 11) University of Neuchatel, May 15, Neuchatel, Switzerland
- 12) University of St Andrews, May 20, St Andrews, Scotland, UK

2012

- 1) American Psychological Association, Aug 2, Florida, USA
- 2) International Primatological Society, Aug 15, Cancun, Mexico
- 3) President plenary, International Primatological Society, Aug 16, Cancun, Mexico
- 4) University Autonoma Metropolitana-Iztapalapa, Aug 20, Mexico City, Mexico
- 5) Ecole Normale Supérieure, Nov 5, Paris, France
- 6) Le Muséum national d'Histoire naturelle, Nov 8, Paris, France
- 7) International Institute of Advanced Studies, Dec 8, Tokyo, Japan

2011

- 1) Malaysia Science University, Department of Biology, Feb 17, Penang, Malaysia
- 2) Borneo Rainforest Lodge, Malaysia-Sabah University, March 26, Danum Valley, Malaysia
- 3) Harvard University Dept of Psychology and Dept of Anthropology, April 27, Boston, USA
- 4) New York Consortium for Primatology, April 28, New York, USA
- 5) New York City University, April 29, New York, USA
- 6) University of Pennsylvania, Department of Psychology, May 2, Philadelphia, PA, USA
- 7) UCL, Institute of Child Health, May 17, London, UK
- 8) Cambridge University, Department of Anthropology and Archaeology, May 18, Cambridge, UK
- 9) Tamagawa-CALTEC joint symposium on Neuroscience, June 7, Kyoto, Japan
- 10) Association for the Scientific Study of Consciousness (ASSC15), June 12, Kyoto, Japan
- 11) Nairobi Workshop on Lithic Technology, Nairobi National Museum, Aug 6, Nairobi, Kenya
- 12) Wellcome Trust School on Biology of Social Cognition, Cambridge, UK
- 13) Ecole Normale Supérieure, Paris, France

2010

- 1) i-Brain symposium, University of Ghent, March 6, Brussels, Belgium
- 2) Seoul National Zoo, April 28, Seoul, Korea
- 3) Ewha Womans University, April 29, Seoul, Korea
- 4) UCL, Birkbeck and Institute of Cognitive Neuroscience, May 18, London, UK
- 5) Cold Spring Harbor Laboratory School on Biology of Social Cognition, July 15, CSHL, NY,

USA

- 6) International Society for the Study of Behavioral Development (ISSBD), July 21, Lusaka, Zambia
- 7) International Primatological Society, September 13, Kyoto, Japan

2009

- 1) Chimpanzee mind: a combining effort of fieldwork and laboratory work. 2009 AAAS Annual Meeting. February 12-16, Chicago, USA.
- 2) ESF-JSPS Frontier Science Conference Series for Young Researchers. February 28, Napoli, Italy.
- 3) Chimpanzee Mind. The Primate Mind, The "Ettore Majorana" symposium, June 4-7, Erice, Italy.

2008

- 1) Chimpanzee mind: a combining effort of fieldwork and laboratory work. Decade of the Mind3. May 7, Des Moines, USA.
- 2) Comparative cognitive science: trade-off theory of memory and symbolization in humans and chimpanzees. ASSC 12th Annual Meeting. June 21, Taipei, Taiwan.
- 3) Chimpanzee mind: evolution of human mind viewed from panthropology. XXIX International Congress of Psychology. July 24, Berlin, Germany.
- 4) Trade-off theory of memory and symbolization in humans and chimpanzees. International primatological society XXII. August 5, Edinburgh, UK.

2007

- 1) The history of the understanding chimpanzees conference series. The Mind of the Chimpanzee: An International Multidisciplinary Conference on Chimpanzee Cognition. March 22-25, Chicago, USA.
- 2) Cognitive development in chimpanzees: A synthesis of field and lab study. Comparative Cognition in Context Group. March 29, Toronto, Canada.

2006

- 1) Numerical processing in chimpanzees. The 24th European Workshop on Cognitive Neuropsychology. January 22-27, Bressanone, Italy
- 2) Green corridor: An attempt at saving chimpanzees in Bossou and Nimba. The Symbol of Collaboration between Guinea and Japan: Bossou 30 ans. November 27-29, Conakry, Guinea

2005

- 1) Animal behavior about number processing. NUMBRA/ESCAP Summer School "Neuroscience of number processing". July 3-10, Erice, Italy.
- 2) How do animals think? European Forum Alpbach. August 18-25, Alpbach, Austria.

2004

- 1) On HOPE project. The signing ceremony of JSPS and MPG. February 12, Munich, Germany.
- 2) Prerequisites of cultural transmission in chimpanzees. 21COE International Symposium on African Great Apes: Evolution, Diversity, and Conservation. March 4, Kyoto, Japan.
- 3) HOPE: A project of KUPRI and MPIEVA 2004-2009. First International Workshop of HOPE. March 6, Kyoto, Japan.
- 4) The mind of the chimpanzee: In the wild and in captivity. ROH Public Symposium on "Sequencing the Chimpanzee Genome: What Have We Learned?" March 12, La Jolla, CA, USA.
- 5) Cognition and personality in chimpanzees. ROH Expert Meeting on "Sequencing the Chimpanzee Genome: What Have We Learned?" March 13, La Jolla, USA.
- 6) Conservation of wild chimpanzees in West Africa. The 1st Meeting of the Section on Great Apes of the IUCN/SSC Primate Specialist Group. 17-19 April, Chicago, USA.

Exhibit B to Matsuzawa Affidavit -

References

[pp. 417 - 422]

EXHIBIT B

References:

- Allman, J. M., Tetreault, N.A., Hakeem, A., and Park, S. (2011) The von Economo neurons in apes and humans. *American Journal of Human Biology* 23: 5-21.
- Anderson, J.R., Myowa-Yamakoshi, M., and Matsuzawa, T. (2004) Contagious yawning in chimpanzees. *Proceedings of Biological Sciences* 271 (suppl 6): S469-470.
- Armstrong, E. (1985) Allometric considerations of the adult mammalian brain with special emphasis on primates. In *Size and Scaling in Primate Biology* (ed. by W.J. Jungers), Plenum Press, New York, London, pp. 115-146.
- Bauchot, R. and Stephan, H. (1969) Encephalisation et niveau évolutif chez les simiens. *Mammalia* 33: 235-275.
- Beran, M.J., and Rumbaugh, D.M. (2001) Constructive enumeration by chimpanzees on a computerized task. *Animal Cognition* 4: 81-89.
- Beran, M.J., Rumbaugh, D.M., and Savage-Rumbaugh, E.S. (1998) Chimpanzees counting in a computerized testing paradigm. *The Psychological Record* 48: 3-19.
- Beran, M.J., Smith, J.D., and Perdue, B.M. (2013) Language-trained chimpanzees (*Pan troglodytes*) name what they have seen but look first at what they have not seen. *Psychological Science* 24(5): 660-666.
- Biro, D., and Matsuzawa, T. (2001) Use of numerical symbols by the chimpanzee (*Pan troglodytes*): Cardinals, ordinals and the introduction of zero. *Animal Cognition* 4: 193-199.
- Boysen, S.T., and Bertson, G.G. (1989) Numerical competence in a chimpanzee (*Pan troglodytes*). *Journal of Comparative Psychology* 103(1): 23-31.
- Boysen, S.T., Bernston, G.G., Shreyer, T.A., and Hannan, M.B. (1995) Indicating acts during counting by a chimpanzee (*Pan troglodytes*). *Journal of Comparative Psychology* 109(1): 47-51.
- Boysen, S.T., Berntson, G.G., Shreyer, T.A., and Quigley, K.S. (1993). Processing of ordinality and transitivity by chimpanzees (*Pan troglodytes*). *Journal of Comparative Psychology* 107: 208-216.
- Bronson, R.T. (1981) Brain weight-body weight relationships in twelve species of nonhuman primates. *American Journal of Physical Anthropology* 56: 77-81.
- Call, J. (2010) Do apes know that they could be wrong? *Animal Cognition* 13: 689-700.

- Call, J., and Carpenter, M. (2001) Do apes and children know what they have seen? *Animal Cognition* 4: 207-220.
- Call, J., Hare, B., Carpenter, M., and Tomasello, M. (2004) 'Unwilling' versus 'unable': Chimpanzees' understanding of human intentional action. *Developmental Science* 7(4): 488-498.
- Call, J. and Tomasello, M. (1998) Distinguishing intentional from accidental actions in orangutans (*Pongo pygmaeus*), chimpanzees (*Pan troglodytes*) and human children (*Homo sapiens*). *Journal of Comparative Psychology* 112(2): 192-206.
- Cantalupo, C., and Hopkins, W.D. (2001) Asymmetric Broca's area in great apes. *Nature* 414: 505.
- Conway, C.M., and Christiansen, M.H. (2001) Sequential learning in non-human primates. *Trends in Cognitive Sciences* 5(12): 539-546
- Dadda, M., Cantalupo, C., and Hopkins, W.D. (2006) Further evidence of an association between handedness and neuroanatomical asymmetries in the primary motor cortex of chimpanzees (*Pan troglodytes*). *Neuropsychologia* 44: 2572-2586.
- De Waal, F.B.M. (2005) Intentional deception in primates. *Evolutionary Anthropology* 1(3): 86-92.
- Fuster, J.M. (2002) Frontal lobe and cognitive development. *Journal of Neurocytology* 31: 373-385.
- Gallup, G. G. (1970) Chimpanzee: Self-recognition. *Science* 167: 86-87.
- Gannon, P.J., Holloway, R.L., Broadfield, D.C., and Braun, A.R. (1998) Asymmetry of chimpanzee planum temporale: Humanlike pattern of Wernicke's brain language area homolog. *Science* 279 (5348): 220-222
- Goldberg, E. (2002). *The Executive Brain: Frontal Lobes and the Civilized Mind*. Oxford University Press, London.
- Hare, B., Call, J., Agnetta, B., and Tomasello, M. (2000) Chimpanzees know what conspecifics do and do not see. *Animal Behaviour* 59: 771-785.
- Hare, B., Call, J., and Tomasello, M. (2001) Do chimpanzees know what conspecifics know? *Animal Behaviour* 61: 139-151.
- Hayashi, M., Ito, M., and Shimizu, K. (2001) The spindle neurons are present in the cingulate cortex of chimpanzee fetus. *Neuroscience Letters* 309: 97-100.

- Hayashi, M., Matsuzawa, T. (2003) Cognitive development in object manipulation by infant chimpanzees. *Animal Cognition* 6, 225–233.
- Hirata, S., and Matsuzawa, T. (2001) Tactics to obtain a hidden food item in chimpanzee pairs (*Pan troglodytes*). *Animal Cognition* 4: 285–295.
- Hopkins, W. D., Russell, J.L., Lambeth, S., and Schapiro, S.J. (2007) Handedness and neuroanatomical asymmetries in captive chimpanzees: A summary of 15 years of research. In (Hopkins, W.D., ed.) *Evolution of Hemispheric Specialization in Primates*. Academic Press, London, pp. 112–135.
- Hopkins, W.D., Tagliatela, J., Leavens, D.A., Russell, J.L., and Shapiro, S.J. (2010) Behavioral and brain asymmetries in chimpanzees. In (Lonsdorf, E.V., Ross, S.R., Matsuzawa, T., eds.) *The Mind of the Chimpanzee: Ecological and Experimental Perspectives*. University of Chicago Press, Chicago. pp. 60–74.
- Humle, T. and Matsuzawa, T. (2009) Laterality in hand use across four tool-use behaviors among the wild chimpanzees of Bossou, Guinea, West Africa. *American Journal of Primatology*, 70: 40–48.
- Inoue, S., and Matsuzawa, T. (2007) Working memory of numerals in chimpanzees. *Current Biology* 17(23): R1004–R1005.
- Inoue, S., and Matsuzawa, T. (2009) Acquisition and memory of sequence order in young and adult chimpanzees (*Pan troglodytes*). *Animal Cognition* 12(1): S58–S69.
- Johnson, M.H. (2001) Functional brain development in humans. *Nature Reviews Neuroscience* 2: 475–483.
- Kaneko, T. and Tomonaga, M. (2011) The perception of self-agency in chimpanzees (*Pan troglodytes*). *Proceedings of the Royal Society B*. 278: 3694–3702.
- Kawai, N., and Matsuzawa, T. (2000) Numerical memory span in a chimpanzee. *Nature* 403 (6): 39–40.
- Matsuzawa, T. (1985) Use of numbers by a chimpanzee. *Nature* 315(2): 57–59.
- Matsuzawa, T. (2007) Comparative cognitive development. *Developmental Science* 10: 97–103.
- Myowa-Yamakoshi, M. and Matsuzawa, T. (2000) Imitation of intentional manipulatory actions in chimpanzees (*Pan troglodytes*) *Journal of Comparative Psychology* 114: 381–391.
- Povinelli, D.J., Rulf, B., Landau, K.R., and Bierschwale, D.T. (1993) Self-recognition in chimpanzees (*Pan troglodytes*): Distribution, ontogeny, and patterns of emergence. *Journal of Comparative Psychology* 107: 347–372.

- Rumbaugh, D.M., Savage-Rumbaugh, S., and Hegel, M.T. (1987) Summation in the chimpanzee (*Pan troglodytes*). *Journal of Experimental Psychology: Animal Behaviour Processes* 13(2): 107-115.
- Sakai, T., Hirai, S., Akichika, M., Suzuki, J., Hamada, Y., Tomonaga, M., Tanaka, M., Miyabe-Nishiwaki, T., Makashima, H., Nakatsukasa, M., and Matsuzawa, T. (2010) Prolonged maturation of prefrontal white matter in chimpanzees. *Evolution* 3: 4.
- Sakai, T., Mikami, A., Tomonaga, M., Matsui, M., Suzuki, J., Hamada, Y., Tanaka, M., Miyabe-Nishiwaki, T., Makashima, H., Nakatsukasa, M. and Matsuzawa, T. (2011) Differential prefrontal white matter development in chimpanzees and humans. *Current Biology* 21: 1397-1402.
- Semendeferi, K. and Damasio, H. (2000) The brain and its main anatomical subdivisions in living hominoids using magnetic resonance imaging. *Journal of Human Evolution* 38: 317-332.
- Tagliatella, J.P., Russell, J. L., Schaeffer, J.A., and Hopkins, W.D. (2008) Communicative signaling activates 'Broca's' homolog in chimpanzees. *Current Biology* 18(5): 343-348.
- Tomonaga, M., and Matsuzawa, T. (2000) Sequential responding to Arabic numerals with wild cards by the chimpanzee (*Pan troglodytes*). *Animal Cognition* 3: 1-11.
- Tomonaga, M., Myowa-Yamakoshi, M., Mizuno, Y., Yamaguchi, M., Kosugi, D., Bard, K., Tanaka, M., and Matsuzawa, T. (2004) Development of social cognition in infant chimpanzees (*Pan troglodytes*): Face recognition, smiling, gaze and the lack of triadic interactions. *Japanese Psychological Research* 46: 227-235.
- Ueno, A., Hirata, S., Fuwa, K., Sugama, K., Kusunoki, K., Matsuda, G., Fukushima, H., Hiraki, K., Tomonaga, M., and Hasegawa, T. (2010) Brain activity in an awake chimpanzee in response to the sound of her own name. *Biology Letters* 6: 311-313.
- Woodruff, G., and Premack, D. (1981) Primitive mathematical concepts in the chimpanzee: proportionality and numerosity. *Nature* 293: 568-570.

FILED: NEW YORK COUNTY CLERK 12/02/2015 05:12 PM

INDEX NO. 162358/2015

NYSCEF DOC. NO. 33

RECEIVED NYSCEF: 12/02/2015



PETER C FLETCHER
Notary Public

27 Pretoria Road
Cambridge
CB4 1HD

Tel. 01223 314061

Mob. 07775 923892

Email. petercfletcher@cambridgenotary.org

Website. www.cambridgenotary.org

Certificate of Conformity

I, Peter Coleman Fletcher of Cambridge, England, Notary Public duly authorised admitted and sworn, and practising within the United Kingdom and Northern Ireland do hereby certify and affirm under penalty of perjury that I witnessed the signature of Professor William C. McGrew as applied to the Affidavit attached to this Certificate, which was signed and dated on 21st November 2013.

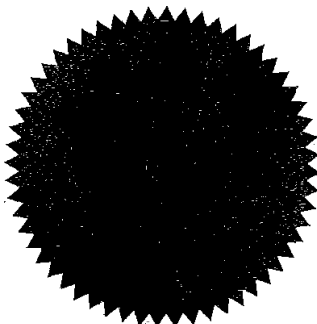
I confirm that the manner in which the Certificate was signed was, and is, in accordance with, and conforms to, the Laws for taking oaths and acknowledgements in England.

A handwritten signature in black ink, appearing to read 'P. Coleman Fletcher'.

Peter Coleman Fletcher

Notary Public

21/11/13



APOSTILLE (Convention de La Haye du 5 octobre 1961)	
1. Country: Pays/Pais	United Kingdom of Great Britain and Northern Ireland
This public document Le présent acte public / El presente documento público	
2. Has been signed by a été signé par ha sido firmado por	Peter C Fletcher
3. Acting in the capacity of agissant en qualité de quien actúa en calidad de	Notary Public
4. Bears the seal/stamp of est revêtu du sceau / timbre de y está revestido del sello / timbre de	The Said Notary Public
Certified Attesté / Certificado	
5. at à / en	London
6. the le / el día	22 November 2013
7. by par / por	Her Majesty's Principal Secretary of State for Foreign and Commonwealth Affairs
8. Number sous no / bajo el número	J856267
9. Seal / stamp: Sceau / timbre: Sello / timbre:	
10. Signature: Signature: Firma:	O. Matti 

This Apostille is not to be used in the UK and only confirms the authenticity of the signature, seal or stamp on the attached UK public document. It does not confirm the authenticity of the underlying document. Apostilles attached to documents that have been photocopied and certified in the UK confirm the signature of the UK public official who conducted the certification only. It does not authenticate either the signature on the original document or the contents of the original document in any way.

If this document is to be used in a country which is not party to the Hague Convention of 5th October 1961, it should be presented to the consular section of the mission representing that country.

Affidavit of William C. McGrew, sworn to November 21, 2013
[pp. 423 - 434]

STATE OF NEW YORK
 SUPREME COURT COUNTY OF FULTON

_____)
 In the Matter of a Proceeding under Article 70 of
 the CPLR for a Writ of Habeas Corpus,)

THE NONHUMAN RIGHTS PROJECT, INC.,)
 on behalf of TOMMY,)

)
 Petitioners,)

v.)

PATRICK C. LAVERY, individually and as an)
 officer of Circle L Trailer Sales, Inc., DIANE)
 LAVERY, and CIRCLE L TRAILER SALES,)
 INC.,)

)
 Respondents.)
 _____)

AFFIDAVIT OF
WILLIAM C. McGREW

Index No.:

UNITED KINGDOM)
)
 COUNTRY OF ENGLAND) ss:
 CITY OF Cambridge)

William C. McGrew being duly sworn, deposes and says:

Introduction and Qualifications

1. My name is William C. McGrew. I reside and work in Cambridge, England. I was awarded a D.Phil. in Psychology from the University of Oxford in 1970, a Ph.D. from in Social Anthropology from the University of Stirling (Scotland) in 1990, and a Ph.D in Biological Anthropology from the University of Cambridge in 2009.

2. I submit this affidavit in support of Petitioners The Nonhuman Rights Project, Inc. ("NhRP"), on behalf of Tommy, for a writ of habeas corpus. I am a non-party to this proceeding.

3. I am currently Emeritus Professor of Evolutionary Primatology in the Division of Biological Anthropology, Department of Archaeology and Anthropology, University of Cambridge. Since 1972 I have taught the following courses (in reverse chronological order): Cultural Primatology, Apes as Models for Human Evolution, Primate Socio-Ecology at the University of Cambridge; Behavioral Ecology and Conservation Biology, Human Evolutionary Ecology, Mammalogy, Origins of Human Material Culture, and Socio-Ecology of Primates at Miami University (Ohio), Socio-Ecology of Primates at Earlham College (Indiana), Animal Behaviour, Behavioral Primatology, and Developmental Psychology at University of Stirling.

4. I was elected a Fellow of the Royal Society of Edinburgh in 2003 and the American Association for the Advancement of Science in 2005. I am a recipient of the Howells Prize (American Anthropological Association), Prix Delwart (Royal Academy of Sciences, Belgium), and Osman Hill Medal (Primate Society of Great Britain). I have held visiting appointments at the University of California-Berkeley, University of New Mexico, University of North Carolina-Charlotte, Tulane University, as well as the Collegium Budapest (Hungary), College de France (Paris), and Hanse-Wissenschaftskolleg (Delmenhorst, Germany).

5. I have served on the IUCN-SSC Primate Specialist Group, Africa and Great Apes since 2004 and on the Scientific Board, International Primate Protection League since 1977. I served on the Board of Directors of Chimp Haven, Inc. from 1999-2005 and the Council and Executive Committee of the Royal Zoological Society of Scotland in 1975. I have served on the editorial boards of the following scientific journals: *American Journal of Primatology* (1991 - 1999), *Folia Primatologica* (1989 -2009), the *International Journal of Primatology* (1995 - 2000) and *Primates* (1985 - present).

6. My specialization is in the great apes, and especially the study of the behaviour and ecology of chimpanzees. I have done field research on chimpanzees and bonobos from 1972-2012, in six African countries. These studies have spanned the species' range from West Africa (Senegal and Guinea) to Central Africa (Gabon and Congo-Kinshasa) to East Africa (Tanzania and Uganda). I have collected data on wild chimpanzees at more research sites than any other scientist. I have done behavioural research on captive chimpanzees in laboratories, sanctuaries, wildlife parks, and zoological gardens.

7. I have written or co-edited 10 books, seven of which are relevant here, including: *Chimpanzee Material Culture* (1992, Cambridge University Press); *Topics in Primatology. Vol.1. Human Origins* (1992, University of Tokyo Press); *Chimpanzee Cultures* (1994, Harvard University Press); *Great Ape Societies* (1996, Cambridge University Press); *The Cultured Chimpanzee* (2004, Cambridge University Press), *Chimpanzee Behavior in the Wild* (2010, Springer); *The Evolution of Human Handedness* (2013, Wiley). Some have been translated into such languages as Italian, Japanese, and Slovenian.

8. I have published 162 articles and book chapters on the behaviour, ecology, welfare, or conservation of monkeys and apes, including 101 peer-reviewed articles in the world's most-cited scientific journals: *Nature*, *Science*, *Proceedings of the National Academy of Sciences USA*, *Proceedings of the Royal Society*, *Philosophical Transactions of the Royal Society*, *Evolutionary Anthropology*, *American Journal of Physical Anthropology*, *Animal Behaviour*, *Animal Cognition*, *Current Anthropology*, *Current Biology*, *Trends in Cognitive Science*, as well as more specialised academic periodicals, 44 chapters in edited book volumes, and the rest in the popular press. These publications have covered 15 species of non-human primates, from common marmoset to chimpanzee and gorilla. Specific topics of these publications include: culture, tool-use, diet, sexual

behaviour, sex differences, birth, predation, parasites, social organisation, ranging, kinship, parental behaviour, environmental enrichment, rehabilitation, food-sharing, mating systems, handedness, seasonality, genetics, bipedality, activity budgets, skeletal structure, psychopathology, vegetation ecology, archaeology, alcohol ingestion, and insectivory.

9. I regularly give invited lectures and take part in international symposia in primatology. Over the last 40 years, such speaking engagements have averaged about 4 per year. This does not count many more research talks given at universities or at regional, national or international conferences. These lectures and symposia have taken place in: Austria, Belgium, Canada, England, France, Germany, Guinea, Indonesia, Italy, Japan, Mexico, Portugal, Romania, Russia, Scotland, Singapore, South Africa, Spain, Switzerland, and USA. My Curriculum Vitae fully sets forth my educational background and experience and is annexed hereto as “**Exhibit A**”.

Basis for Opinions

10. The opinions I state in this Affidavit are based on my professional knowledge, education, training, and 40 years of research and field work with chimpanzees, as well as my knowledge of peer-reviewed literature about primatology published in the world’s most respected journals, periodicals and books that are generally accepted as authoritative in the field of primatology, many of which were written by myself and colleagues with whom I have worked for many years and with whose research and field work I am personally familiar. A full reference list of peer-reviewed literature cited herein is annexed hereto as “**Exhibit B**”.

Opinions

11. The chimpanzee (and its sister species, the bonobo) is more closely related to human beings than it is to the other African ape, the gorilla. Of all living organisms, these apes are

the ones with whom we last shared a common ancestor. Thus, the chimpanzee is humankind's closest living relative, and vice versa (Goodman, 1999).

12. Chimpanzees resemble human beings in physiological and anatomical ways. Their blood is interchangeable with human blood, such that a transfusion from a human being could save a chimpanzee's life (or vice versa), so long as the blood groups are properly matched (Segurel et al., 2012).

13. The volume of the brain of the chimpanzee is of comparable size to that of the most recent (but extinct) member of the human evolutionary lineage, *Homo floresiensis* ('The Hobbit') of Indonesia, which lived until as recently as 18,000 years ago (Brown et al., 2004).

14. Chimpanzees' performance on *intelligence* tests is equivalent to that of preschool-aged (3&4 years-old) children, especially in physical intelligence, i.e. object manipulation (Matsuzawa et al., 2006).

15. One of the most important indicators of intelligence in species, including chimpanzees, is the capacity for tool-making and use. Tool-making may imply complex problem-solving skills and an understanding of means-ends relations and causation, as it requires making choices, often in a specific sequence, towards a predefined goal, which is a key aspect of intentional action. Chimpanzees demonstrate intelligent tool-making and use in both nature and captivity, many examples of which are described in the following paragraphs. In nature they make and use tools of vegetation and stone in daily life for hunting, gathering, fighting, play, communication, courtship, hygiene and socializing (McGrew, 1992; 2010, 2013). Tool-making and use is a chimpanzee species universal, found in all populations studied over the long-term.

16. Chimpanzees make and use complex tools that require them to utilize two or more objects towards a single goal. An example is using one stone as a hammer and another as an anvil

for cracking hard nuts (Carvalho et al., 2009). Chimpanzees also make compound tools, in which two or more components are combined as a single working unit. Examples include the leaf sponge in which several fresh leaves are compressed into a single absorbent mass that allows water to be extracted from tree holes (Sousa et al., 2009), and, the wedge stone, in which chimpanzees insert a stone under an anvil to level its working surface to increase its efficiency (Matsuzawa, 1991). Composite tool use such as this is virtually unknown in other nonhuman species and reflects the fact that chimpanzees have the mental capacity to combine components of their environment in appropriate ways to attain a desired outcome. These capacities also involve making adjustments to existing circumstances in order to attain a goal and demonstrating that chimpanzees desire certain outcomes over others and work to achieve them.

17. Chimpanzees also use “tool sets,” which involve using two or more tools in an obligate sequence to achieve a single goal. For example, they have been known to use a set of five objects – pounder, perforator, enlarger, collector, and swab – to obtain honey (Boesch et al., 2009). This kind of sophisticated tool-use involves choosing the appropriate objects in a complex hierarchical sequence in order to obtain a goal which is kept in mind throughout the process. This kind of sequencing and mental representation is a hallmark of intentionality and self-regulation. And, chimpanzees have taken tool-making and use a step further into a realm previously thought to be unique to humans, that is, culture.

18. Culture is behavior that is learned socially (learned by watching others), is normative (represents something most individuals do), and collective (characteristic of a group or community) (McGrew, 2004). In other words, culture is a set of behaviors that is transmitted by social and observational learning (learning by watching others), which becomes characteristic of a certain group or population. Culture is a hallmark of human intelligence and is based on several

high-level cognitive capacities, including imitation (the direct mimicking of bodily actions), emulation (learning about the results of someone else's actions, then achieving those results in another way) and innovation (producing novel ways to do things and combining known elements in new ways) all of which chimpanzees share (see below).

19. Decades of observational field research in various locations in Africa have produced an overwhelming amount of evidence that wild chimpanzees possess different cultural traditions which they pass on from one generation to the next. These chimpanzee traditions meet the same criteria used to identify human culture. There are three general cultural domains found in humans and chimpanzees: 1) material culture, which is defined as the use of one or more physical objects as a means to achieve an end, 2) social culture, which is defined as behaviors that allow individuals to develop and benefit from social living, and 3) symbolic culture, which is defined as special communicative gestures and vocalizations which are only arbitrarily, i.e., symbolically, associated with certain intentions and behaviors (Whiten, 2011; McGrew, 2004).

20. With respect to the tool-making and using aspect of material culture, while all wild chimpanzees make and use tools, each chimpanzee group makes and uses a unique combination of tools known as a "tool kit." (McGrew, 1992, 2010; McGrew, Tutin and Baldwin, 1979). A chimpanzee tool kit is a unique set of about 20 different tools which are used for various functions in daily life. These include tools used for foraging and processing food, such as specialized sticks to open up termite mounds, stems used as probes in ant nests, sticks to get marrow out of the bones of dead animals, stone "hammer and anvil" to crack nuts, among a wide variety of others. Tools are also made and used for personal comfort and hygiene, including using leaves to clean the body, using certain stems to comb through hair, using sticks to clear the nasal passages and using a leafy twig to fan away flies, among many others. Tools also include those used for nest building (for

sleeping) which involve specialized ways of bending branches and sticks to make a comfortable and secure sleeping nest in the trees. These tool kits vary from group to group, are passed down by observing others performing the tasks and are found in a wide range of ecological locations, from savanna to rainforest. Tool-making is not genetically determined or fixed, that is, it is not “hard-wired” behavior or simple reflex. Rather, tool-making depends on the same mental abilities that underlie human culture – learning from others and making specific decisions about how to do things. Each chimpanzee group develops its own culture through its own behavioural choices. (McGrew, 1991, 2004; 2007; McGrew and Tutin, 1978; Schoening et al., 2008; Whiten, 2011 Whiten et al., 1999). The documented patterns of variation across chimpanzee groups are unique in the nonhuman animal world. Decades of field work show that there are at least 40 unique chimpanzee cultures spread across Africa. These cultures are made up of combinations of over 65 different identifiable behaviors. In addition to those already mentioned, these also include the ingestion of various plant materials for their medicinal properties as anti-bacterial agents and dewormers (Huffman et al., 1997).

21. Many of the tools in chimpanzee tool kits are not preserved in the archaeological record because they are made of organic materials that decompose over time, such as leaves, stems, bark, etc.. However, such chimpanzee stone tools as hammer and anvils are preserved in the archaeological record in the same way as are human stone tools. Therefore, chimpanzee stone artefacts have been compared with early human stone artefacts in terms of what they reveal about their comparative mental abilities. The foraging tool kits of some chimpanzee populations, such as in western Tanzania, are indistinguishable in complexity from the tools kits of some of the simplest material cultures of humans, such as Tasmanian aborigines (McGrew, 1987), and of the oldest known human artefacts, such as those of the Oldowan Industry discovered in East Africa

(Wynn and McGrew, 1998; Wynn et al. 2011). Dated chimpanzee stone artefacts that have been excavated from sites in West Africa show that there was once a chimpanzee “Stone Age” (just as there was a Stone Age for humans) that dates to at least 4,300 years ago (Mercader et al., 2002, 2007). The ages of the tools suggest that, in at least one population chimpanzee tool-making culture has been passed down for 225 generations (Boesch, 2012). These findings demonstrate that chimpanzee culture has very deep roots that predate the onset of settled farming villages and the invention of Iron Age technology in that part of Africa.

22. With respect to social culture, there are many social displays and social customs that chimpanzees pass down from one generation to the next (McGrew et al. 2001; Whiten et al. 1999). Examples include the famous “waterfall display” originally reported by Jane Goodall (1986). At a waterfall in the Gombe National Park, Tanzania, she observed male chimpanzees approach the waterfall and display in slow, rhythmic motion along the riverbed. For ten minutes or more, they pick up and throw rocks and branches, leap to seize hanging vines, and swing over the stream in the wind. Goodall refers to these purposeful displays as likely expressions of feelings of awe in the chimpanzees towards the waterfall. Another example is the social “rain dance”, which is a slow and deliberate pattern of rhythmic, bipedal locomotion at the start of rain performed mostly at the beginning of rainy season (Goodall, 1967). Another well-documented social custom is the grooming hand-clasp in which two chimpanzees clasp each other’s hands, raise those arms in the air, and groom each other with their free hand. This social custom was first observed in the Mahale Mountains of Tanzania (McGrew and Tutin, 1978) and occurs, with some variation, in certain locations and is completely absent in others (Nakamura and Uehara, 2004). This demonstrates the wide variability in social cultural expression across different chimpanzee groups.

23. The symbolic element that is key to human culture, is also found in wild chimpanzees. For instance, in one chimpanzee group arbitrary symbolic gestures are used to communicate desire to have sex whereas in another group an entirely different symbolic gesture is used to express the same sentiment (McGrew, 2011). The presence of symbolic culture in chimpanzees demonstrates that abstract concepts can be present without human language.

24. Comparisons between human and chimpanzee cultures demonstrate that the similarities are underwritten by a common set of mental abilities. The most important are imitation and emulation. Learning by observation is key to being able to imitate or emulate. Studies show that chimpanzees copy methods used by others to manipulate objects and use both direct imitation and emulation, depending on the circumstance (Horner and Whiten, 2005; Whiten et al., 2009). True imitation, which involves copying bodily actions, is an important hallmark of self-awareness because it suggests the individual has a sense of his own body and how it corresponds to someone else's body and that he can manipulate his body in accordance with the other's actions. There is ample evidence that, under the right circumstances, chimpanzees mimic the actions of others precisely, even mimicking the correct sequence of actions to achieve a goal (Buttleman et al., 2007; Whiten et al., 1996; Whiten et al., 2009). For instance, chimpanzees can imitate the actions of humans, or other chimpanzees, as well as the exact sequence of three actions in order to open up an "artificial fruit" to get a treat (Whiten et al., 1996). Chimpanzees may directly imitate someone else's way to achieve a goal when they have not yet figured out their own way to achieve the same goal. But, when chimpanzees already have the skills to complete a task they tend to emulate, not imitate (Horner and Whiten, 2005). These findings show that chimpanzees make choices about whether to directly copy someone else's actions based on whether they think they can figure out how to do the task themselves. Not only do chimpanzees imitate, but they know

when they are being imitated, and respond as young human toddlers do when they realize they are being imitated (Nielsen et al., 2005; Haun and Call, 2008). When imitated, both chimpanzees and young human children tend to “test out” the behavior of the imitator by making repetitive actions and looking to see if the imitator does the same. This behavior is similar to how chimpanzees and toddlers test whether an image in a mirror is herself. This action, called “contingency checking,” is another hallmark of self-awareness. In addition to being aware of being imitated and being able to imitate others, chimpanzees are capable of “deferred imitation,” that is, copying actions they’ve seen in the past (Bering et al., 2000; Bjorklund et al., 2000; Marshall-Pescini and Whiten, 2008). Deferred imitation relies upon even more sophisticated capacities than direct imitation because the chimpanzees must remember the past action of another while replicating those actions in real time.

25. Finally, all of these capacities for imitation and emulation are necessary for “cumulative cultural evolution.” This specific kind of cultural capacity, which is found in humans and chimpanzees, involves the ability to build upon the customs that came before (Nagel et al., 1993; Hirata and Mirimara, 2000; Myowa-Yamakoshi and Matsuzawa, 2000; Yamamoto, Humle and Tanaka, 2013). Moreover, chimpanzees, like humans, have a tendency to be social conformists (Whiten, Horner and de Waal, 2005), which allows them to maintain customs within groups. All of the evidence so far suggests a striking similarity between the mental capacities of humans and chimpanzees in the areas of observational learning, imitation (and thus self-awareness), decision-making, memory and innovation.

26. Chimpanzees appear to have moral inclinations and some level of moral agency, that is, they behave in ways that, if we saw the same thing in humans, we would interpret as a reflection of moral imperatives and self-consciousness. They ostracise individuals who violate social norms (Goodall, 1986). They respond negatively to inequitable situations, e.g. when offered

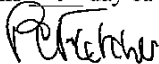
lower rewards than companions receiving higher ones, for the same task (Brosnan et al., 2005). When given a chance to play economic games (e.g. Ultimatum Game), they spontaneously make fair offers, even when not obliged to do so (Brosnan, 2013; Horner et al., 2011; Proctor et al., 2013; von Rohr, 2012).

27. Chimpanzee social life in nature is cooperative. They engage in collaborative social hunting, in which different individual hunters adopt different roles that increase the chances of success of the hunt. After the hunt, they share the meat from the prey gained (Boesch, 2012). Males cooperate in territorial defense, when they engage in risky boundary patrolling. Encounters with neighbouring males may be fatal, so that such cooperation may have life-or-death consequences (Mitani et al., 2010). These types of behaviors represent a purposeful and well-coordinated social system.



William C. McGrew

Sworn to before me
this 21st day of November, 2013



Notary Public

PETER C. FLETCHER
Notary Public
27 Pretoria Road
Cambridge CB4 1HD
My commission is for life

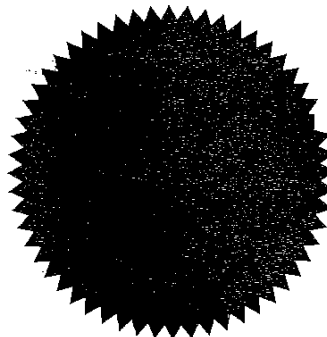


Exhibit A to McGrew Affidavit -

Curriculum Vitae

[pp. 435 - 461]

This is "Exhibit A"
 referred to in the Affidavit of
 William C. McGrew
 Petitioner Norman Ruben
 2/2/13

Curriculum vitae: **WILLIAM CLEMENT MCGREW**

(March 2012)

Work Addresses: Department of Archaeology and Anthropology
 University of Cambridge
 Fitzwilliam St
 Cambridge CB2 1QH, U.K.
 Email: wcm21@cam.ac.uk

Corpus Christi College
 Trumpington St
 Cambridge CB2 1RH

Education

2009 Ph.D. in Biological Anthropology, University of Cambridge, England

1990 Ph.D. in Social Anthropology, University of Stirling, Stirling, Scotland
 Thesis: *Chimpanzee Material Culture: Implications for Human Evolution*

1970 D.Phil. in Psychology, University of Oxford, Oxford, England
 Thesis: *An Ethological Study of Social Behaviour in Preschool Children*

1965 B.S. (with Special Distinction) in Zoology, University of Oklahoma, Norman, USA

Awards and Honours

2012 Senior Fellow, McDonald Institute for Archaeological Research, Cambridge

2010 Distinguished Alumni Award, College of Arts and Sciences, University of Oklahoma

2008 Osman Hill Medal, Primate Society of Great Britain

2005 Fellow, American Association for the Advancement of Science

2003 Corresponding Fellow, Royal Society of Edinburgh, Scotland

1998 Prix Delwart, for Human Ethology and Cultural Anthropology, Fondation Jean-Marie Delwart and Royal Academy of Sciences of Belgium (\$10,000)

1996 W.W. Howells Book Prize in Biological Anthropology, American Anthropological Association

1995 Outstanding Research Award, Center for Research into the Anthropological Foundations of Technology, and Leighton A. Wilkie Memorial Lecture, Indiana University

Professional Training and Employment

2010 (Jul)	Visiting Fellow, Hanse-Wissenschafts Kolleg, Delmenhurst, Germany
2009-	Professor of Evolutionary Primatology, University of Cambridge
2005-09	Lecturer in Biological Anthropology, University of Cambridge
2008	Fellow, Corpus Christi College, Cambridge
2003 (Oct-Dec)	Fellow, Collegium Budapest, Hungary
2003 (Jan-Jun)	Visiting Bye Fellow, Selwyn College, and Visiting Research Fellow, Leverhulme Centre for Human Evolutionary Studies, University of Cambridge
2001 (Jul-Aug)	Russell Trust Senior Research Fellow, School of Psychology, University of St. Andrews, Scotland
2001 (Jun)	Visiting Professor, Ecole des Hautes Etudes en Sciences Sociales, College de France, Paris
1994-2005	Professor, Depts. of Anthropology and Zoology Miami University
1994 (autumn)	Visiting Professor, Dept. of Anthropology University of California, Berkeley
1993-94	Wiepking Distinguished Professor, Depts. of Sociology & Anthropology, Psychology, and Zoology, Miami University, Oxford, Ohio
1993 (spring)	Visiting Faculty Member, Dept. of Biology Earlham College, Richmond, Indiana
1989-92	Reader in Psychology, University of Stirling
1986 (autumn)	Visiting Faculty Member, Depts. of Anthropology and Biology University of New Mexico, Albuquerque
1982	Nuffield Foundation Social Science Research Fellow
1981-89	Senior Lecturer in Psychology, University of Stirling
1980 (autumn)	Visiting Faculty Member, Dept. of Psychology University of North Carolina at Charlotte
1974-81	Lecturer in Psychology, University of Stirling, Scotland
1972-73	Research Associate, Dept. of Psychiatry and Behavioral Sciences Stanford University, and Gombe Stream Research Centre, Kigoma, Tanzania
1972	Visiting Investigator, Delta Regional Primate Research Center Tulane University, Louisiana

- 1971
(summer) Participant in Wenner-Gren Foundation Field School in Primatology
Caribbean Primate Research Center, Cayo Santiago, Puerto Rico
- 1970-71 SSRC Postdoctoral Research Associate, Dept. of Psychology
University of Edinburgh, Scotland
- 1969-70 National Institutes of Mental Health Postdoctoral Fellow
Dept. of Psychology, University of Edinburgh
- 1968-69 Population Council Fellow, Dept. of Psychology, University of Edinburgh
- 1965-68 Rhodes Scholar, University of Oxford, Inst. of Experimental Psychology (66-68); Dept. of
Zoology (65-66)

Research Grants

- 2011 Emeritus Fellowship, "Chimpanzee Behaviour and Modeling Human Evolutionary Origins"
Leverhulme Trust, £22,000
- 2005 "Sex Differences in Faunivory of Wild Bonobos at Salonga," Leakey Foundation, \$14,500
(with L.F. Marchant)
- 2003-08 Revealing Hominid Origins Initiative," National Science Foundation, HOMINID program,
\$48,000 (sub-contract, PI: F. Clark Howell & T.D. White, Univ. California-Berkeley)
- 2000 "Savanna Chimpanzee Behavior and Ecology at Mont Assirik, Senegal," National
Geographic Society, \$7000 (with J.D. Pruetz)
- 2000 "Savanna Chimpanzee Density and Distribution at Mont Assirik, Senegal," Primate
Conservation, Inc., \$2500 (with J.D. Pruetz)
- 1999 "Sex Differences in Faunivory in Wild Chimpanzees at Mont Assirik, Senegal," L.S.B.
Leakey Foundation, \$13,000 (with L.F. Marchant)
- 1999 "Behavioral Ecology of Wild Chimpanzees at Mont Assirik, Senegal", Philip and Elaina
Hampton Fund, Miami University, \$6000 (with L.F. Marchant)
- 1996 "Behavior of Wild Chimpanzees in Tanzania: Handedness, Prehension and Object
Manipulation", Philip & Elaina Hampton Fund, Miami University, \$5961 (with L.F.
Marchant)
- 1995 "Comparative Research on Chimpanzees and Bonobos", Max-Planck-Gesellschaft,
D.M. 5000 (with L.F. Marchant)
- 1995 "Great Ape Societies", Publication grant, Wenner-Gren Foundation for Anthropological
Research, \$10,000 (with L.F. Marchant, T. Nishida).
- 1994 "Laterality of Function in Human and Nonhuman Primates", Max-Planck-Gesellschaft,
D.M. 7000 (with L.F. Marchant)
- 1993 "Laterality of Function in Traditional Human Societies", Max-Planck-Gesellschaft,
D.M. 12,000 (with L.F. Marchant)

- 1992 "Laterality of Limb Function in Wild Chimpanzees, Gombe, Tanzania", L.S.B. Leakey Foundation, \$7500 (with L.F. Marchant)
- 1981 "Cross-Cultural Study of Tool-use by Wild Chimpanzees", Science and Engineering Research Council, £11,859.
- 1979 "Ecology and Ethology of Four Sympatric Primate Species in Senegal, West African (Final Stage)", Science Research Council, £13,462.
- "Chimpanzees in Senegal Using Tools to Obtain Termites", Leakey Foundation, \$1462.
- 1978 "Ecology and Ethology of Four Sympatric Primate Species in Senegal, West Africa (Supplement)", Science Research Council, £13,650.
- 1977 "Ecology and Ethology of Four Sympatric Primate Species in Senegal, West Africa", Science Research Council, £15,644.
- 1976 "Ecology and Behavior of Chimpanzees, West Africa", Wenner-Gren Foundation for Anthropological Research, \$1000.
- "Ecology and Behavior of Wild Chimpanzees in Senegal, West Africa", Science Research Council, £4164.
- 1975 "Field Study of Wild Chimpanzees in Senegal", Carnegie Trust for the Universities of Scotland, £2000.
- "Behavior and Ecology of Wild Chimpanzees in Senegal", Leakey Foundation, \$2000.

Plus 23 smaller grants totaling ca. \$16,000 awarded from 1974-2011 by American Philosophical Society, Boise Trust, British Council, Carnegie Trust for the Universities of Scotland, L.S.B. Leakey Trust, Royal Anthropological Institute, Royal Society, Royal Zoological Society of Scotland, University of Stirling, University of Cambridge.

Teaching

Semester courses taught (all or in part) at Earlham College (E) or at Universities of California (C), Cambridge (Cb), Stirling (S), New Mexico (NM), North Carolina at Charlotte (NC), or Miami University (M):

Apes & Human Evolution		Cb
Animal Behaviour		S
Avian & Mammalian Social Systems	(Graduate)	NM
Behavioral Ecology & Conservation Biology	(Graduate)	M
Behavioral Primatology		C, S
Cultural Primatology		Cb
Developmental Psychology		NC, S
Evolution of Human Behaviour	(Capstone)	M, S, NC
Evolutionary Medicine	(Graduate)	M
Heredity, Environment, & Human Society		M
The Human Animal	(Capstone, Honors Seminar)	M

Human Evolutionary Ecology	(Graduate)	M
Introductory Psychology		S
Foundations of Biological Anthropology		M
Mammalogy		M
Origins of Human Material Culture	(Graduate)	C, NM
Primate Behavior & Human Evolution	(Honors Seminar)	S, Cb
Socio-Ecology of Primates		M, E, Cb
Senior Seminar in Anthropology	(Capstone)	M

External examination of Ph.D.'s at the Universities of Birmingham, Reading, St. Andrews, Sheffield, Stirling, London (Birkbeck, UCL, Goldsmiths); M.Phil. (CNAA) Birmingham Polytechnic; and M.Sc. at St. Andrews.

1992 Award from University of Stirling Teaching Fund: £1072 to develop new program of teaching practicals in Animal Behaviour.

Graduate Student Primary Supervision

Baldwin, P.J. Ph.D. 1979	The natural history of the chimpanzee (<i>Pan troglodytes verus</i>) at Mt. Assirik, Senegal.
Niemeyer, C.L. M.Sc. 1980	Interference in mating in the stumptailed macaque (<i>Macaca arctoides</i>).
Harrison, M.J.S. Ph.D. 1982	The behavioural ecology of green monkeys, <i>Cercopithecus sabaeus</i> , at Mt. Assirik, Senegal.
Chamove, A.S. Ph.D. 1982	Development of aggressiveness in macaques.
Feistner, A.T.C. M.Sc. 1985	Food sharing in the cotton-top tamarin, <i>Saguinus oedipus oedipus</i> .
Williamson, E.A. Ph.D. 1988	Behavioural ecology of the lowland gorilla (<i>Gorilla g. gorilla</i>) in Gabon.
Brereton, A.R. Ph.D. 1988	Sexual interference in stumptail macaques (<i>Macaca arctoides</i>): Is it return-benefit spite?
Hannah, A.C. Ph.D. 1989	Behavioural rehabilitation of laboratory chimpanzees in Liberia.
Price, E.C. Ph.D. 1990	Cooperative breeding in captive families of the cotton-top tamarin.
Moore, K. M.Sc. 1993	Dispersal and philopatry in captive cotton-top tamarins.

- Oberski, I.
Ph.D. 1993 Grooming relations in captive chimpanzees, Edinburgh Zoo.
- Newing, H.
Ph.D. 1994 Behavioural ecology of duikers (*Cephalophus* spp.) in forest and farm bush, Tai, Cote d'Ivoire.
- Ham, R.
Ph.D. 1994 Behaviour and ecology of grey-cheeked mangabeys (*Cercocebus albigena*) in the Lope Reserve, Gabon.
- Hardie, S.M.
Ph.D. 1995 Polyspecific associations of tamarins (Callitrichidae).
- Henry, M.
M.Sc. 1998 Competition for resources between *Homo sapiens* and *Pan paniscus* in the Lomako Forest of Zaire.
- Videan, E.N.
M.Sc. 2000 Bipedality in bonobo (*Pan paniscus*) and chimpanzee (*Pan troglodytes*): Implications for the origins of bipedalism in hominids.
- Videan, E.N.
Ph.D. 2005 Chimpanzee nest-building and sleep: A model for the evolutionary origins of shelter.
- Persad-Clem, R.
Ph.D. 2009 Adaptation of captive chimpanzees to free-ranging in a natural temperate environment.
- Smaers, J.
M. Phil. 2006 Comparative socioecology of primate brain component evolution.
- Koops, K.
Ph.D. 2011 Elementary technology of foraging and shelter in the chimpanzees of the Nimba mountains, Guinea.
- Phillips, C.
Ph.D. 2012 Chimpanzee diet: Analyses at macroscopic, microscopic and molecular level.
- Stewart, F.
Ph.D. 2011 The evolution of shelter: Ecology and ethology of chimpanzee nest-building.
- Carvalho, S.
Ph.D. student Evolutionary origins of technological behaviour: A primate archaeology approach to chimpanzees
- Bertolani, P.
Ph.D. student GIS-based study of chimpanzee ranging

Professional Societies (Offices Held)

American Association for the Advancement of Science	
Electorate Nominating Committee, Anthropology	2001-2004
Chimp Haven, Board of Directors	1999-2005
International Primate Protection League, Scientific Advisory Board	1977-

International Society for Human Ethology, Board of Trustees	1978-1982, 2005-
Primate Specialist Group-Africa	1985-
IUCN-SSC Primate Special Group, Sub. Comm. on Great Apes	2004-
Primate Society of Great Britain, Council	1985-1988
Working Party on Conservation	1979-1983
Royal Anthropological Institute, Council	1990-1992
Committee on Biological & Social Anthropology	1988-1991
Royal Zoological Society of Scotland, Council	1974-1978; 1990-1992
Executive Committee	1975
Animal Health and Management Committee	1974-1981

Editorial Boards

<i>American Journal of Primatology</i> , Consulting Editor	1991-1999
<i>Carnivore</i>	1978-1983
<i>Ethology and Sociobiology</i> , European Editor	1984-1992
Editorial Board	1994-1996
<i>Folia Primatologica</i>	1989-2009
<i>Human Ethology Newsletter</i> , Reviews Co-Editor	1982-1986
<i>Human Evolution</i>	1994-
<i>Human Nature</i>	1990-1996
<i>International Journal of Primatology</i>	1995-2000
<i>Journal of Human Evolution</i> , Assoc. Editor	1983, 1992-1995
<i>Man</i>	1987-1992
<i>Pan Africa News</i>	1997-
<i>Primates</i>	1985-

Reviewing of Grant Applications/Book Proposals/Manuscripts (cumulative)

Review Panel, Individual Research Grants, Wenner-Gren Foundation for Anthropological Research, 2004-2005
 Alexander von Humboldt Foundation, Association for the Study of Animal Behaviour, Bonobo Protection Fund, Cambridge University Press, Canada Council, H.F. Guggenheim Foundation, Harvard University Press, Japan Society for the Promotion of Science, L.S.B. Leakey Foundation, Leverhulme Trust, Charles & Anna Morrow Lindbergh Foundation, National Geographic Society, National Science Foundation (Anth., Psychobiol.), Primate Conservation Inc., Princeton University Press, Royal Anthropological Institute, School of American Research Press, Science & Engineering Research Council, W.H. Freeman, Wenner-Gren Foundation for Anthropological Research

Reviewing of Journal Manuscripts (cumulative)

African Journal of Ecology, *American Journal of Primatology*, *American Journal of Physical Anthropology*, *American Naturalist*, *Animal Behaviour*, *Animal Welfare*, *Annals of Tropical Medicine & Hygiene*, *Behavioral and Brain Sciences*, *Behaviour*, *Biology Letters*, *Cambridge Archaeological Journal*, *Carnivore*, *Current Anthropology*, *Developmental Psychobiology*, *Ecology*

and Evolution, Ecotopica, Ethology and Sociobiology, Ethology, Evolutionary Anthropology, Folia Primatologica, Geographica, Human Evolution, Human Nature, Intl Journal of Behavioral Development, Intl Journal of Primatology, Journal of Archaeological Science, Journal of Comparative Psychology, Journal of Human Evolution, Journal of Linnean Society of London, Journal of Royal Anthropological Institute, Laterality, Man, Nature, Oryx, Pan Africa News, Primates, Proceedings of the National Academy of Sciences USA, Proceedings of the Royal Society of London B, Quarterly Journal of Experimental Psychology, Science, Yearbook of Physical Anthropology, Zoo Biology.

Invited Lectures to National or International Meetings

- 2011 "Triangulating on Technology: Three Routes to Percussive Lithics in Primates", podium presentation, Fourth Congress of European Federation for Primatology, Lisbon, PORTUGAL.
- 2011 "Unnatural Behaviour: Obstacle or Insight at the Species Interface?", roundtable, 'Humans and Other Apes: Rethinking the Species Interface', New York, NY.
- 2011 "Memories of Gombe over Three Decades", symposium, 'An Oral History of Primatology at Cambridge', Personal Histories Project, Cambridge.
- 2011 "Chimpanzees and the Last Common Ancestor", Invited public lecture, Institute of Human Origins, Arizona State Univ., Tempe, AZ.
- 2010 "Fifty Years of Chimpanzee Tool Use: What's Left to Know?", lect., University of Oklahoma, USA
- 2009 "The First 4 Million Years of Human Evolution", Royal Society, discussion meeting, London
- 2009 "150 Anos de Darwin: Evolucion futuro o crisis?", CENIEH, Symp, Burgos, Spain
- 2009 "The Dawn of Language, Imagination, and Spirituality", Templeton Foundation, symp., Cape Town, South Africa
- 2008 W.C. Osman Hill Lecture, Primate Society of Great Britain, London, U.K.
- 2008 "Origins of Percussive Technology", Leverhulme Centre for Human Evolutionary Studies, symp., Cambridge, U.K.
- 2008 "Fest Conference for W. Schiefenhoewel", Max-Planck-Gesellschaft, symp., Andechs, Germany
- 2008 "Human and Non-Human Ethology", symp., Russian Academy of Sciences, Novosibirsk, Russia
- 2007 Belgian Group for Primatology, keynote lecture, Antwerp, Belgium
- 2007 7th Kongress der Gesellschaft für Anthropologie, plenary lecture, Freiburg, Germany
- 2007 "The Mind of the Chimpanzee," Understanding Chimpanzees IV, symp., Chicago, USA
- 2007 James Drever Lecture, School of Psychology, University of Edinburgh, Scotland
- 2006 "Anthropology at UCL," symp., University College London
- 2006 "Transcultural Universals," symp., Wissenschaftskolleg, Delmenhorst, Germany
- 2006 "Bossou 30 Ans," symp. Conakry, Republic of Guinea
- 2006 Journal of Anthropological Research Annual Lecture, Albuquerque, USA
- 2005 "Nature, Language, Culture: Learning from Animals?" symp., Essen, Germany
- 2005 "Chimpanzee Cultures," Origins of Humans, San Diego, USA
- 2005 "Chimpanzee Material Culture," Chacmool Conf., symp. Calgary, Canada
- 2004 "African Great Apes: Evolution, Diversity & Conservation", symp., Kyoto University, Japan
- 2003 "Konrad Lorenz Symposium," Ludwig-Maximilians-Universität, Munich, Germany
- 2003 "Konrad Lorenz Symposium 2," Bucharest, Romania
- 2003 "International Primatological Conference," Lisbon, Portugal
- 2002 "Evolution, Behaviour, Society," Human Ethology Summer School, Pushchino, Russia
- 2002 "Production and Reproduction," Southern California Primate Research Forum, Los Angeles, USA
- 2001 "Culture in Marine Mammals," Biennial Marine Mammals Conference, Vancouver, Canada
- 2001 "Fluid Bread: Images and Usages of Beer in Crosscultural Perspective," symp., International Commission for the Anthropology of Food, Seewiesen, Germany

- 2001 "Evolutionary Neighbors," symp., 4th International SAGA Forum, Okayama, Japan
- 2000 "The Social Brain: Evolution and Pathology", symp., Max-Planck Inst. Beh. Physiol., Bochum, Germany
- 2000 "Animal Social Complexity and Intelligence", symp., Chicago Acad. of Sci, Chicago, USA
- 2000 "Human Universals", symp., Hanse Wissenschaftskolleg, Andechs, Germany
- 2000 "Chimpanzee Cultures", exhibition, New Frontiers in Science 2000, Royal Society and Royal Society of Edinburgh, London and Edinburgh, UK
- 2000 "Behavioral Diversity in Chimpanzees and Bonobos", symp., Max-Planck Inst. Evolutionary Anthropol., Seeon, Germany
- 1999 "Evolution and Culture", symp., Fondation Fyssen, St. Germaine, France
- 1999 "Anthropology at the End of the Century", symp., Wenner-Gren Foundation, Cabo San Lucas, Mexico
- 1999 "Origins", symp., Living Links Center for Advanced Study of Human and Ape Evolution, Atlanta, USA
- 1999 "Primate Cultures", symp., Southern California Primate Research Forum, Los Angeles, USA
- 1998 "The Early Human Diet: The Role of Meat", symp., Wenner-Gren Foundation, Madison, USA
- 1998 "Hominid and Non-Hominid Primate Behaviour and Lifestyles", symp., Dual Congress of Int. Assn. Study of Human Palaeontology and Int. Assn. of Human Biologists, Sun City, South Africa
- 1998 "Evolving the Human Mind", symp., Hang Seng Centre for Cognitive Studies, Sheffield, UK
- 1998 "Primateology and Human Nature", roundtable, Dialogue between Science and Religion, Amer. Assn. Advancement Sci., Washington, USA
- 1997 "Human Evolution", symp., Cold Spring Harbor Laboratory, New York, USA
- 1997 "Exploring the Primate Mind", symp., National Zoological Park, Smithsonian Institution, Washington USA
- 1995 "Chimpanzee Behavioral Diversity", plenary lecture, Midwest Animal Behavior Conference, Oxford, USA
- 1994 "The Great Apes Revisited", symp., Wenner-Gren Foundation, Cabo San Lucas, Mexico
- 1994 "Anthropologie Heute", symp., Gesellschaft für Anthropologie, Potsdam, Germany
- 1992 "Ethological Roots of Culture", NATO Advanced Study Inst., Cortona, Italy
- 1991 "Great Apes of the World", symp., Orangutan Foundation International, Jakarta, Indonesia
- 1991 "Food and the Status Quest", symp., European Commission on the Anthropology of Food, Ringberg, Germany
- 1991 "Foraging Strategies and Natural Diet of Monkeys, Apes, and Humans", symp., Royal Society Discussion Meeting, London, UK
- 1991 "Understanding Chimpanzees II", symp., Chicago Acad. of Sci., symp., Chicago, USA
- 1990 "Tools, Language, and Intelligence: Evolutionary Implications", symp., Wenner-Gren Foundation, Cascais, Portugal
- 1988 "Tool-Use by Primates", symp., Fondation Fyssen, Versailles, France
- 1987 "Comparative Socioecology of Mammals and Man", symp., Brit. Ecological Society and Royal Anthropol. Inst., Durham, UK
- 1986 "The Pleistocene Perspective", symp., World Archaeology Congress, Southampton, UK
- 1986 "Understanding Chimpanzees", symp., Chicago Acad. of Sci., Chicago, USA
- 1986 "Fourth International Conference on Hunting and Gathering Societies", symp., London, UK
- 1985 "Primates", symp., British Social Biology Council, London, UK
- 1984 "The Sharing of Food", symp., Werner Reimers Stiftung, Bad Homburg, Germany
- 1980 "Nonhuman Primates in Biomedical Programs", symp., Humane Society of U.S.A., San Francisco, USA
- 1974 "The Great Apes", symp., Wenner-Gren Foundation, Burg Wartenstein, Austria
- 1972 "The Growth of Competence", Ciba Foundation, London, UK

Colloquia Given at Universities and Other Places (* = Multiple)

* Aberdeen, Alberta, * Andechs (Max-Planck), * Arizona State, Armstrong Atlantic, Basel, Bristol, Bucknell, Budapest, Buffalo, * California-Berkeley, California-Davis, California-Los Angeles, * California-San Diego, * Cal State-Fullerton, * Cambridge, Case-Western, Centenary, * Centre College, Charleston, Chester, Chicago Zool. Soc., Cincinnati, Colorado-Boulder, Colorado-Colorado Springs, Colorado-Denver, * Duke, Dundee, * Durham, * Earlham, * Edinburgh, Emory, Georgia, George Washington University, Glasgow, * Göttingen, Illinois, * Indiana, * Jersey Zoo, * John Carroll University, Kent, Kent State, Leipzig, * Liverpool, Manchester, * Miami (Ohio), Michigan, * Milano, Minnesota, Munich, * New Mexico, New York University, North Carolina-Charlotte, Ohio State University, * Oklahoma, * Oxford, Oxford Brookes, Pisa, Potsdam, Roma, * St. Andrews, South Carolina-Beaufort, Stanford, Southern California, * Stirling, Tennessee, * University College London, Utica, * Wisconsin, Wright State, * Zürich

Conference Organization

- 2012 "Insectivory", symposium, American Association of Physical Anthropologists, Portland, Oregon
- 2011 "Lateral Thinking: The Evolution of Human Handedness", workshop, HWK, Delmenhorst, Germany
- 2007 "Palaeoanthropology Meets Primatology," symposium, LCHES, University of Cambridge
- 2005 "Primatology Meets Palaeoanthropology," workshop, Miami University, Oxford, Ohio
- 1996 "Cebus Meets Pan," Symposium of International Primatological Society, Madison (with E. Visalberghi)
- 1996 "Nesting and Resting in Primates", Symposium of International Primatological Society, Madison (with B. Fruth)
- 1994 "The Great Apes Revisited", Wenner-Gren Foundation for Anthropological Research, Cabo San Lucas, Mexico (with T. Nishida)
- 1992 "Scottish Conference on Animal Behaviour", Stirling
- 1990 "Origins of Monogamy", Symposium of International Primatological Society, Kyoto
- 1989 "Behavioural Ecology of Neotropical Primates", Meeting of Tropical Ecology Group, British Ecological Society, London
- "Weekend Workshop on Callitrichid Behavior", Scottish Primate Research Group, Stirling
- 1988 "Tools Compared: The Material of Culture", Conference of Royal Anthropological Institute, London
- 1985 "Scottish Conference on Animal Behaviour", Stirling
- 1982 "Gorilla Ecology", Workshop of International Primatological Society, Atlanta
- 1981 "Scottish Conference on Animal Behaviour", Stirling
- 1980 "Primate Tool-Use", Satellite Symposium of International Primatological Society, Florence

Books

- 1972 McGrew, W.C. *An Ethological Study of Children's Behavior*. New York: Academic Press, 268 pp.

Published in The Child Psychology Series. Had positive reviews in *Nature*, *Science*, *Contemporary Psychology*, etc. Translated into Italian and Japanese.

- 1992 Nishida, T., McGrew, W.C., Marker, P., Pickford, M. & de Waal, F.B.M. (eds.) *Topics in*

Primate, Volume 1. Human Origins. Tokyo: University of Tokyo Press, 475 pp.

- 1992 McGrew, W.C. *Chimpanzee Material Culture: Implications for Human Evolution.* Cambridge University Press, 277 pp.

Won the 1996 W.W. Howells Prize of the American Anthropological Association, for the best book of the year in biological anthropology. Had positive reviews in *Nature*, *Science*, *Scientific American*, *New Scientist*, *American Scientist*, as well as in popular press, e.g. *Economist*, *Times Higher*, and disciplinary journals, e.g. *Contemporary Psychology*, *Cambridge Archaeological Journal*. In its fourth printing, and translated into Japanese.

- 1994 Wrangham, R.W., McGrew, W.C., de Waal, F.B.M. & Heltne, P.G. (eds.) *Chimpanzee Cultures.* Cambridge, MA: Harvard University Press, 424 pp.

This edited volume received positive reviews in *Science*, *New Scientist*, *Science News*, *Ethology*, *Times Higher*, *Los Angeles Times*, etc. Went into paperback a year after publication.

- 1996 McGrew, W.C., Marchant, L.F. & Nishida, T. (eds.) *Great Ape Societies*, Cambridge: Cambridge University Press, 328 pp.

This edited volume received positive reviews in both general (*Nature*, *American Scientist* and specialist (*American Zoologist*, *Evolutionary Anthropology*, *Man*) scientific journals, as well as the popular press (*BBC Wildlife*, *Times Higher*). In its third printing.

- 2004 McGrew, W.C. *The Cultured Chimpanzee: Reflections on Cultural Primatology*, Cambridge University Press, 248 pp.

Positive reviews in *Nature*, *American Scientist*, *Primates*, *American Anthropologist*, etc.

- 2010 Nishida, T., Zamma, K., Matsusaka, T., Inaba, A. & McGrew, W.C. *Chimpanzee Behavior in the Wild: A Visual Encyclopedia.* Springer Verlag, 255 pp.

Journal Articles & Book Chapters (refereed journal articles in bold)

1. 1969 McGrew, W.C. An ethological study of agonistic behaviour in preschool children.
In: *Proceedings of the Second International Congress of Primatology, Volume 1, Behavior*, Carpenter, C.R. (ed), Basel: Karger, pp. 149-159.
2. 1970 McGrew, W.C. Glossary of motor patterns of four-year-old children.
In: *Direct Observation and Measurement of Behavior*, Hutt, S.J. & C., Springfield, IL: Charles C. Thomas, pp. 210-218.
3. 1971 McGrew, W.C. & McGrew, P.L. Group formation in preschool children.
In: *Proceedings of the Third International Congress of Primatology, Volume 3, Behavior*, Kummer, H. (ed), Basel: Karger, pp. 71-78.
4. Hudson, P.T., McGrew, W.C. & McGrew, P.L. Attention structure in a group of preschool infants.
In: *Proceedings of the CIE Architectural Psychology Conference*, Kingston-on-Thames: RIBA & Kingston Polytechnic, pp. 12-16.
5. 1972 McGrew, W.C. Aspects of social development in nursery school children, with emphasis on

- introduction to the group.
In: *Ethological Studies of Child Behaviour*, Blurton Jones, N.G. (ed.),
London: Cambridge University Press, pp. 129-156.
6. McGrew, P.L. & McGrew, W.C. Changes in children's spacing behaviour with nursery school experience. *Human Development*, 15: 359-372.
 7. McGrew, W.C. & Tutin, C.E.G. Chimpanzee dentistry. *Journal of the American Dental Association*, 85: 1198-1204.
 8. 1973 McGrew, W.C. & Tutin, C.E.G. Chimpanzee tool use in dental grooming. *Nature*, 241: 477-478.
 9. Tutin, C.E.G. & McGrew, W.C. Chimpanzee copulatory behaviour. *Folia Primatologica*, 19: 237-256.
 10. Tutin, C.E.G. & McGrew, W.C. Sexual behavior of group-living adolescent chimpanzees. *American Journal of Physical Anthropology*, 38: 195-200.
 11. McGrew, W.C. & McGrew, P.L. McGrew-McGrew system.
In: *Measures of Maturation: An Anthology of Early Childhood Observation Instruments, Volume 2*, Boyer, E., Simon, A. & Karaffin, G. (eds.), Philadelphia: Research for Better Schools, Inc., pp. 1313-1365.
 12. 1974 McGrew, W.C. Interpersonal spacing of preschool children.
In: *The Growth of Competence*, Connolly, K.J. & Bruner, J.S. (eds.),
London: Academic Press, pp. 265-281.
 13. McGrew, W.C. Tool use by wild chimpanzees in feeding upon driver ants. *Journal of Human Evolution*, 3: 501-508.
 14. 1975 McGrew, W.C. Patterns of plant food sharing in wild chimpanzees.
In: *Contemporary Primatology*, Kondo, S. & Ehara, A. (eds.),
Basel: S. Karger, pp. 304-309.
 15. McGrew, W.C. & McGrew, P.L. Interpersonal spacing behavior of preschool children during group formation. *Man-Environment Systems*, 5: 43-48.
 16. McGrew, W.C., Tutin, C.E.G. & Midgett, P.S. Tool use in a group of captive chimpanzees. I: Escape. *Zeitschrift für Tierpsychologie*, 37: 146-162.
 17. 1976 File, S.K., McGrew, W.C. & Tutin, C.E.G. The intestinal parasites of a community of feral chimpanzees, *Pan troglodytes schweinfurthii*. *Journal of Parasitology*, 62: 259-261.
 18. 1977 McGrew, W.C. Socialization and object manipulation of wild chimpanzees.
In: *Primate Bio-Social Development*, Chevalier-Skolnikoff, S. & Poirier, F.E. (eds.),
New York: Garland, pp. 261-288.
 19. 1978 McGrew, W.C. & Tutin, C.E.G. Evidence for a social custom in wild chimpanzees? *Man*, 13: 234-251.
 20. McGrew, W.C., Tutin, C.E.G., Baldwin, P.J., Sharman, M.J., & Whiten, A.
Primates preying upon vertebrates: New records from West Africa (*Pan troglodytes verus*, *Papio papio*, *Cercopithecus sabaues*). *Carnivore*, 1: 41-45.
 21. 1979 McGrew, W.C. Evolutionary implications of sex differences in chimpanzee predation and tool use.
In: *The Great Apes*, Hamburg, D.A. & McCown, E.R. (eds.), Menlo Park: Benjamin/Staples, pp. 441-463.
 22. McGrew, W.C., Tutin, C.E.G., Baldwin, P.J. New data on meat-eating by wild chimpanzees. *Current Anthropology*, 20: 238-239.
 23. McGrew, W.C., Tutin, C.E.G., Baldwin, P.J. Chimpanzees, tools and termites: Cross-cultural comparisons of Senegal, Tanzania and Rio Muni. *Man*, 14: 185-214.
 24. 1980 Rushton, E. & McGrew, W.C. Breech birth of a chimpanzee (*Pan troglodytes*).

- Journal of Medical Primatology*, 9: 389-393.
25. Graham, C.A. & McGrew, W.C. Menstrual synchrony in female under-graduates living on a coeducational campus. *Psychoneuroendocrinology*, 5: 245-252.
 26. 1981 McGrew, W.C. The female chimpanzee as an evolutionary prototype.
In: *Woman the Gatherer*, Dahlberg, F. (ed.),
New Haven: Yale University Press, pp. 35-73.
 27. McGrew, W.C., Baldwin, P.J. & Tutin, C.E.G. Chimpanzees in a hot, dry and open habitat: Mt. Assirik, Senegal, West Africa. *Journal of Human Evolution*, 10: 227-244.
 28. McGrew, W.C. Social and cognitive capabilities of non-human primates: Lessons from the field to captivity. *International Journal for the Study of Animal Problems*, 2: 138-149.
 29. Tutin, C.E.G., McGrew, W.C. & Baldwin, P.J. Responses of wild chimpanzees to potential predators.
In: *Primate Behavior and Sociobiology*, Chiarelli, A.B. & Corruccini, R.S. (eds.),
Heidelberg: Springer-Verlag, pp. 136-141.
 30. Baldwin, P.J., Sabater Pi, J., McGrew, W.C. & Tutin, C.E.G. Comparison of nests made by different populations of chimpanzees (*Pan troglodytes*). *Primates*, 22: 474-486.
 31. 1982 McGrew, W.C., Baldwin, P.J. & Tutin, C.E.G. Observations preliminaires sur les chimpanzes (*Pan troglodytes verus*) du Park National du Niolola-Koba.
Memoires de l'Institut Fondamental d'Afrique Noire, 92: 333-340.
 32. Baldwin, P.J., McGrew, W.C. & Tutin, C.E.G. Wide ranging chimpanzees at Mt. Assirik, Senegal. *International Journal of Primatology*, 3: 367-383.
 33. McBeath, N.M. & McGrew, W.C. Tools used by wild chimpanzees to obtain termites at Mt. Assirik, Senegal: The influence of habitat. *Journal of Human Evolution*, 11: 65-72.
 34. Spencer, F., Boaz, N.T., Allen, M. & McGrew, W.C. Biochemical detection of fecal hematin as a test for meat-eating in chimpanzees (*Pan troglodytes*). *American Journal of Primatology*, 3: 327-332.
 35. McGrew, W.C. Recent advances in the study of tool use by non-human primates.
In: *Advanced Views in Primate Biology*, Chiarelli, A.B. & Corruccini, R.S. (eds.),
Heidelberg: Springer-Verlag, pp. 177-183.
 36. McGrew, W.C., Sharman, M.J., Baldwin, P.J. & Tutin, C.E.G. On early hominid plant-food niches. *Current Anthropology*, 23: 213-214.
 37. 1983 McGrew, W.C. Animal foods in the diets of wild chimpanzees: Why cross-cultural variation? *Journal of Ethology*, 1: 46-61.
 38. Tutin, C.E.G., McGrew, W.C. & Baldwin, P.J. Social organization of savanna-dwelling chimpanzees, *Pan troglodytes verus*, at Mt. Assirik, Senegal. *Primates*, 24: 154-173.
 39. McGrew, W.C. & Rogers, M.E. Chimpanzees, tools and termites: New records from Gabon. *American Journal of Primatology*, 5: 171-174.
 40. 1984 Anderson, J.R. & McGrew, W.C. Guinea baboons (*Papio papio*) at a sleeping site.
American Journal of Primatology, 6: 1-14.
 41. McGrew, W.C. & Phtiaka, H. A simple and direct method of assessing social dominance in young children. *Human Ethology Newsletter*, 4 (2): 2-4.
 42. McGrew, W.C. & McLuckie, E.C. Do monkeys prefer to give birth at week-ends?
Laboratory Primate Newsletter, 23 (4): 1-4.
 43. 1985 MacKenzie, M.M., McGrew, W.C. & Chamove, A.S. Social preferences in stump-tailed macaques (*Macaca arctoides*): Effects of kinship, rearing and companionship.
Developmental Psychobiology, 18: 115-123.
 44. McGrew, W.C. & Collins, D.A. Tool-use by wild chimpanzees (*Pan troglodytes*) to obtain

- termites (*Macrotermes herus*) in the Mahale Mountains, Tanzania. *American Journal of Primatology*, 9: 47-62.
45. Collins, D.A. & McGrew, W.C. Chimpanzees' (*Pan troglodytes*) choice of prey among termites (Macrotermitinae) in western Tanzania. *Primates*, 26: 375-389.
 46. McGrew, W.C. The chimpanzee and the oil palm: Patterns of culture? *Social Biology and Human Affairs*, 50: 31-46.
 47. 1986 McGrew, W.C. & McLuckie, E.C. Philopatry and dispersion in the cotton-top tamarin, *Saguinus (o.) oedipus*: An attempted laboratory simulation. *International Journal of Primatology*, 7: 399-420.
 48. McGrew, W.C., Brennan, J. & Russell, J. An artificial "gum-tree" for marmosets (*Callithrix j. jacchus*). *Zoo Biology*, 5: 45-50.
 49. 1987 Hannah, A.C. & McGrew, W.C. Chimpanzees using stones to crack open palm nuts in Liberia. *Primates*, 28: 31-46.
 50. McGrew, W.C. Tools to get food: The subsistants of Tasmanian aborigines and Tanzanian chimpanzees compared. *Journal of Anthropological Research*, 43: 247-258.
 51. McGrew, W.C. Helpers at the nest-box, or, Are cotton-top tamarins really Florida scrub jays? *Primate Report*, 18: 21-26.
 52. Collins, D.A. & McGrew, W.C. Termite fauna related to differences in tool-use between groups of chimpanzees (*Pan troglodytes*). *Primates*, 28: 457-471.
 53. 1988 McGrew, W.C. Parental division of infant caretaking varies with family composition in cotton-top tamarins. *Animal Behaviour*, 36: 285-286.
 54. Collins, D.A. & McGrew, W.C. Habitats of three groups of chimpanzees (*Pan troglodytes*) in western Tanzania compared. *Journal of Human Evolution*, 17: 553-574.
 55. McGrew, W.C., Baldwin, P.J. & Tutin, C.E.G. Diet of wild chimpanzees (*Pan troglodytes verus*) at Mt. Assirik, Senegal: I. Composition. *American Journal of Primatology*, 16: 213-226.
 56. Ron, T. & McGrew, W.C. Ecological assessment for a chimpanzee rehabilitation project in northern Zambia. *Primate Conservation*, 9: 37-41.
 57. 1989 McGrew, W.C. Why is ape tool-use so confusing?
In: *Comparative Socioecology. The Behavioural Ecology of Humans and Other Mammals*, Standen, V. & Foley, R.A. (eds.) Oxford: Blackwell, pp. 457-472.
 58. McGrew, W.C., Tutin, C.E.G., Collins, D.A. & File, S.K. Intestinal parasites of sympatric *Pan troglodytes* and *Papio* spp. at two sites: Gombe (Tanzania) and Mt. Assirik (Senegal). *American Journal of Primatology*, 17: 147-155.
 59. McGrew, W.C., Tutin, C.E.G. & File, S.K. Intestinal parasites of two species of free-living monkeys in far western Africa, *Cercopithecus (aethiops) sabaeus* and *Erythrocebus patas patas*. *African Journal of Ecology*, 27: 261-262.
 60. Halloren, E., Price, E.C. & McGrew, W.C. Technique for non-invasive marking of infant primates. *Laboratory Primate Newsletter*, 28(3): 13-15.
 61. Feistner, A.T.C. & McGrew, W.C. Food-sharing in non-human primates: A critical review. In: *Perspectives in Primate Biology, Volume 3*, Seth, P.K. & Seth, S. (eds.), New Delhi: Today and Tomorrow's Press, pp. 21-36.
 62. McGrew, W.C. Recent research on chimpanzees in West Africa.
In: *Understanding Chimpanzees*, Heltne, P.G. & Marquardt, L.A. (eds.), Cambridge, Mass.: Harvard University Press, pp. 128-132.
 63. Wynn, T.G. & McGrew, W.C. An ape's view of the Oldowan. *Man*, 24: 383-398.
 64. 1990 Brewer, S.M. & McGrew, W.C. Chimpanzee use of a tool-set to get honey. *Folia Primatologica*, 54: 100-104.

65. Price, E.C. & McGrew, W.C. Cotton-top tamarins (*Saguinus (o.) oedipus*) in a semi-naturalistic captive colony. *American Journal of Primatology*, 20: 1-12.
66. 1991 Hannah, A.C. & McGrew, W.C. Rehabilitation of captive chimpanzees.
In: *Primate Responses to Environmental Change*, Box H.O. (ed.),
London: Chapman and Hall, pp. 167-186.
67. McGrew, W.C. Chimpanzee material culture: What are its limits and why?
In: *The Origins of Human Behaviour*, Foley, R.A. (ed.), London: Unwin Hyman,
pp. 13-24.
68. Moore, K., Cleland, J. & McGrew, W.C. Visual encounters between families of cotton-top tamarins, *Saguinus oedipus*. *Primates*, 32: 23-33.
69. Price, E.C. & McGrew, W.C. Departures from monogamy: Survey and synthesis from colonies of cotton-top tamarins. *Folia Primatologica*, 57: 16-27.
70. Tutin, C.E.G., Fernandez, M., Rogers, M.E., Williamson, E.A. & McGrew, W.C. Foraging profiles of sympatric lowland gorillas and chimpanzees in the Lope Reserve, Gabon. *Philosophical Transactions of the Royal Society, B*, 334: 179-187.
71. Marchant, L.F. & McGrew, W.C. Laterality of function in apes: A meta-analysis of methods. *Journal of Human Evolution*, 21: 425-438.
72. 1992 McGrew, W.C. & Marchant, L.F. Chimpanzees, tools and termites: Hand preference or handedness? *Current Anthropology*, 33: 114-119.
73. Graham, C.A. & McGrew, W.C. Social aspects of menstrual synchrony in a population of nurses. In: *Menstrual Health in Women's Lives*, Dan, A.J. & Lewis, L.L. (eds.), Urbana: University of Illinois Press, pp. 246-253.
74. McGrew, W.C. & Feistner, A.T.C. Two nonhuman primate models for the evolution of human food-sharing: Chimpanzees and callitrichids.
In: *The Adapted Mind*, Barkow, J.H., Cosmides, L. & Tooby, J. (eds.), Oxford: Oxford University Press, pp. 229-243.
75. McGrew, W.C. Tool-use by free-ranging chimpanzees: The extent of diversity. *Journal of Zoology*, 226: 689-694.
76. McGrew, W.C. & Webster, J. Why not bigamy?
In: *Topics in Primatology. Vol. 1. Human Origins*, Nishida, T., McGrew, W.C., Marler, P., Pickford, M. & de Waal, F.B.M. (eds.), Tokyo: Tokyo University Press, pp. 3-7.
77. 1993 McGrew, W.C. Brains, hands, and minds: Puzzling incongruities in ape tool use.
In: *The Use of Tools by Human and Non-human Primates*, Berthelet, A. & Chevaillon, J. (eds.), Oxford: Oxford University Press, pp. 143-153.
78. McGrew, W.C. The intelligent use of tools: Twenty propositions.
In: *Tools, Language and Cognition in Human Evolution*, Gibson, K.R. & Ingold, T. (eds.), Cambridge: Cambridge University Press, pp. 151-170.
79. McGrew, W.C. & Marchant, L.F. Are gorillas right-handed or not?
Human Evolution, 8: 17-23.
80. 1994 Diamond, A.C. & McGrew, W.C. True handedness in the cotton-top tamarin (*Saguinus oedipus*)? *Primates*, 35: 69-77.
81. Greenlees, I.A. & McGrew, W.C. Sex and age differences in preferences and tactics of mate attraction: An analysis of published advertisements. *Ethology and Sociobiology*, 15: 59-72.
82. McGrew, W.C. Cultural implications of differences among populations of free-ranging chimpanzees in Africa.
In: *The Ethological Roots of Culture*, Gardner, R.A., Chiarelli, A.B., Gardner, B.T. & Plooi, F.X. (eds.), Kluwer Academic Publishers, pp. 61-79.

83. Marchant, L.F. & McGrew, W.C. An ethological perspective on human handedness.
In: *The Ethological Roots of Culture*, Gardner, R.A. et al. (eds.), Kluwer Academic Publishers, pp. 375-384.
84. McGrew, W.C. Tools compared: The materials of culture.
In: *Chimpanzee Cultures*, Wrangham, R., McGrew, W.C., de Waal, F. & Heltne, P.G. (eds.), Cambridge, Mass.: Harvard University Press, pp. 25-39.
85. Wrangham, R.W., de Waal, F.B.M., & McGrew, W.C. The challenge of behavioral diversity.
In: *Chimpanzee Cultures*, Wrangham, R., McGrew, W.C., de Waal, F. & Heltne, P.G. (eds.), Cambridge, Mass.: Harvard University Press, pp. 1-18.
86. McGrew, W.C. Overview—diversity in social relations.
In: *Chimpanzee Cultures*, Wrangham, R., McGrew, W.C., de Waal, F. & Heltne, P.G. (eds.), Cambridge, Mass.: Harvard University Press, pp. 151-154.
87. McGrew, W.C. & Marchant, L.F. Primate ethology: A perspective on human and nonhuman handedness.
In: *Handbook of Psychological Anthropology*, Bock, P.K. (ed.), Westport, CT: Greenwood Press, pp. 171-184.
88. 1995 McClain, A.M. & McGrew, W.C. Jane Goodall and the chimpanzees of Gombe: An analysis of publications and their impact on teaching science. *Human Evolution*, 10: 177-184.
89. McGrew, W.C. & Webster, J. Birth seasonality in cotton-top tamarins (*Saguinus oedipus*) despite constant food supply and body weight. *Primates*, 36: 241-248.
90. Marchant, L.F., McGrew, W.C. & Eibl-Eibesfeldt, I. Is human handedness universal? Ethological analyses from three traditional cultures. *Ethology*, 101: 239-258.
91. 1996 McGrew, W.C. Dominance status, food sharing, and reproductive success in chimpanzees.
In: *Food and the Status Quest*, Wiessner, P. & Schiefelhövel, W. (eds.), Oxford: Berghahn, pp. 39-45.
92. Marchant, L.F. & McGrew, W.C. Laterality of limb function in wild chimpanzees of Gombe Stream National Park: Comprehensive study of spontaneous activities. *Journal of Human Evolution*, 30: 427-443.
93. McGrew, W.C. & Marchant, L.F. On which side of the apes? Ethological study of laterality in hand-use.
In: *Great Ape Societies*, McGrew, W.C., Marchant, L.F. & Nishida, T. (eds.), Cambridge: Cambridge University Press, pp. 255-272.
94. 1997 McGrew, W.C. Sex differences in the family life of cotton-top tamarins: Socio-ecological validity in the laboratory?
In: *New World Primates: Ecology, Evolution and Behavior*, Kinzey, W.G. (ed.), New York: Aldine de Gruyter, pp. 95-107.
95. McGrew, W.C., Ham, R.M., White, L.T.J., Tutin, C.E.G. & Fernandez, M. Why don't chimpanzees in Gabon crack nuts? *International Journal of Primatology*, 18: 353-374.
96. McGrew, W.C. & Marchant, L.F. Using the tools at hand: Manual laterality and elementary technology in *Cebus* spp. and *Pan* spp. *International Journal of Primatology*, 18: 787-810.
97. Visalberghi, E. & McGrew, W.C. *Cebus* meets *Pan*. *International Journal of Primatology*, 18: 677-681.
98. Mittra, E.S., Fuentes, A. & McGrew, W.C. Lack of hand preference in wild Hanuman langurs (*Presbytis entellus*). *American Journal of Physical Anthropology*, 103: 455-461.

99. McGrew, W.C. & Marchant, L.F. On the other hand: Current issues in and meta-analysis of the behavioral laterality of hand function in nonhuman primates. *Yearbook of Physical Anthropology*, 40: 201-232.
100. 1998 McGrew, W.C. Culture in nonhuman primates? *Annual Review of Anthropology*, 27: 301-328.
101. Fruth, B. & McGrew, W.C. Resting and nesting in primates: Behavioral ecology of inactivity. *American Journal of Primatology*, 46: 3-5.
102. McGrew, W.C. & Marchant, L.F. Chimpanzee wears a knotted skin "necklace". *Pan Africa News*, 5: 8-9.
103. Hemphill, J. & McGrew, W.C. Environmental enrichment thwarted: Food accessibility and activity levels in captive western lowland gorillas (*Gorilla gorilla gorilla*). *Der Zoologische Garten*, 68: 381-394.
104. Rigamonti, M.M., Prato Previde, E., Poli, M.D., Marchant, L.F., & McGrew, W.C. Methodology of motor skill and laterality: New test of hand preference in *Macaca nemestrina*. *Cortex*, 34: 693-705.
105. McGrew, W.C. Behavioral diversity in populations of free-ranging chimpanzees in Africa: Is it culture? *Human Evolution*, 13: 209-220.
106. Marchant, L.F. & McGrew, W.C. Human handedness: An ethological perspective. *Human Evolution*, 13: 221-228.
107. 1999 McGrew, W.C., Marchant, L.F., Wrangham, R.W. & Klein, H. Manual laterality in anvil use: Wild chimpanzees cracking *Strychnos* fruits. *Laterality*, 4: 79-87.
108. Fruth, B., Hohmann, G. & McGrew, W.C. The *Pan* species.
In: *The Nonhuman Primates*, Dolhinow, P. & Fuentes, A. (eds.). Mayfield, pp. 64-72.
109. McGrew, W.C. & Marchant, L.F. Laterality of hand use pays off in foraging success for wild chimpanzees. *Primates*, 40: 509-513.
110. Whiten, A., Goodall, J., McGrew, W.C., Nishida, T., Reynolds, V., Sugiyama, Y., Tutin, C.E.G., Wrangham, R.W. & Boesch, C. Cultures in chimpanzees. *Nature*, 399: 682-685.
111. Marchant, L.F. & McGrew, W.C. Innovative behavior at Mahale: New data on nasal probe and nipple press. *Pan Africa News*, 6: 16-18.
112. Nishida, T., Kano, T., Goodall, J., McGrew, W.C. & Nakamura, M. Ethogram and ethnography of Mahale chimpanzees. *Anthropological Science*, 107: 141-168.
113. 2000 Nakamura, M., McGrew, W.C., Marchant, L.F. & Nishida, T. Social scratch: Another custom in wild chimpanzees? *Primates*, 41: 237-248.
114. O'Malley, R.C. & McGrew, W.C. Oral tool use by captive orangutans (*Pongo pygmaeus*). *Folia Primatologica*, 71: 334-341.
115. Marchant, L.F., Ensminger, A., Pruett, J.D. & McGrew, W.C. Highly successful non-invasive collection of DNA from wild chimpanzees. *Pan Africa News*, 7(2): 20-21.
116. Weghorst, J.A. & McGrew, W.C. Up where they belong? Habitat use and activity budget in two captive groups of western lowland gorilla (*Gorilla gorilla gorilla*). *Der Zoologische Garten*, 70: 273-284.
117. 2001 McGrew, W.C. The other faunivory: Primate insectivory and early human diet.
In: *Meat-Eating and Human Evolution*, Stanford, C.B. & Bunn, H.T. (eds.), Oxford: Oxford University Press, pp. 160-178.
118. McGrew, W.C., Marchant, L.F., Scott, S.E. & Tutin, C.E.G. Intergroup differences in a social custom of wild chimpanzees: The grooming hand-clasp of the Mahale Mountains, Tanzania. *Current Anthropology*, 42:148-153.
119. McGrew, W.C. The nature of culture, or, the prospects and pitfalls of cultural primatology.

- In: *Tree of Origin*, de Waal, F.B.M. (ed.), Cambridge, MA: Harvard University Press, pp. 231-254.
120. McGrew, W.C. & Marchant, L.F. Ethological study of manual laterality in the chimpanzees of the Mahale Mountains, Tanzania. *Behaviour*, 138: 329-358.
 121. Videan, E.N. & McGrew, W.C. Are bonobos (*Pan paniscus*) really more bipedal than chimpanzees (*Pan troglodytes*)? *American Journal of Primatology*, 54: 233-239.
 122. Pruetz, J.D.E. & McGrew, W.C. What does a chimpanzee need? Using natural behavior to guide the care of captive populations.
In: *The Care and Management of Captive Chimpanzees*, Brent, L. (ed.) American Society of Primatologists, pp. 16-37.
 123. Whiten, A., Goodall, J., McGrew, W.C., Nishida, T., Reynolds, V., Sugiyama, Y., Tutin, C.E.G., Wrangham, R.W. & Boesch, C. Charting cultural variation in chimpanzees. *Behaviour*, 138: 1481-1516.
 124. McGrew, W.C. & Marchant, L.F. Cultural ethology of non-human primates?
In: *Irenaeus Eibl-Eibesfeldt: Zu Person und Werk*, Sütterlin, C. & Salter, F.K. (eds.). Wien: Peter Lang Verlag, pp. 239-244.
 125. 2002 Videan, E.N. & McGrew, W.C. Body weight and bipedality in captive chimpanzees (*Pan troglodytes*). *Laboratory Primate Newsletter*, 41(2): 1-3.
 126. Videan, E.N. & McGrew, W.C. Bipedality in chimpanzee (*Pan troglodytes*) and bonobo (*Pan troglodytes*): Testing hypotheses on the evolution of bipedality. *American Journal of Physical Anthropology*, 118: 184-190.
 127. Pruetz, J.D., Marchant, L.F., Arno, J. & McGrew, W.C. Survey of savanna chimpanzees (*Pan troglodytes verus*) in southeastern Senegal. *American Journal of Primatology*, 58: 35-43.
 128. Hunt, K.D. & McGrew, W.C. Chimpanzees in the dry habitats at Assirik, Senegal, and at Semliki Wildlife Reserve, Uganda.
In: *Behavioural Diversity in Chimpanzees and Bonobos*, Boesch, C., Hohmann, G. & Marchant, L.F. (eds.) Cambridge: Cambridge University Press, pp. 35-51.
 129. Mbora, D.N.M. & McGrew, W.C. Extra-group sexual consortship in the Tana River red colobus (*Procolobus rufomitratus*)? *Folia Primatologica*, 73: 210-213.
 130. 2003 McGrew, W.C. Ten dispatches from the chimpanzee culture wars.
In: *Animal Social Complexity: Intelligence, Culture, and Individualized Societies*, de Waal, F.B.M. & Tyack, P.L. (eds.), Cambridge, MA: Harvard University Press, pp. 419-439.
 131. McGrew, W.C. Evolution of the cultural mind: Lessons from wild chimpanzees.
In: *The Social Brain: Evolution and Pathology*, Brüne, M., Ribbert, H. & Schiefenhövel, W. (eds.) Wiley, pp. 81-92.
 132. McGrew, W.C., McKee, J.K. & Tutin, C.E.G. Primates in caves: Two new reports of *Papio* spp. *Journal of Human Evolution*, 44: 521-526.
 133. McGrew, W.C., Baldwin, P.J., Marchant, L.F., Pruetz, J.D., Scott, S.E. & Tutin, C.E.G. Ethoarchaeology and elementary technology of unhabituated chimpanzees at Assirik, Senegal, West Africa. *PaleoAnthropology*, 1: 1-20.
 134. 2004 Carter, J., Ndiaye, S., Pruetz, J. & McGrew, W.C. Senegal.
In: *West African Chimpanzees*, Kormos, R., Boesch, C., Bakarr, M.I. & Butynski, T. (eds.), IUCN – The World Conservation Union, pp. 31-39.
 135. McGrew, W.C., Ensminger, A.L., Marchant, L.F., Pruetz, J.D. & Vigilant, L. Genotyping aids field study of unhabituated wild chimpanzees. *American Journal of Primatology*, 63: 87-93.

136. Byrne, R.W., Barnard, P.J., Davidson, I., Janik, V.M., McGrew, W.C., Miklosi, A. & Wiessner, P. Understanding culture across species. *Trends in Cognitive Science*, 8: 341-346.
137. Lodwick, J.L., Borries, C., Pusey, A.E., Goodall, J. & McGrew, W.C. From nest to nest – influence of ecology and reproduction on the active period of adult Gombe chimpanzees. *American Journal of Primatology*, 64: 249-260.
138. Ramsey, J.K. & McGrew, W.C. Object play in great apes: studies in nature and captivity. In: *The Nature of Play: Great Apes and Humans*, Pellegrini, A.D. & Smith, P.K. (eds.), New York: Guilford, pp. 89-112.
139. McGrew, W.C. Primatology: advanced ape technology. *Current Biology*, 14: R1046-1047.
140. 2005 Sarringhaus, L.A., McGrew, W.C., & Marchant, L.F. Misuse of anecdotes in primatology: lessons from citation analysis. *American Journal of Primatology*, 65: 283-288.
141. McGrew, W.C., Pruetz, J.D. & Fulton, S.J. Chimpanzees use tools to harvest social insects at Fongoli, Senegal. *Folia Primatologica*, 76: 222-226.
142. Sarringhaus, L.A., Stock, J.T., Marchant, L.F. & McGrew, W.C. Bilateral asymmetry in the limb bones of the chimpanzee (*Pan troglodytes*). *American Journal of Physical Anthropology*, 128: 840-845.
143. Marchant, L.F. & McGrew, W.C. Percussive technology: chimpanzee baobab smashing and the evolutionary modeling of hominid knapping. In: *Stone Knapping: The Necessary Conditions for a Uniquely Hominid Behaviour*, Roux, V. & Bril, B. (eds.), Cambridge: McDonald Institute Monograph Series, pp. 339-348.
144. Davidson, I. & McGrew, W.C. Stone tools and the uniqueness of human culture. *Journal of the Royal Anthropological Institute*, 11: 793-817.
145. McGrew, W.C. [Behind Lorenz's mirror: the ethology of culture as a bridge to the social sciences.] In: *[What Can We Learn from the Geese?]*, Strungaru, C. & Schubert, R. (eds.), Iasi: Polirom, pp. 81-92. [in Romanian]
146. McGrew, W.C. How the chimpanzee stole culture, or lessons learned from labours in cultural primatology. In: *Learning from Animals?*, Roeska-Hardy, L.S. & Neumann-Held, E. (eds.), Psychology Press, pp. 189-197.
147. 2006 Mitani, J.C., McGrew, W.C. & Wrangham, R.W. Toshisada Nishida's contributions to primatology. *Primates*, 27: 2-5.
148. O'Malley, R.C. & McGrew, W.C. Hand preferences in captive orangutans (*Pongo pygmaeus*). *Primates*, 47:279-283.
149. Fruth, B.I., Hohmann, G., Beuerlein, M.M. & McGrew, W.C. Grooming hand clasp by bonobos of Lui Kotal, Democratic Republic of Congo. *Pan Africa News*, 13(1): 6-8.
150. Brüne, M., Brüne-Cohrs, U., McGrew, W.C., Preuschoft, S. Psycho-pathology in great apes: Concepts, treatment options, and possible homologues to human psychiatric disorders. *Neuroscience and Biobehavioral Reviews*, 30:1246-1259.
151. Bertolani, P., Scholes, C., McGrew, W.C., Pruetz, J.D. Laterality in termite-fishing by Fongoli chimpanzees: Preliminary report. *Pan Africa News*, 14:1-3.
152. 2007 McGrew, W.C., Marchant, L.F. & Hunt, K.D. Ethoarchaeology of manual laterality: well-digging by wild chimpanzees. *Folia Primatologica*, 78:240-244.
153. Marchant, L.F. & McGrew, W.C. Ant fishing by wild chimpanzees is not lateralised. *Primates*, 48: 22-26.

154. Lycett, S.J., Collard, M., McGrew, W.C. Phylogenetic analyses of behavior support existence of culture among wild chimpanzees. *Proceedings of the National Academy of Sciences (USA)*, 104:17588-17592.
155. McGrew, W.C. Mahale and Gombe compared: patterns of research on wild chimpanzees over four decades. *African Study Monographs*, 28:143-153.
156. Horvath, J., Croswell, M., O'Malley, R.C. & McGrew, W.C. Vegetation survey of site for proposed chimpanzee sanctuary, Caddo Parish, Louisiana. *International Journal of Primatology*, 28:135-158.
157. McGrew, W.C., Marchant, L.F. Beuerlein, M.M., Vrancken, D., Fruth, B. & Hohmann, G. Prospects for bonobo insectivory: What's on the menu at Lui Kotal, Democratic Republic of Congo. *International Journal of Primatology*, 28:1237-1252.
158. McGrew, W.C. New wine in new bottles: Prospects and pitfalls of cultural primatology. *Journal of Anthropological Research*, 67: 167-183.
159. 2008 Pruetz, J.D., Fulton, S., Marchant, L.F., McGrew, W.C., Schiel, M. & Waller, M. Arboreal nesting as anti-predator adaptation by savanna chimpanzees (*Pan troglodytes verus*) in southeastern Senegal, West Africa. *American Journal of Primatology*, 70:393-401.
160. Russak, S.M. & McGrew, W.C. Chimpanzees as fauna: comparison of sympatric-large mammals across long-term study sites. *American Journal of Primatology*, 70:402-409.
161. McGrew, W.C. Reflections on progress in cultural primatology. *Bulletin of the Novosibirsk State University, Series of Psychology*, 2 (2): 42-47.
162. Schoening, C., Humle, T., Möbius, Y. & McGrew, W.C. The nature of culture: Technological variation in chimpanzee predation on army ants revisited. *Journal of Human Evolution*, 55:48-59.
163. McGrew, W.C. Revisiting the battlefronts.
In: *The Question of Animal Culture*, Laland, K.N. & Galef, B.G. (eds.), Harvard University Press, pp. 41-69.
164. 2009 Carvalho, S., Biro, D., McGrew, W.C. & Matsuzawa, T. Tool-composite reuse in wild chimpanzees (*Pan troglodytes*): Archaeologically invisible steps in the technological evolution of early hominins? *Animal Cognition*, 12: 103-114.
165. Nishida, T., Matsusuka, T., & McGrew, W.C. Emergence, propagation, or disappearance of novel behavioral patterns in the habituated chimpanzees of Mahale: A review. *Primates*, 50: 23-36.
166. Lycett, S.J., Collard, M. & McGrew, W.C. Cladistic analyses of behavioural variation in wild *Pan troglodytes*: Exploring the chimpanzee culture hypothesis. *Journal of Human Evolution*, 57: 337-349.
167. McGrew, W.C., Marchant, L.F. & Phillips, C.A. Standardised protocol for primate fecal analysis. *Primates*, 50:363-366.
168. Haslam, M. (+17 other authors, including WCM) Primate archaeology. *Nature*: 460: 339-344.
169. 2010 McGrew, W.C. New theaters of conflict in the animal culture wars: Recent findings from chimpanzees.
In: *The Mind of the Chimpanzee*, Lonsdorf, E., Ross, S., & Matsuzawa, T. (eds.), University of Chicago Press, pp 168-177.
170. Koops, K., McGrew, W.C. & Matsuzawa, T. Do chimpanzees (*Pan troglodytes*) use cleavers and anvils to fracture *Treculia africana* fruits? Preliminary data on a new form of percussive technology. *Primates*, 51:175-178.

171. Lycett, S.J., Collard, M. & McGrew, W.C. Are behavioral differences among wild chimpanzee communities genetic or cultural? An assessment using tool-use data and phylogenetic methods. *American Journal of Physical Anthropology*, 142: 461-467.
172. McGrew, W.C. Chimpanzee technology. *Science*, 328:579-580.
173. McGrew, W.C. In search of the last common ancestor: new findings on wild chimpanzees. *Philosophical Transactions of the Royal Society, B*, 365: 3267-3276.
174. 2011 McGrew, W.C. Natural ingestion of ethanol by animals: Why?
In: *Liquid Bread: Beer and Brewing in Crosscultural Perspective*, Schiefenhövel, W. & Macbeth, H. (eds.), Oxford: Berghahn, pp. 13-19.
175. McGrew, W.C. *Pan symbolicus*: A cultural primatologist's viewpoint.
In: *Homo Symbolicus: The Dawn of Language, Imagination, and Spirituality*, Henshilwood, C. and D'Errico, F. (eds.), pp. 1-12.
176. Stewart, F.A., Piel, P.K. & McGrew, W.C. Living archaeology: Artefacts of specific nest-site fidelity in wild chimpanzees. *Journal of Human Evolution*. 61: 388-395.
177. Beuerlein, M.M. & McGrew, W.C. It takes a community to rear a child, or does it? Socialisation in wild chimpanzees. *American Journal of Primatology*, submitted.
178. Wynn, T., Hernandez-Aguilar, A.R., Marchant, L.F. & McGrew, W.C. "An ape's view of the Oldowan" revisited. *Evolutionary Anthropology*, 20: 181-197.
179. McGrew, W.C. & Hunt, K.D. Chimpanzee pith-folding at Toro-Semliki Wildlife Reserve, Uganda. *Pan Africa News*, 18: 15-18.
180. Lycett, S.J., Collard, M. & McGrew, W.C. Correlations between genetic and behavioural dissimilarity in wild chimpanzees do not undermine the case for culture. *Proceedings of the Royal Society B*, 278: 2091-2093.
181. 2012 Carvahlo, S., Biro, D., Cunha, E., Hockings, S., McGrew W.C., Richmond, B.G. and Matsuzawa, T. Chimpanzee carrying behaviour and the origins of human bipedality. *Current Biology*, in press.
182. Koops, K., Knapp, L., McGrew, W.C. and Matsuzawa, T. Terrestrial nest-building by wild chimpanzees (*Pan troglodytes*): implication for the tree-to-ground sleep transition in early hominins. *American Journal of Physical Anthropology*, in press.
183. Koops, K., de Vries, H. & McGrew, W.C. Nest-building by chimpanzees (*Pan troglodytes*) at Seringbara, Nimba Mountains: Anti-predation, thermoregulation, and anti-vector hypotheses. *American Journal of Primatology*, in press.
184. Stanley, G., Dorner, M., Persad-Clem, R., Sarringhaus, L., & McGrew, W.C. Just browsing: Captive chimpanzees respond differently to cut woody vegetation. *Zoo Biology*, submitted.
185. Ebbert, MA, McGrew, W.C. & Marchant, L.F. Baboons and their endoparasites: critical review, methodology, and new data. *American Journal of Physical Anthropology*, submitted.
186. Kocher, A. & McGrew, W.C. Captive chimpanzees are manually ambilateral, regardless of rearing experience. *Journal of Human Evolution*, submitted.
187. Ramsey, J.K. & McGrew, W.C. Do tool users show more object play? Comparisons of chimpanzees and gorillas. *American Journal of Primatology*, submitted.

Notes, Reviews, Comments, Letters, Translations, Popular Articles and Other Trivia

1. 1963 Channel catfish feeding on diamond-backed water snakes. *Copeia*, (1): 178-179.
2. 1971 Aggression und Gruppenbildung im Kindergarten.

- Umschau Wissenschaft und Technik*, 21: 785.
3. 1972 How children react to newcomers. *New Society*, 20(498): 55-57.
 4. 1973 La dentisterie chez le chimpanze.
Le Chirurgien Dentiste de France, 186: 57-61. (with C. Tutin)
 5. 1974 Review of *Culture and Biological Man*, by E.D. Chapple.
Current Anthropology, 15: 58.
 6. 1975 Zahnfursorge bei Schimpansen. *Quintessenz*, 7: 135-138.
 7. 1976 Man as a tool maker meets a rival. *New Society*, 35(700): 549-551.
 8. 1977 *Il Comportamento Infantile. Uno Studio Etologico*.
Milan: Franco Angeli Editore, pp. 1-336.
 9. 1978 What future for the wolf? *Carnivore*, 1: 112-113. (Meeting report)
 10. 1979 Review of *Cannibals and Kings: The Origins of Cultures*, by M. Harris.
Carnivore, 2: 74-75.
 11. Review of *The Man-Eating Myth: Anthropology and Anthropophagy*, by W. Arens.
Carnivore, 2: 76-77.
 12. Habitat and the adaptiveness of primate intelligence. (Comment)
Behavioral and Brain Sciences, 2: 393.
 13. 1980 Gabar goshawk drowns its prey. *Ostrich*, 51: 53.
 14. The proper study of sociobiological mankind is sex. (Comment)
Behavioral and Brain Sciences, 3: 193-194.
 15. Review of *The Ape's Reflexion*, by A. Desmond. *Human Ethology Newsletter*, 28: 13-14.
 16. Review of *Human Behavior and Adaptation*, by V. Reynolds and N. Blurton Jones.
Human Ethology Newsletter, 29: 18-19.
 17. Review of *Animal Tool Behavior*, by B.B. Beck. *International Journal for the Study of Animal Problems*, 1: 400-402.
 18. Review of *Man: The Fallen Ape*, by B. Bokum. *Primate Eye*, 14: 21-22.
 19. Review of *The Evolution of Culture in Animals*, by J. Bonner. *Nature*, 288: 26-27.
 20. 1981 Review of *Social Behavior in Primates*, by N. Chalmers. *Nature*, 289: 710.
 21. Comment on "Variations in subsistence activities of female and male pongids", by B. Galdikas and G. Teleki. *Current Anthropology*, 22: 250.
 22. Anthropoid ape advisory panel. *Primate Eye*, 16: 18-23.
 23. Review of *The Origins and Rise of Ethology*, by W.H. Thorpe. *Human Ethology Newsletter*, 3(2): 22-23.
 24. Review of *The Ecology and Conservation of Large African Mammals*, by K. Eltringham.
 25. Review of *The Ecology of Preschool Behaviour*, by P.K. Smith and K.J. Connolly.
Human Ethology Newsletter, 3(3): 25-28.
 26. Review of *The Natural History of the Gorilla*, A.F. Dixson. *American Journal of Primatology*, 1: 473-475.
 27. 1982 Review of *The Question of Animal Awareness*, by D.R. Griffin, and *Animals are Equal*, by R. Hall. *International Journal for the Study of Animal Problems*, 3: 66-68.
 28. Review of *A World Like Our Own*, by A. Jolly. *Human Ecology*, 10: 268-270.
 29. Review of *Omnivorous Primates*, by R. Harding and G. Teleki. *Primate Eye*, 18: 19-20.
 30. Review of *The Soccer Tribe*, by D. Morris. *Human Ethology Newsletter*, 3(6): 7-9.
 31. 1983 Chimpanzees can be rehabilitated. *Laboratory Primate Newsletter*, 22(2): 2-3.
 32. Review of *Gorilla Behavior*, by T. Maple and M. Hoff. *International Journal for the Study of Animal Problems*, 4: 263-265.
 33. Review of *Chimpanzee Politics*, by F. de Waal. *Human Ethology Newsletter*, 3(10): 13-15.
 34. Comment on "The evolution of the advanced hominid brain", by B. Blumenberg.
Current Anthropology, 24: 606.
 35. Review of *Siblings*, by J. Dunn & C. Kendrick. *Human Ethology Newsletter*, 3(11): 4-5.

36. Comment on "Some new evidence in support of the stabbing hypothesis for *Smilodon californicus*" by G.J. Miller. *Carnivore*, 3(2): 21.
37. A reply to Kortlandt's "Marginal habitats of chimpanzees"
Journal of Human Evolution, 12: 413-414. (with P. Baldwin and C. Tutin)
38. The cultured chimpanzee. In: *Wildlife 1984*, Sitwell, N. (ed.),
London: Nicholas, pp. 16-25.
39. 1984 Review of *Primate Social Relationships*, by R.A. Hinde, and *Primate Behavior*, by
J.L. Fobes and J.E. King. *Nature*, 308: 127-128. (with J.R. Anderson)
40. Comment on "Hominid dietary selection before fire" by A.B. Stahl.
Current Anthropology, 25: 160.
41. Review of *Apetalk and Whalespeak*, by T. Craill. *Primate Eye*, 23: 32-34.
42. Review of *Animal Architecture and Building Behaviour*, by M. Hansell.
Nature, 311: 183.
43. Review of *Instinct, Environment and Behaviour*, by S.E.G. Lea.
Human Ethology Newsletter, 4(3): 4.
44. Catalogue comportmental des expressions faciales. In: *L'Observation*, Michiels-Philippe,
M.P. (ed.), Paris: Delachaux et Niestle, pp. 145-149.
45. 1985 Report on Primate Rehabilitation Symposium. *Primate Eye*, 25: 21.
46. Review of *Primate Behaviour and Social Ecology*, by H. Box. *Animal Behaviour*, 33: 342.
47. Chimpanzee diet - in bad taste? Comment on Rozin and Kennel. *Appetite*, 6: 81-85.
48. Review of *The Chimpanzees of Kibale Forest*, by M. Ghiglieri. *Ethology and Sociobiology*,
6: 133-134.
49. Comment on "Household economics and hominid origins" by D. Quiatt and J. Kelso.
Current Anthropology, 26: 213-214.
50. Review of *The Natural History of the Primates*, by J. Napier and P. Napier, and
Primates in Nature, by A. Richard. *Nature*, 316: 223. (with J.R. Anderson)
51. 1986 Review of *The Behavioral Development of Free-Living Chimpanzee Babies and Infants*, by
F. Plooi. *International Journal of Primatology*, 6: 627-629.
52. Comment on "Parturition in nonhuman primates,"
Pain, 26: 125-127. (with K.J. Gijssbers)
53. Review of *The Innocent Anthropologist*, by N. Barley. *Human Ethology Newsletter*, 4(9): 2.
54. Review of *The Chimpanzees of Gombe*, by J. Goodall. *Nature*, 323: 765.
55. Rejoinder to Ghiglieri. *Ethology and Sociobiology*, 8: 159-161.
56. Chimp liberation. *New Scientist*, 111(1515): 63. (letter)
57. Kinship terms and callitrichid mating patterns: A discussion note.
Primate Eye, 30: 25-26.
58. 1987 Review of *Vaulting Ambition*, by P. Kitcher. *Behavioral and Brain Sciences*, 10: 79.
59. Review of *The Evolution of Human Behavior: Primate Models*, by W. Kinzey.
Animal Behaviour, 35: 1587-1588.
60. 1988 Comment on "Female primate sexual behavior and conception" by M. Small.
Current Anthropology, 29: 90-91.
61. Review of *Great Apes of the World*, by R.H. Tuttle. *Behavioral Processes*, 17: 73-74.
62. Comment on "Tactical deception in primates" by A. Whiten and R. Byrne.
Behavioral and Brain Sciences, 11: 258.
- 62a. Tools compared: The material of culture. *Anthropology Today*, 4: 22-23.
63. 1989 Comment on "Hominid use of fire in the Lower and Middle Pleistocene" by S.R. James.
Current Anthropology, 30: 16-17.
64. What would be an asocial primate group? *Primate Eye*, 37: 17.
65. Review of *Peacemaking among Primates*, by F. de Waal. *Nature*, 340: 195.
66. 1990 Band of brothers? A call for information. *The Chimpanzee Newsletter*, 1: 3.

67. Review of *The Chimpanzees of the Mahale Mountains*, by T. Nishida. *Nature*, 346: 711.
68. Review of *Through a Window*, by J. Goodall. *Nature*, 348: 371-372.
69. 1991 Review of *Human Ethology*, by I. Eibl-Eibesfeldt. *Journal of Human Evolution*, 21: 77-78.
70. Review of *How Monkeys See the World*, by D. Cheney and R. Seyfarth. *Nature*, 350: 565.
71. Comment on "Intergroup aggression in chimpanzees and humans" by J. Manson and R. Wrangham. *Current Anthropology*, 32: 380-381. (with L.F. Marchant)
72. Comment on "Biology and behaviour in human evolution" by P. Lee. *Cambridge Archaeological Journal*, 1: 221-222. (with T.G. Wynn)
73. Review of *The Egalitarians-Human and Chimpanzee*, by M. Power. *Nature*, 354: 324.
74. 1992 Comment on "Was there no place like home?" by J. Sept. *Current Anthropology*, 33: 197-198.
75. 1993 Review of *Edible Wild Plants of Sub-Saharan Africa* by C. Peters et al. *Primate Eye*, 50: 30-31.
76. Review of *Primate Behaviour*, by D. Quiatt and V. Reynolds. *Nature*, 365: 794.
77. Review of *Hands*, by J.R. Napier. *Human Ethology Newsletter*, 8(2): 10-11.
78. 1994 Comment on "Technology and society during the Middle Pleistocene" by S. Mithen. *Cambridge Archaeological Journal*, 4:21.
79. Review of *The Third Chimpanzee*, by J. Diamond. *Quarterly Review of Biology*, 69: 431-432.
80. 1995 Review of *The Great Ape Project*, by P. Cavalieri and P. Singer. *American Journal of Primatology*, 35:83-85.
81. Review of *The Left-Handed Syndrome*, by S. Coren. *Human Ethology Bulletin*, 10(1): 8-9.
82. Review of *Visions of Caliban*, by D. Peterson and J. Goodall. *International Journal of Primatology*, 16: 157-159.
83. Thumbs, tools, and early humans. *Science*, 268: 586. (Technical comment.)
84. Review of *Reflections of Eden*, by B. Galdikas. *Nature*, 374: 832-833.
85. Review of *Hominid Culture in Primate Perspective*, by D. Quiatt and J. Itani. *Cambridge Archaeological Review*, 5: 159-160.
86. Review of *The Chosen Primate*, by A. Kuper. *Primate Eye*, 56: 25-27.
87. Review of *Kanzi* by S. Savage-Rumbaugh and R. Lewin. *Human Ethology Bulletin*, 10(4): 14-15.
88. Review of *Chimpanzee Travels*, by Dale Peterson. *Primate Eye*, 57: 43-44.
89. 1996 Comment on "Meat eating, hominid sociality, and home bases revisited," by L. Rose and F. Marshall. *Current Anthropology*, 37: 324-325. (with B. Fruth)
90. Review of *In Quest of the Sacred Baboon*, by H. Kummer. *Nature*, 410: 379.
91. Review of *Good Natured*, by F. de Waal. *Scientific American*, 275(3): 176-177.
92. [Chimpanzee Material Culture: Implications for Human Evolution] Japanese translation, English Agency Ltd, Tokyo, pp. 1-410.
93. Review of *Dead Men Do Tell Tales*, by W. Maples. *American Journal of Physical Anthropology*, 101: 446-447.
94. 1997 Review of *Living with Chimpanzees*, by F. Fontes. (Video) *American Journal of Primatology*, 41: 261-262.
95. Review of *When Elephants Weep*, by J. Masson and S. McCarthy. *Human Ethology Bulletin*, 12: 14-15.
96. Review of *Bonobo: The Forgotten Ape*, by F. de Waal and F. Lanting. *Nature*, 387: 142-143.
97. Review of *Culture of Honor*, by R. Nisbett and D. Cohen. *Human Ethology Bulletin*, 12, 10-11.
98. 1998 Review of *Reaching into Thought: The Minds of Great Apes*, by Russon, A. et al. *Primate Eye*, 64: 28-30.

99. Review of *Social Learning in Animals*, by C. Heyes and B. Galef. *Journal of Anthropological Research*, 54: 97-99.
100. Review of *I've Been Gone Far Too Long*, by M. Mulder and W. Logsdon. *Primate Eye*, 65: 33-34.
101. Review of *Next of Kin*, by R. Fouts. *Human Ethology Bulletin*, 13(2): 14-16.
102. Comment on "The social behavior of chimpanzees and bonobos," by C. Stanford. *Current Anthropology*, 39, 411.
103. Comment on "Chimpanzee and human cultures," by C. Boesch and M. Tomasello. *Current Anthropology*, 39, 607-608.
104. 1999 Review of *The Hunting Apes*, by C. Stanford. *Primate Eye*, 68: 38-40.
105. Comment on "Cooking and the ecology of human origins," by R. Wrangham *et al.* *Current Anthropology*, 40: 582-583.
106. Review of *Machiavellian Intelligence II*, by A. Whiten and R.W. Byrne. *Journal of the Royal Anthropological Institute*, 5: 304.
107. Review of *Reclaiming a Scientific Anthropology*, by L. Kuznar. *Human Ethology Bulletin*, 14(3): 15-16.
108. Obituary for Pamela Jane Baldwin. *International Primatological Society Bulletin*, 26(2): 3.
109. Review of *Chimpanzee and Red Colobus*, by C. Stanford. *American Zoologist* 39: 928.
110. 2000 Review of *Human Nature*, by L. Betzig. *Journal of Human Evolution*, 38: 454-455.
112. Introducing Jane Goodall. *Kirilandia*, 51: 101-102.
113. Dental care in chimps. *Science*, 288: 1747. (Letter)
114. Review of *That Complex Whole*, by L. Cronk. *Human Ethology Bulletin*, 15(4): 16-17.
115. 2001 Whiten, A. & McGrew, W.C. Is this the first portrayal of tool use by a chimp? *Nature*, 409:12. (Letter)
116. Review of *The Cannibal Within*, by L. Petrionovich. *Human Ethology Bulletin*, 16(1): 14-15.
117. Review of *Primate Behavioral Ecology*, by K. Strier. *American Anthropologist*, 103: 240-241.
118. Review of *The Anthropology of Cannibalism*, by L. Goldman. *Politics & Life Sciences*, 19: 116-117.
119. Tool evolution. *McGraw-Hill Yearbook of Science & Technology*, pp. 379-381.
120. Review of *The Sacred Monkeys of Bali*, by B. Wheatley. *Primate Eye*, 73: 47-49.
121. Review of *Genes, Peoples, and Languages*, by L. Cavalli-Sforza. *Human Ethology Bulletin*, 16(3): 4-5.
122. Review of *Walker's Primates of the World*, by R. Nowak. *Primate Eye*, 74: 48-50.
123. Review of *The Ape and the Sushi Master*, by F. deWaal. *American Scientist*, 89: 264-265.
124. Review of *Chimpanzees. Social Climbers of the Forest*, by T. Constable. *Primates*, 42: 407.
125. Review of *Significant Others*, by C. Stanford. *Primate Eye*, 75: 57-58.
126. Review of *Perspectives in Ethology 13*, by F. Tonneau and N. Thompson (eds.). *Animal Behaviour*, 62: 609-610.
127. Obituary for Denise Vasseur. *Primate Eye*, 73: 25.
128. Whiten, A. & McGrew, W.C. Piecing together the history of our knowledge of chimpanzee tool use. *Nature*, 411: 413. (Letter)
129. Review of *The Chimpanzees of the Tai Forest*, by C. Boesch, and H. Boesch-Achermann. *Journal of Human Evolution*. 41: 531-533.
130. 2002 Review of *The Biological Bases of Human Behavior*, by G. Pope. *Primate Eye*, 76: 30-31.
131. Review of *Ancient Encounters*, by J.C. Chatters. *Human Ethology Bulletin*, 17(3): 11-14.
132. Review of *Myth and Reality in the Rain Forest*, by J. Oates. *Primate Eye*, 78: 34-35.
133. Review of *Skull Wars*, by D. Thomas. *Homo*, 52: 283.
134. 2003 Review of *Defenders of the Truth: The Battle for Science in the Sociobiology Debate and Beyond*, by U. Segerstrale. *Human Ethology Bulletin*, 18(2): 3-4
135. Review of *Hierarchy in the Forest. The Evolution of Egalitarian Behavior*, by C. Boehm.

- Primate Eye*, 79: 29-31.
136. Review of *Second Nature. Economic Origins of Human Evolution*, by H. Ofek. *PaleoAnthropology*, 1: 21-22.
 137. Review of *The Meme Machine*, by S. Blackmore. *PaleoAnthropology*, 1: 23-24.
 138. Comment on "Social conventions in wild white-faced capuchin monkeys," by S. Perry *et al.* *Current Anthropology*, 44: 259
 139. Review of *On the Trail of Monkeys and Apes*, by L. Farris-Toussaint and B. de Wetter. *Folia Primatologica*, 72: 113-114
 140. Review of *A Fly for the Prosecution*, by M. Goff. *Homo*, 53: 298
 141. Review of *Mahale: A Photographic Encounter with Chimpanzees*, by A. Hofer *et al.* *Folia Primatologica*, 74: 112-113.
 142. Review of *The Octopus and the Orangutan*, by E. Linden. *Primate Eye*, 81: 24-25.
 143. 2004 Review of *Animal Innovation*, by S. Reader and K. Laland. *Nature*, 427: 679..
 144. Review of *The Biology of Traditions*, by D. Frigaszy and S. Perry. *Quarterly Review of Biology*, 70: 226-227.
 145. Psychiatric treatment needed for great apes? *Science*, 306: 2039. (with M. Brüne & U. Brüne-Cohrs)
 146. Obituary for Goblin (chimpanzee). *Primate Eye*, 84: 33-34. (with M. Beuerlein)
 147. Comment on: "The invention of technology: prehistory and cognition," by S.A. de Beaune. *Current Anthropology*, 45: 153-154.
 148. Review of *A Devil's Chaplain*, by R. Dawkins. *Human Ethology Bulletin*, 19(2): 13-14.
 149. Review of *Nature via Nurture*, by M. Ridley. *Human Ethology Bulletin*, 19(3): 3-4.
 150. Review of *Primate Behavioral Ecology*, 2nd edit., by K. Strier. *Primate Eye*, 84: 40-41.
 151. 2005 Review of *Right Hand, Left Hand*, by C. McManus. *American Journal of Human Biology*, 17: 121-122.
 152. Review of *The Evolution of Thought*, by A. Russon and D. Begun. *Ethology*, 111: 239-240.
 153. Review of *Niko's Nature*, by H. Kruuk. *Human Ethology Bulletin*, 20: 4-6.
 154. Review of *In My Family Tree. A Life with Chimpanzees*, by S. Siddle. *Primate Eye*, 85: 28-30.
 155. Review of *Kinship with Monkeys*, by L. Cormier. *Human Ecology*, 33: 895-897.
 156. 2006 Review of *From Mukogodo to Maasai: Ethnicity and Cultural Change in Kenya*, by L. Cronk. *Human Ethology Bulletin*, 20(3): 4-6.
 157. Review of *Stiff*, by M. Roach. *Homo*, 57:101-102.
 158. Obituary for Professor Shigeo Uehara. *Primate Eye*, 85: 16-17. (with M.M. Beuerlein)
 159. Primates and the origins of culture, in *Encyclopedia of Life Sciences*, Macmillan, pp. 1-6.
 160. Animal tools, in *Encyclopedia of Science, Technology, and Ethics*, Macmillan, accepted.
 161. Review of *Among Orangutans*, by C. van Schaik. *Primate Eye*, 87: 39-41.
 162. Review of *My Family Album*, by F. de Waal. *American Journal of Physical Anthropology*, 130: 273.
 163. Evolution, culture and human uniqueness. In: *Encyclopedia of Mammals*, by D.M. MacDonald (ed.), in press. (with R.A. Foley)
 164. Review of *Not by Genes Alone*, by P. Richerson and R. Boyd. *Journal of Human Evolution*, 50: 237.
 165. Review of *The Bridge to Humanity*, by W. Goldschmidt. *Human Ethology Bulletin*, 21(4): 4-5.
 166. Review of *A Brief History of the Mind*, by W. Calvin. *Human Ethology Bulletin*, 21: 17-18.
 167. Review of *The Chimpanzees of the Budongo Forest*, by V. Reynolds. *Primate Conservation*, 21: 179-180.
 168. Reply to Horacio Fabrega's commentary: Making sense of behavioral irregularities of

- great apes. *Neuroscience and Biobehavioral Reviews*, 30:1274-1277. (with Preuschoft, S., Bruene-Cohrs, U. & Bruene, M.)
169. 2007 An ant's eye view of animal cognition (Foreword). In: Reznikova, Z., *Animal Cognition: An Experimental View*, Cambridge University Press, pp. xiii-xiv.
 170. Review of *Our Inner Ape*, by F. de Waal. *Journal of Human Evolution*, 52:468-469.
 171. Review of *Primate Behavioral Ecology. 3rd Edition*, by K. Strier. *Primate Conservation*, 22:1.
 172. Review of *The Ape in the Tree: An Intellectual & Natural History of Proconsul*, by A. Walker. *Primate Eye*, 96: 25-26.
 173. Review of *Richard Dawkins. How a Scientist Changed the Way We Think*, by A. Grafen & M. Ridley, (eds). *Human Ethology Bulletin*, 22:7-8.
 174. Savanna chimpanzees dig for food. *Proceedings of the National Academy of Sciences (USA)*, 104:19167-19168. (comment)
 175. 2008 Comment on 'The chimpanzee has no clothes' by K. Sayers, and C.O. Lovejoy, *Current Anthropology*, 49:102-103.
 176. Kenji Imanishi: Pioneer of primatology. *Current Biology*, 18:R587-591. (with T. Matsuzawa) (commissioned essay)
 177. Chasing after chimpanzees. *Relay*, 4:3.
 178. 2009 Review of *Mothers and Others*, by S. Hrdy. *American Scientist*, 97:328-330.
 179. Review of *Apes of the Impenetrable Forest*, by C. Stanford. *Primates*, 50:89-90.
 180. Review of *The Bonobos*, by T. Furuichi and J. Thompson (eds.), *Human Ethology Bulletin*, 24: 3-4.
 181. Palaeoanthropology meets primatology. (preface) *Journal of Human Evolution*, 57:335-336. (with R.A. Foley)
 182. 2010 Studying extant species to model our past. (letter) *Science*, 327:410. (with 11 others)
 183. Review of *The Real Chimpanzee*, by C. Boesch. *Primates*, 51:189-190.
 184. Review of *Man the Hunted* by D. Hart and R. Sussman. *Primates*, 52: 91-92.
 185. Review of *Beautiful Minds*, by M. Bearzi and C.B. Stanford. *Human Ethology Bulletin*, 25 (3): 12-13.
 186. 2011 Preface. *The Cultured Chimpanzee* [Slovenian translation] Ljubljana, pp. 11-12.
 187. Short tribute to Prof. Toshisada. *Pan Africa News*, 18:4.
 188. 2012 Recollections of Prof. Itani, submitted (with C.E.G. Tutin)
 189. Obituary for Professor Toshisada Nishida. *Primates*, submitted. (with J. Yamagiwa, W.Y. Brockelman, A. Harcourt, E.W. Heyman, M. Inoue-Murayama, T. Ishida, J.C. Mitani, D.S. Sprague & Y. Takahata)
 190. Obituary for Toshisada Nishida. *International Journal of Primatology*, submitted. (with J.C. Mitani, F. de Waal, K. Hosaka, M. Nakamura, A. Nishimura, R.W. Wrangham & J. Yamagiwa)
 191. Review of *The Chimpanzees of Bossou and Nimba*, by T. Matsuzawa., T. Humle and Y. Sugiyama (eds.), *Primates*, in press.
 192. Obituary for Professor Toshisada Nishida (1941-2011). *Primate Eye*, in press.

Exhibit B to McGrew Affidavit -

References

[pp. 462 - 465]

This is "Exhibit B"
 referred to in the Affidavit of
 William C McGrew
 Referred to by the
 21/12/13

EXHIBIT B

References:

- Bering, J., and Bjorklund, D.F. (2000) Deferred imitation of object related actions in human-reared juvenile chimpanzees and orang-utans. *Developmental Psychobiology* 36: 218-232.
- Bjorklund, D.F., Bering, J. and Ragan P. (2000) A two-year longitudinal study of deferred imitation of object manipulation in a juvenile chimpanzee (*Pan troglodytes*) and orang-utan (*Pongo pygmaeus*). *Developmental Psychobiology* 37: 229-237.
- Boesch, C. (2012) *Wild Cultures*. Cambridge University Press.
- Boesch, C., Head, J., and Robbins, M.M. (2009) Complex tool sets for honey extraction among chimpanzees in Loango National Park, Gabon. *Journal of Human Evolution* 56: 560 – 569.
- Brosnan, S.F. (2013) Justice and fairness related behaviors in nonhuman primates. *Proceedings of the National Academy of Sciences* 110(2): 10416-10423.
- Brosnan, S.F., Schiff, H.C., and deWaal, F.B.M. (2005). Tolerance for inequity may increase with social closeness in chimpanzees. *Proceedings: Biological Sciences* 272: 253-258.
- Brown, P., Sutikna, T., Morwood, M.J., Soejono, R.P., Jatmiko, E., Saptomo W., and Rokus, A.D., (2004). A new small-bodied hominin from the Late Pleistocene of Flores, Indonesia. *Nature* 431: 1055-1061.
- Buttelmann, D., Carpenter, M., Call, J. and Tomasello, M. (2007) Enculturated chimpanzees imitate rationally. *Developmental Science* 10: F31-F38.
- Carvalho, S., Biro, D., McGrew, W.C., and Matsuzawa, T. (2009). Tool composite reuse in wild chimpanzees (*Pan troglodytes*): Archaeologically invisible steps in the technological evolution of early hominins? *Animal Cognition* 12 (Suppl. 1): 103 – 114.
- Goodall, J. (1967) *My Friends the Wild Chimpanzees*. National Geographic.
- Goodall, J. (1986) *The Chimpanzees of Gombe*. Harvard University Press.
- Goodman, M. (1999) The genomic record of humankind's evolutionary roots. *American Journal of Human Genetics* 64: 31 - 39
- Haun, D. and Call, J. (2008) Imitation recognition in great apes. *Current Biology* 18: R288-R290.
- Hirata, S. and Murimara, N. (2000) Naïve chimpanzees' (*Pan troglodytes*) observation of experienced conspecifics in a tool-using task. *Journal of Comparative Psychology* 114: 291-296.
- Horner, V., Carter, J.D., Suchak, M., de Waal, F.B.M. (2011) Spontaneous prosocial choice by chimpanzees. *Proceedings of the National Academy of Sciences* 108(33): 13847-13851.

- Horner, V. and Whiten, A. (2005) Causal knowledge and imitation/emulation switching in chimpanzees (*Pan troglodytes*) and human children (*Homo sapiens*). *Animal Cognition* 8: 164-181.
- Huffman, M. (1997). Current evidence for self-medication in primates: A multidisciplinary perspective. *Yearbook of Physical Anthropology* 40: 171-200.
- Matsuzawa, T. (1991) Nesting cups and meta-tools inn chimpanzees. *Behavioural and Brain Sciences* 14: 570-571.
- McGrew, W.C. (1987) Tools to get food: The substints of Tasmanian aborigines and Tanzanian chimpanzees compared. *Journal of Anthropological Research* 43: 247-258.
- McGrew, W. C. (1992) *Chimpanzee Material Culture: Implications for Human Evolution*. Cambridge University Press.
- McGrew, W. C. (2004) *The Cultured Chimpanzee: Reflections on Cultural Primatology*. Cambridge University Press.
- McGrew, W.C. (2007) New wine in new bottles: Prospects and pitfalls of cultural primatology. *Journal of Anthropological Research* 67: 167-183.
- McGrew, W.C. (2010) Chimpanzee technology. *Science* 328: 579-580.
- McGrew, W.C. (2011) *Pan symbolicus*. A cultural primatologist's viewpoint. In: *Homo Symbolicus*, Henshilwood, C.S. & d'Errico, F. (eds.), John Benjamins, pp. 1-12.
- McGrew, W.C. (2013) Is primate tool use special? Chimpanzee and New Caledonian crow compared. *Philosophical Transactions of the Royal Society B* 368: 201220422
- McGrew, W. C., Marchant, L.F., Scott, S.E., Tutin, C.E.G. (2001) Intergroup differences in a social custom of wild chimpanzees: The grooming hand- clasp of the Mahale Mountains, Tanzania. *Current Anthropology* 42: 148-153.
- McGrew, W., Preutz, J.D., Fulton, S.J. (2005) Chimpanzees use tools to harvest social insects at Fongoli, Senegal. *Folia Primatologica* 76: 222-226.
- McGrew, W.C.,Tutin, C.E.G. (1978) Evidence for a social custom in wild chimpanzees? *Man* 13: 234-251.
- McGrew, W. C., Tutin, C.E.G., Baldwin, P.J. (1979) Chimpanzees, tools and termites: Cross-cultural comparisons of Senegal, Tanzania and Rio Muni. *Man* 14: 185-21.

- Marshall-Pescini, S. and Whiten, A. (2008) Social learning of nut-cracking behavior in East African sanctuary – living chimpanzees (*Pan troglodytes schweinfurthii*). *Journal of Comparative Psychology* 122: 186-194.
- Matsuzawa, T., Tomonaga, M., and Tanaka, N. (2006). *Cognitive Development in Chimpanzees*. Springer-Verlag, Tokyo.
- Mercader, J., Barton, H., Gillespie, J., Harris, J., Kuhn, S., Tyler, R., Boesch, C. (2007) 4,300-year-old chimpanzee sites and the origins of percussive stone technology. *Proceedings of the National Academy of Sciences* 104: 3043-3048.
- Mercader, J., Paner, M.A., Boesch, C. (2002) Excavation of a chimpanzee stone tool use site in the African rainforest. *Science* 296: 1452-1455.
- Mitani, J., Watts, D. P., and Amstler, S.J. (2010) Lethal intergroup aggression leads to territorial expansion in wild chimpanzees. *Current Biology* 20: R507-508.
- Myowa-Yamakoshi, M. and Matsuzawa, T. (2000). Imitation of intentional manipulatory actions in chimpanzees (*Pan troglodytes*). *Journal of Comparative Psychology* 114: 381-391.
- Nagel, K., Olguin, R., Tomasello, M. (1993) Processes of social learning in the tool use of chimpanzees (*Pan troglodytes*) and human children (*Homo sapiens*). *Journal of Comparative Psychology* 107: 174-186.
- Nakamura, M. and Uehara, S. (2004) Proximate factors of different types of grooming hand-clasp in Mahale chimpanzees: Implications for chimpanzee social customs. *Current Anthropology* 45: 108-114.
- Nielsen, M., Collier-Baker, E., Davis, J.M., Suddendorf, T. (2004) Imitation recognition in a captive chimpanzee (*Pan troglodytes*). *Animal Cognition* 8: 31-36.
- Proctor, D., Williamson, R.A., de Waal, F.B.M., and Brosnan, S.F. (2013) Chimpanzees play the Ultimatum Game. *Proceedings of the National Academy of Sciences* 110(6): 2070-2075.
- Schoening, C., Humle, T., Mobius, Y., McGrew, W. (2008) The nature of culture: technological variation in chimpanzee predation on army ants revisited. *Journal of Human Evolution* 55: 48-59.
- Ségurel, L., Thompson, E.E., Flutre, T., Lovstad, J., Venkat, A., Margulis, S.W., Moyse, J., Ross, S., Gamble, K., Sella, G., Ober, C., Przeworski, M. (2012). The ABO blood group is a trans-species polymorphism in primates. *Proceedings of the National Academy of Sciences* 109: 18492-18498.
- Sousa, C., Biro, D., Matsuzawa, T. (2009). Leaf tool-use for drinking water by wild chimpanzees (*Pan troglodytes*): Acquisition patterns and handedness. *Animal Cognition* 12 (Suppl. 1): 115-125.

- Von Rohr, C.R., Koski, S.E., Burkart, J.M., Caws, C., Fraser, O.N., Ziltener, A., van Schaik, C.P. (2012). Impartial third-party interventions in captive chimpanzees: A reflection of community concern. *Public Library of Science One* 7(3): e32494.
- Whiten, A. (2011) The scope of culture in chimpanzees, humans and ancestral apes. *Philosophical Transactions of the Royal Society B* 366: 997-1007.
- Whiten, A., Custance, D., Gomez, J.C., Teixidor, P., Bard, K. (1996) Imitative learning of artificial fruit processing in children (*Homo sapiens*) and chimpanzees (*Pan troglodytes*). *Journal of Comparative Psychology* 110: 3-14.
- Whiten, A., Goodall, J., McGrew, W.C., Nishida, T., Reynolds, V., Sugiyama, Y., Tutin, C.E.G., Wrangham, R.W., Boesch, C. (1999) Cultures in chimpanzees. *Nature* 399: 682-685.
- Whiten, A., Horner, V., de Waal, F.B.M. (2005) Conformity to cultural norms of tool use in chimpanzees. *Nature* 437: doi:10.1038/nature04047
- Whiten, A., McGuigan, N., Marshall-Pescini, S., Hopper, L.M. (2009) Emulation, imitation, over-imitation and the scope of culture for child and chimpanzee. *Philosophical Transactions of the Royal Society B* 364: 2417-2428.
- Wynn, T.G., and McGrew, W.C. (1989) An ape's view of the Oldowan. *Man* 24: 383-398.
- Wynn, T., Hernandez-Aguilar, R.A., Marchant, L.F., McGrew, W.C. (2011) "An ape's view of the Oldowan" revisited. *Evolutionary Anthropology* 20: 181-197.
- Yamamoto, S., Humle, T., Tanaka, M. (2013) Basis for cumulative cultural evolution in chimpanzees: social learning of a more efficient tool-use technique. *Public Library of Science One* 8: e55768. doi:10.1371/journal.pone.0055768

Affidavit of Mathias Osvath, declared November 19, 2013

[pp. 466 - 474]

STATE OF NEW YORK
SUPREME COURT COUNTY OF FULTON

In the Matter of a Proceeding under Article 70 of
the CPLR for a Writ of Habeas Corpus,

THE NONHUMAN RIGHTS PROJECT, INC.,
on behalf of TOMMY,

Petitioners,

v.

PATRICK C. LAVERY, individually and as an
officer of Circle L Trailer Sales, Inc., DIANE
LAVERY, and CIRCLE L TRAILER SALES,
INC.,

Respondents.

**AFFIDAVIT OF
MATHIAS OSVATH**

Index No.:

COUNTRY OF SWEDEN)
PROVINCE OF Skåne) ss:
MUNICIPALITY OF Lund)

Mathias Osvath being duly sworn, deposes and says:

Introduction and Qualifications

1. My name is Mathias Osvath. I received a PhD in Cognitive Science, with specialization in Cognitive Zoology from Lund University in 2010.

2. I submit this affidavit in support of Petitioners The Nonhuman Rights Project, Inc. ("NhRP"), on behalf of Tommy, for a writ of habeas corpus. I am a non-party to this proceeding.

3. I am a Cognitive Zoologist at Lund University in Sweden, a research fellow in the Department of Cognitive Science at Lund, and leader of the Cognitive Zoology Group at Lund. I am the scientific director of two research facilities for the study of animal cognition: Lund University Primate Research Station, and Lund University Corvid Cognition Station. I

am currently the main supervisor of two PhD-students in Cognitive Zoology. I am, and have been, teaching courses on graduate and post-graduate levels in Comparative Cognition, Animal Behaviour, Ethology, Methods in Cognitive Science, Neurocognition (mainly in different departments at Lund University, and at the Swedish University of Agricultural Sciences).

4. Apart from my work at Lund University I collaborate on different projects on animal cognition with colleagues at Oxford University, the Max Planck Institute and the University of Vienna.

5. I have been selected as one of 10 excellent young researchers of Lund University (the largest university in Northern Europe). The Swedish head of State, King Carl Gustav XVI, made an official visit to the primate research station I founded (and direct) to highlight its importance in Swedish cognitive research. I have received funding from several prestigious foundations including The Swedish Research Council, the Crafoord Foundation, in which I received the largest grant award in the Foundation's history for a regular science project, and The Royal Swedish Academy of Sciences.

6. I serve on various boards and groups at Lund concerned with the ethical treatment of animals in research. I have been on the faculty steering committee for the animal research facilities since 2007. I am often asked for advice and opinions by the Swedish Agricultural Board (which implements legislation on animal research). I have been a member of the research committee for the Swedish Zoo Association since 2009. I have sat on the board of the Jane Goodall Institute in Sweden since 2009. I am on the advisory board of Lund University's Institute for Advanced Studies. I sit on the editorial board of three international scientific journals: *Frontiers in Comparative Psychology*, *International Journal of Comparative Psychology* and *Animal Behavior and Cognition*.

7. I specialize in complex cognition, specifically mental representation and planning abilities, of great apes and corvids (crows). I have studied great apes in captivity with

controlled experiments and observations since 2004. I have worked with corvids both in captivity and in the wild since 2007. To my knowledge I am the only scientist who has created a research method for comparing distantly related, but cognitively similar, species (apes and corvids) in order to understand the principles of complex cognition.

8. I have written 16 peer-reviewed scientific papers and book chapters (and 17 conference abstracts). I am the sole or the first author for a majority of these. Two of my papers (published in *Current Biology* and *Animal Cognition*) are among the most highly cited papers in the animal behavior field (in the 98th and 99th percentile of citations since published). One of my findings on chimpanzee planning abilities was selected by *Discover Magazine* as one of the scientific breakthroughs of the year 2009 (and appeared at a similar list in *New Scientist*). I am routinely invited to contribute to special issues in various journals including *Philosophical Transactions of the Royal Society B*.

9. I regularly give talks in scientific contexts and for the public. I am often an invited speaker to national and international academic departments and conferences. Apart from Sweden, I have given talks (often several times in each country) in Denmark, Germany, Austria, Czech Republic, France, UK, USA and Japan. My research has made international headlines on the front pages of newspapers like The Guardian and Le Figaro. The news section of *Science* has twice reported on my findings. I have twice given interviews to North America's largest radio show on science, "Quarks and Quirks." In Sweden, my research has been the focus of several prime-time radio and TV documentaries. My scientific discoveries on great ape planning were the most covered (widely written about) news to come out of Sweden in 2009 and my findings became the largest international news from Sweden that year. I have also collaborated with Animal Planet and the BBC on documentaries on animal cognition and behavior.

Basis for Opinions

10. The opinions I state in this Affidavit are based on my scientific knowledge about chimpanzee cognition. In particular it is based on my expertise in great ape abilities to foresee potential future states, which is an area where I am regarded as among those with the foremost knowledge. A full reference list of peer-reviewed literature cited herein is annexed hereto as “Exhibit A”.

Opinions

11. Chimpanzees are, together with bonobos, our closest living relatives (Goodman, 1999) and, as such, we share an abundance of characteristics. We are not only similar in appearance and physiology but also in our emotions and our cognition. Each year the list of uniquely human cognitive abilities dwindles as we learn more about chimpanzees and other great apes. Many of the traits we consider to be characteristic of humans are those which define someone as an autonomous being or person. Likewise, chimpanzees and other great apes, share these capacities associated with autonomy. I will here focus on one major class of those key characteristics of autonomy which my colleagues and I have been studying in great apes for the last seven years: the ability to plan and remember from a first person perspective.

12. When we humans recollect a specific event or plan for a new situation, we use perceptual simulations, which enables us to experience these events mentally, i.e., with our “inner eyes and ears”. One can think of this ability as mental time travel. This skill is enabled through the episodic system, that is, memories for autobiographical events and foresights for personal situations, (Tulving, 1985). Tulving identified what he called *autonoetic consciousness* (which roughly means self-knowing consciousness) as a necessary correlate of the episodic system (Tulving, 1985). Put simply, without the understanding that you are an individual who exists through time you would not be able to recollect past events in your life and plan future events. Autonoetic consciousness gives an individual of any species an

autobiographical sense of a self with a future and a past. Chimpanzees and other great apes clearly possess an autobiographical self, as they are able to prepare themselves for future actions (e.g., tool use), even as much as a day in advance (Beran et al., 1999, 2004, 2012; Beran and Evans, 2009, 2012; Mulcahy and Call, 2006; Osvath and Osvath, 2008) and demonstrate a capacity for episodic memory. They can remember highly specific contextual elements, that is, the “what, where and when” of events when hours, weeks and even years have passed (Martin-Ordas et al., 2010; 2013).

13. In 2009, I published an observational study of one male chimpanzee in a zoo who prepared for future stone throwing at visitors (Osvath, 2009). The key findings in this study were that the chimpanzee collected and stockpiled stones at strategic places in his compound when he appeared completely calm, but when he used them later he was in an agitated state. The ability to plan for events where you are in a different psychological state from the current situation is regarded as a strong sign of an episodic system (e.g. Suddendorf and Corballis, 2007). In 2012 we conducted a follow-up study in order to get a more detailed understanding of the planning behaviour of this chimpanzee (Osvath and Karvonen, 2012). We found very complex behaviours not documented before. The chimpanzee engaged in deception for the future by constructing hides for his stone caches and by inhibiting his aggressive displays (which are tell-tale signs of upcoming throws). The key finding was that chimpanzees are not only able to prepare for an upcoming event, but are also able to mentally construct a new situation which will alter the future (in this case the behaviours of human zoo visitors).

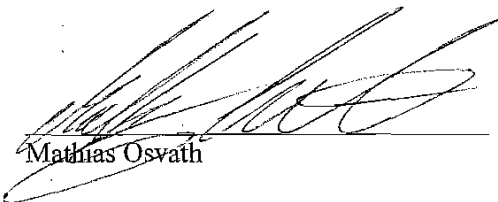
14. Part of being an autonomous individual is self-control. Chimpanzees, like humans, can delay gratification for a future reward; they possess a high level of self-control under many circumstances (Osvath and Osvath, 2008). Self-control depends upon the episodic system. Basically, the perceptual simulations made possible by episodic memory function as a motivational “brake” on current drives in favour of delayed rewards (Boyer, 2008). The sensory

simulation evokes a motivation related to the simulated episode. This motivation competes with whatever other motivations were prior to the simulation. This brings the future into the present: for example, a choice between immediate and delayed satisfaction becomes a choice between two current motivations. It is a trick of the brain allowing for delay of gratification only available to humans and nonhumans with a sufficiently sophisticated sense of self and autobiographical memory. In a series of experiments we demonstrated that chimpanzees can disregard an immediate small piece of food in favour of a tool that would allow them to get a larger piece of food in the future. Chimpanzees can even select a tool which they had never seen before, but which function they could guess, and use it in the future on a reward apparatus. This ability to perceive the function of a novel tool in the future would be impossible without mentally representing the details of the future event (Osvath and Osvath, 2008). We have also shown that chimpanzees plan for future exchanges with humans (Osvath and Persson, 2013). Finally, chimpanzees will even use self-distraction (playing with toys) to cope with the impulse of grabbing immediate candies instead of waiting for more (Evans and Beran, 2007). In summary, chimpanzees can delay a strong current drive for a better future reward, generalize a novel tool for future use, select objects for a much-delayed future task, and do all of this while keeping in mind several different elements of a situation.

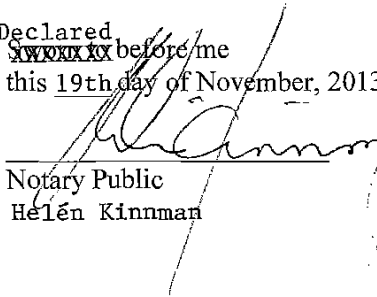
15. In addition to the behavioural studies there are also neurobiological findings showing that the chimpanzee brain is activated in the same areas and networks as the human brain during activities associated with planning and episodic memory (Rilling et al, 2007). These findings support the behavioral and cognitive evidence for an autobiographical self in both humans and chimpanzees.

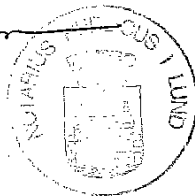
16. When taken together, these studies, as well as other reports on chimpanzee behaviour in the wild, leave little doubt that chimpanzees possess an episodic system similar to humans. Chimpanzees have a self-concept and are aware of their personal past and see a

personal future ahead of them. This also means that they can re-experience past pains and pleasures as well as anticipate such emotions. This in turn implies that they likely can, just as humans, be in pain over an anticipated future event that has yet to occur. For instance, confining someone in a prison or cage for a set time, or for life, would lose much of its power as punishment if that individual had no self-concept. Every moment would be a new moment with no conscious relation to the next. But, chimpanzees and other great apes have a concept of their personal past and future and therefore suffer the pain of not being able to fulfill one's goals or move around as one wants; like humans they experience the pain of anticipating a never-ending situation.


Mathias Osvath

Declared
~~XXXXXX~~ before me
in Sweden this 19th day of November, 2013
in officio


Notary Public
Helén Kinnman



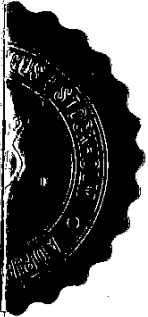
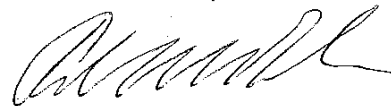
Dno 1730/13
Fee SEK 270

FILED: NEW YORK COUNTY CLERK 12/02/2015 05:12 PM

NYSCEF DOC. NO. 34

INDEX NO. 162358/2015

RECEIVED NYSCEF: 12/02/2015

APOSTILLE**(Convention de La Haye du 5 octobre 1961)****1. Country : Sweden****This public document****2. has been signed by Helén Kinnman****3. acting in the capacity of Notary Public****4. bears the seal/stamp of Notary Public in
Lund****Certified****5. at Stockholm****6. the 2013-11-22****7. by Adrienne Bonde****Deputy Notary Public****8. No 5498****9. Seal/stamp:****10. Signature:**

1081



Exhibit A to Osvath Affidavit -

References

[pp. 475 - 476]

EXHIBIT A

References:

- Beran, M., and Evans, T.A. (2012) Language-trained chimpanzees (*Pan troglodytes*) delay gratification by choosing token exchange over immediate reward consumption. *American Journal of Primatology* 74: 864-870.
- Beran, M., and Evans, T.A. (2009) Delay of gratification by chimpanzees (*Pan troglodytes*) in working and waiting situations. *Behavioural Processes* 80: 177-181.
- Beran, M.J., Pate, J.L., Washburn, D.A., and Rumbaugh, D.M. (2004) Sequential responding and planning in chimpanzees (*Pan troglodytes*) and rhesus macaques (*Macaca mulatta*). *Journal of Experimental Psychology: Animal Behavior Processes* 30(3): 203-212.
- Beran, M., Perdue, B.M., Bramlett, J.L., Menzel, C.R., and Evans, T.A. (2012) Prospective memory in a language-trained chimpanzee (*Pan troglodytes*). *Learning and Motivation* 43: 192-199.
- Boyer, P. (2008) Evolutionary economics of mental time travel? *Trends in Cognitive Sciences* 12: 219-224
- Evans, T., and Beran, M. (2007). Chimpanzees use self-distraction to cope with impulsivity. *Biology Letters* 3: 599-602.
- Goodman, M. (1999) The genomic record of humankind's evolutionary roots. *American Journal of Human Genetics* 64: 31 – 39
- Martin-Ordas, G., Haun, D., Colmenares, F., and Call, J. (2010) Keeping track of time: evidence for episodic-like memory in great apes. *Animal Cognition* 13: 331-340
- Martin-Ordas, G., Berntsen, D., and Call, J. (2013) Memory for distant past events in chimpanzees and orangutans. *Current Biology* 23: 1438-1441
- Mulcahy, N.J., and Call, J. (2006) Apes save tools for future use. *Science* 312: 1038-1040
- Osvath, M. (2009) Spontaneous planning for future stone throwing by a male chimpanzee. *Current Biology* 19: R190-R191
- Osvath, M., and Karvonen, E. (2012) Spontaneous innovation for future deception in a male chimpanzee. *PLoS ONE* 7(5)
- Osvath, M., and Osvath, H. (2008) Chimpanzee (*Pan troglodytes*) and orangutan (*Pongo abelii*) forethought: self-control and pre-experience in the face of future tool-use. *Animal Cognition* 11: 661-674
- Osvath, M., and Persson, T. (2013) Great apes can defer exchange: a replication with different

results suggesting future oriented behavior. *Frontiers in Psychology* 4

Rilling, J.K., Barks, S.K., Parr, L.A., Preuss, T.M., Faber, T.L., Pagnoni, G., Bremner J.D., and Votaw, J.R. (2007) A comparison of resting-state brain activity in humans and chimpanzees. *Proceedings of the National Academy of Sciences USA* 104:17146–17151

Suddendorf, T., and Corballis, M.C. (2007) The evolution of foresight: what is mental time travel and is it unique to humans? *Behavioral and Brain Sciences* 30:299–313

Tulving, E. (1972) Episodic and semantic memory. In: Tulving E, Donaldson W (eds) *Organization of Memory*. Academic Press, New York

Tulving, E. (1985) Memory and consciousness. *Canadian Psychology* 26: 1-12

Affidavit of Emily Sue Savage-Rumbaugh, sworn to November 22, 2013
[pp. 477 - 493]

FILED: NEW YORK COUNTY CLERK 12/02/2015 05:12 PM

NYSCEF DOC. NO. 35

INDEX NO. 162358/2015

RECEIVED NYSCEF: 12/02/2015

STATE OF NEW YORK
 SUPREME COURT COUNTY OF FULTON

In the Matter of a Proceeding under Article 70 of
 the CPLR for a Writ of Habeas Corpus,

THE NONHUMAN RIGHTS PROJECT, INC.,
 on behalf of TOMMY,

Petitioners,

v.

PATRICK C. LAVERY, individually and as an
 officer of Circle L Trailer Sales, Inc., DIANE
 LAVERY, and CIRCLE L TRAILER SALES,
 INC.,

Respondents.

**AFFIDAVIT OF
 EMILY SUE SAVAGE-
 RUMBAUGH**

Index No.:

STATE OF IOWA)
) ss:
 COUNTY OF Polk)

Emily Sue Savage-Rumbaugh, being duly sworn, deposes and says:

Introduction and Qualifications

1. My name is Emily Sue Savage-Rumbaugh. I received a B.A. in Psychology from Southwest Missouri University in 1970, a M.S. in Psychology from University of Oklahoma in 1975, and a Ph.D. in Psychology from the University of Oklahoma in 1975. I have been awarded honorary Ph.Ds by the University of Chicago in 1997, and Missouri State University in 2008. I work and reside in Des Moines, Iowa.

2. I submit this affidavit in support of Petitioners The Nonhuman Rights Project, Inc. ("NhRP"), on behalf of Tommy, for a writ of habeas corpus. I am a non-party to this proceeding.

3. I am currently the Director Emeritus of the Iowa Primate Learning Sanctuary. I previously served as (in reverse chronological order): (1) an Affiliate Professor at Iowa State University, Simpson college for seven years; (2) a Professor, an Associate, and an Adjunct Professor in the Department of Biology & Psychology at Georgia State University over the course of 25 years; and (3) an Associate Research Professor, Assistant Research Professor, and Research Associate at the Yerkes Primate Research Center at Emory University over a 12 year period. I have regularly taught classes in primate behavior, evolution of innate behaviors, evolution of learned behavior, learning theory, developmental psychology, biology, psychobiology of language, socio-biology, and introductory ethology.

4. During my career I have received 16 awards from a variety of academic, research, nongovernment, media, and professional organizations. Some of the more notable include: (1) one of the most 100 influential scientists in the world by *Time Magazine* in 2010; (2) selection by the Millennium Project for inclusion on the 100 most influential works in cognitive science in the 20th century for my book titled, "Language comprehension in ape and child," (1993, Monographs of the Society for Research in Child Development); (3) a Fellow at the American Psychological Association; and (4) a Woodrow Wilson Fellow (1970-1975).

5. I am affiliated with a number of professional organizations including: (1) the International Primatological Society; (2) the American Psychological Association; and (3) the American Psychological Association. During the course of my career, I have also received numerous research grants including grants from: (1) National Institute of Child Health and Human Development; (2) Biomedical Research Support Grant, Emory University; (3) World Wildlife Fund; and (4) The Templeton Foundation.

6. My research specialization is in the study of the language learning and cognition of chimpanzees and bonobos. I began studying the cognitive processes and linguistic behavior in captive chimpanzees in 1971. From 1972 to 1975, I conducted captive studies of mother-infant groups of chimpanzees. From 1975 to 1976, I studied the social behavioral of *Pan paniscus* and *Pan troglodytes*. Following that, I spent 13 years (between 1976-1989) conducting studies of symbolic and cognitive processes in *Pan paniscus*, *Pan troglodytes*, and alinguistic *Homo sapiens*. In 1993, I spent a year studying free-ranging bonobos. From 1989 until present, I have studied the lexical and vocal linguistic ability, musical ability, tool manufacturing ability and general cognitive development of apes, with a specific focus on bonobos.

7. I have written or co-authored seven books, the most relevant include: (1) *Ape Language: From Conditioned Response to Symbol* (1986, New York: Columbia University Press); (2) *Kanzi: A Most Improbable Ape* (1993, NHK Publishing Co: Tokyo, JAPAN); (3) *Kanzi: The Ape at the Brink of the Human Mind* (1994, New York: John Wiley Publishers); (4) *Apes, Language, and the Human Mind* (1998, New York, NY: Oxford University Press); and (5) *Kanzi's Primal Language: The cultural initiation of apes into language* (2005, London: Palgrave/Macmillan). I have also appeared in five films on chimpanzees and apes, three NHK network (Japan) specials and one BBC special.

8. I have published 181 articles on the learning capability, behaviour, ecology, welfare, or conservation of chimpanzees, monkeys, and baboons. These articles are published in many of the in the world's most-cited peer-reviewed scientific journals, including: *Science*, *American Journal of Primatology*, *Folia Primatologica* (the official journal of the European Federation for Primatology), *International Journal of Primatology*, *Journal of Comparative Psychology*, *Journal of Human Evolution*, *Behavioral and Brain Sciences*, and *Journal of*

Experimental Psychology, Journal of Biology and Philosophy. I have also published in *Proceedings of the Fifth International Congress of Primatology, Proceedings of the Sixth International Congress of Primatology, Contemporary Primatology, Encyclopedia Americana, Collier's Encyclopaedia, Encyclopaedia Britannica Yearbook, The Cambridge encyclopaedia of human evolution* and *Encyclopaedia of Neuroscience*. Specific topics of these publications include: the use of symbolization and language by chimpanzees, group formation among captive mother-infant chimpanzees, human-oriented courtship behavior in a human-reared chimpanzee, mothering behavior towards a kitten by a chimpanzee, play and socio-sexual behaviour in chimpanzees, chimpanzee communication, chimpanzee tool use, chimpanzee cognition, chimpanzees and protolanguage, primate intelligence, chimpanzee counting, communicative intentionality in the chimpanzee, the relationship between language in apes and human beings, summation in the chimpanzee, care of captive chimpanzees, imitation by an ape, grammatical development by an ape, the invention of protogrammar by an ape, imitative learning in chimpanzees, delay of gratification in chimpanzees, spontaneous logicomathematical constructions by chimpanzees, primate geometry, and ape consciousness.

9. I regularly give invited lectures and take part in international symposia on primatology, which I have done since 1978. In the United States, I have given lectures at Columbia University, Emory University, Princeton University and the University of Chicago, among many other notable educational institutions. I have also given lectures and presentations on primates in other countries including: England, Japan, Canada, Germany, Australia, Portugal, France, Mexico, Sweden and Berlin. My Curriculum Vitae fully sets forth my educational background and experience and is annexed hereto as “**Exhibit A**”.

Basis for Opinions

10. The opinions I state in this affidavit are based on my professional knowledge, education, training, research and field work, as well as my review of peer-reviewed literature. A full reference list of peer-reviewed literature cited herein is annexed hereto as “**Exhibit B**”. In addition, the opinions set forth herein are based on many years of collaboration and research with my colleague, Duane Rumbaugh. Professor Rumbaugh and I have designed and implemented research experiments together in a joint laboratory and have co-authored numerous peer-reviewed articles.

Opinions

11. Chimpanzees share about 99% of our DNA (Wildman and Goodman 2002; Wildman, Grossman, and Goodman, 2003; The Chimpanzee Sequencing and Analysis Consortium 2005). This exceptionally high degree of genetic relatedness between chimpanzees and humans cannot, by itself, ensure that chimpanzees possess any specific human abilities. It is however, the single most important piece of scientific evidence to date regarding chimpanzee potential. It indicates that when behavioral studies of chimpanzees suggest that they are capable of self-aware conscious action, the capacity to reason and think, the ability to acquire symbolic language, there is reason to take these results seriously. It also ensures the following:

- a. Chimpanzee brain and behavior, like human brain and behavior, are, flexible and nearly completely dependent upon learning (Norman, 2002).
- b. Social and physical environment during prenatal, post-natal and childhood development plays a critical role in the development of adult cognitive capacities in the chimpanzee (Stern, D. 1971; Stern, D. 1977; Acqarone, 2007).

- c. Early mother/infant behavioral rearing trajectories are the single most important factor in determining manifestation of higher order cognitive capacities and conscious reflective capacity in adult chimpanzees (Trevathan, 1978; Trevathan, 1998; Brakke and Savage-Rumbaugh, 1999). When behavioral studies present differing assessments of chimpanzee cognitive capacities, differing early experience are the most probable cause (Greenfield, Maynard, Boehm, Schmidting, 2000; Greenfield, Lyn, and Savage-Rumbaugh; 2006. Greenfield, Lyn, Savage-Rumbaugh, 2008; Greenfield, 2009).
- d. That chimpanzees, like us, will manifest a developmental program that is designed to allow for the manifestation of increasing levels of consciousness awareness and self-understanding throughout adulthood, through culture and learning (Greenspan, 2004, Rumbaugh, D. M. & Savage-Rumbaugh; 1996). That significant behavioral plasticity present in both humans and chimpanzees means that the “normal” characteristics of any conscious self-aware individual (chimpanzee or human) will not manifest in an identical manner in every member of that species (Kellogg and Kellogg, 1933; Kitcher, 2006; Savage, Temerlin, and Lemmon 1973; Savage, 1975; Savage-Rumbaugh, 1984).
- e. That, under natural conditions, chimpanzees will develop and utilize self-awareness, self-agency and intelligence to survive (Wrangham, 2009; Muller and Wrangham, 2009; Nishida, Zamma, Matsusaka, T., Inaba, McGrew, W.C., 2010, Goodall, 1986).
- f. That chimpanzees, in natural conditions, will come to employ cause-effect reasoning to construct an understanding of their environment (Boesch, 2000,

2009; 2012; Savage-Rumbaugh, 1990; Rumbaugh and Washburn, 2003). They will also construct a social structure that is rule-based, conscious and successful thereby allowing them to survive as group, by virtue of culture, not by natural instinct (Nishida, 1968; 1970, 1979; Sugiyama, 1968, 1969, 1973a,b, 1981; Telekia, 1973; McGrew and Tutin, 1973; Tuttle, 1986; Preutz, 2002). Their DNA provides a neural basis for learning, but very few innate patterns of reaction to specific environmental stimuli (Tutin, 1975)

12. No design differences have been discerned between the structure of chimpanzee and human brains (Passingham, 1982; Passingham and Ettlinger, 1974).

13. Broca's Area and Wernicke's Area are regions in the brain that enable symbolic communications. The areas that correspond to Broca's Area and Wernicke's Area in chimpanzees correspond to those parts of the brain that enable their symbolic communications (Passingham, 1981).

14. In our laboratories, Professor Rumbaugh and I have demonstrated that chimpanzees reared early on in rich social linguistic worlds come to use geometric symbols (i.e. circles, squares, etc) the way we employ printed words (Rumbaugh, Gill, and Von Glasersfeld, 1973, Rumbaugh, 1977; Rumbaugh, 2013; Rumbaugh and Washburn, 2003). These chimpanzees are not reared in impoverished circumstances or social isolation. They have peers as well maternal and paternal familial social attachments. The various geometric symbols serve as words to them, and to the humans communicating with them (Savage-Rumbaugh, 1986; 1994).

15. The more learned amongst them can discuss social situations with each other and with those human researchers if the researchers attend to and understand their nonverbal

linguistic abilities. (Menzel, 1999). For example, they are capable of telling the researchers where they want to go, who they want to be with, the foods they want to eat (see Kanzi.bvu.edu). Those who comprehend spoken English, can communicate even more complex things, as long as the researchers are willing to patiently inquire and listen to their “yes/no” answers. They can answer yes/no questions about their inner most thoughts, plans, feelings, intentions, dislikes and likes if they trust the researcher and believe that this knowledge will not be employed against them (NHK, unpublished footage). They can also answer questions about the likes and dislikes of their companions and will tell researchers what other apes, who cannot comprehend English, want and/or think (Savage-Rumbaugh, 1986; Savage, 1975).

16. Chimpanzees can recognize themselves in mirrors and on television and use a flashlight to examine the interiors of their own throats. (Savage-Rumbaugh, 1986). Panzee, a chimpanzee reared with humans and bonobos, evidenced a sense of self and passed the mirror recognition test at 6 months of age. They demonstrate that they can recognize themselves in photos, videos, and masks ((Menzel, Savage-Rumbaugh, and Lawson, 1985; Savage-Rumbaugh, 1986). As adults they continue to recognize pictures of themselves and others, when they were children (Personal observation, Beran, SavageRumbaugh, Brakke, Kelley, & Rumbaugh, 1988; Beran, Pate, Richardson,& Rumbaugh, 2000). This capacity to “step-outside” the self and reflect upon ones own behavior, as one might reflect on the behavior of another- allows one to become the objects of one’s own thought. This capacity is at the root of human cultural, linguistic and moral systems (Savage-Rumbaugh and Hopkins, 19896; Savage-Rumbaugh, and Rumbaugh, 1998). Between the ages of two and three, chimpanzees are capable of deception. (Savage-Rumbaugh and McDonald, 1988). By three, they enjoy hiding games and can hide for as long as several hours without moving, even as researchers pass close by searching for them. By

adulthood, this capacity is translated into long planned stealthy raids on neighboring rival groups (Boesch, 2000, 2012).

17. Chimpanzees have demonstrated that they have intentions. They employ symbols to express themselves (Savage-Rumbaugh, 1986; Kanzi.bvu.edu). They do not simply respond to stimuli nor do they use symbols or signs as tricks to gain rewards. They are able to state what they are going to do, in advance of acting, then carry out their stated action. Thus their statements of intent match their actions. Examples include statements made by two language-trained chimpanzees, Sherman and Austin, who told each other the foods they were intending to share and told experimenters which items they were going to give to them (Savage-Rumbaugh, Shanker, Taylor, 1996).

18. With the emergence of the ability to state their intentions, Sherman and Austin also revealed that not only did they recognize and understand differential knowledge states between themselves, but they that language allows separate beings to bring their different knowledge states into accord with their own imminent intentions and thus to plan co-actions (Savage-Rumbaugh, Shanker and Taylor, 1998). For example, Sherman and Austin began to say 'Go outdoors' and then to head for the door, or 'Apple refrigerator' and then take an apple from the refrigerator (rather than any of the other foods that were located in the refrigerator). These were not requests, but statements of intent. When they reliably told human beings what they were going to do, the humans did not have to wonder where they were headed. This gave them an independence of action and social freedom that can only be developed within a language-based society (Greaves, Bensen, Taglialatela, Thibault, 2005)

19. The chimpanzees Sherman and Austin began (on their own and without training) to use symbolic means to co-ordinate their intended behavior with that of others by explaining

what they were going to do before they did so. In order to be able to produce statements about intended action, for the purpose of co-coordinating future actions with others, one must be able to form a thought and hold it in mind until agreement is reached between two parties. Coordinated actions can then take place between two sentient minds, because both have come to an agreement prior to action.

20. Chimpanzees demonstrate that they have learned symbols for hundreds of items, events and locations. They remember these symbols for decades, and learn new symbols without being taught, but by observing others use them (other apes or humans.) They can master syntax. There is no essential difference between what words chimpanzees learn mean to them, and what words humans learn mean to them.

21. Chimpanzees spontaneously begin comprehending both lexigrams and human speech, and not merely single words, but the specifics of hundreds of novel requests, and the understanding of conditional clauses. For example, the first time Panzee was told that there was a "Gorillas hiding just ahead in the woods" her hair immediately became erect and she began to walk with careful stealthy footsteps while looking cautiously for a gorilla. The first time she was told "If you will share your cereal with Sherman, you can have some more" -- she walked over to Sherman's cage and pushed her box of cereal it toward him. Another example was the understanding of such novel sentences as "If you hold still, I can put your backpack on." Conditional (if/then) relationships make up a very large portion of language use. Once children understand if/then linguistic structures almost anything can be negotiated linguistically, than through physical action.

22. Chimpanzees grasp the elements of language. For example, one day a human named Tim was standing outside the room of Lana, a language-trained chimpanzee, while

drinking a coke. Lana had learned the word for "coke," but had previously employed the word only in the context of obtaining coke from her vending machine, by using the stock sentence "Please machine give coke." She had never used the word "coke" in any other way or in any other sentence. One day there was no coke in her vending machine. She saw Tim standing outside drinking his own coke and she wanted one. She had learned the stock sentences "Tim give Lana this drink," and "Lana move out of room." Suddenly -- with no demonstration -- she formed the novel utterance "Lana drink this out of room?" Elements of all of these different stock phrases were thereby recombined to form the appropriate new sentence "Lana drink this out of room?" in a meaningful novel sentence. In order to test if this was an accident, the following day Tim intentionally repeated the behavior of drinking a coke outside of her room. This time Lana asked, "Please Lana drink coke this room." This was a slightly different utterance, but with a similar meaning and grammatically correct form. It indicated that Lana possessed a linguistic flexibility far beyond any sentences she had been taught and that she recognized many different types of utterances could be used to convey the same message. This is one of hallmarks of language, i.e. there is not one-to-one relationship between utterances and events. Instead there is an infinite array of flexible ways of communicating the same or similar things with just slight changes in meaning. In this case, her second novel utterance made clear WHAT it was that Lana wanted to drink, as Tim had a look on his face that very "official experimenter" oriented. (The previous day he had just been drinking a coke not doing a specific test.) Lana also added the polite function of "Please" -- again showing sensitivity to the difference in Tim's mood which she read from his face and body language.

23. When Sherman and Austin communicated with each other, a variety of spontaneous communicative gestures arose to augment their symbolic communication (Savage-

Rumbaugh, Rumbaugh, and Boysen, 1978). These gestures indicated that they paid close attention to the visual regard of the other. For example, if Austin were looking away when Sherman selected a symbol, Sherman would wait until Austin looked back. He would then point to the symbol he had used. If Austin still hesitated, Sherman would point to the food that the symbol symbolized (Savage-Rumbaugh, 1986; [Kanzi.bvu.edu](http://kanzi.bvu.edu)). If Austin's attention wandered even more, Sherman would take Austin's head and turn it toward the keyboard. If Sherman were not attending to Austin's request, Austin would gaze steadfastly at the symbol until Sherman took note. They recognized that the speaker had to monitor the listener, watch what he was doing and make judgments about his state of comprehension. Depending upon these judgments, the speaker had to decide how to proceed with conversational repair.

24. Sherman and Austin also invented an elaborate and highly sophisticated and creative rule-based system for intra-species gaze, symbols, body posture, head movements and gestures (kanzi.bvu.edu; Savage-Rumbaugh, Rumbaugh, Boysen, 1979).

25. Chimpanzees announce what that they are about to do, where they are going, what assistance they want from others, and how they feel (Savage-Rumbaugh, Ronski, Sevcik and Pate (1983)). They announce what they are going to retrieve from an array of objects that they've seen in another room (Savage-Rumbaugh, Pate, Lawsen, Smith and Rosenblum, 1983). They announce that they have seen important social events such as when they have seen another chimpanzee that has been anesthetized rolled by on a cart (this is extremely upsetting to them), or when they see that a gorilla has attacked another chimpanzee on television (Savage-Rumbaugh, Scanlon and Rumbaugh, 1980; Personal observation).

26. Chimpanzees accomplish "cross-modal perception". This means that they can take in information in one modality such as vision or hearing, and can internally translated to

information in another modality. They can also take in symbolically encoded information and translate it into any non-symbolic mode. For example when shown a picture of an object, they can retrieve that object by touch alone. They can also retrieve the correct object by touch when shown only the symbol representing that object (Savage-Rumbaugh, Hopkins, and Sevcik, 1988).

27. Chimpanzees recount what happened yesterday to an otherwise unknowing listener. For example -- if Panzee saw food hidden in a particular location, she can tell someone who has no idea where it is, how to go the place even though the original hiding was one, two, three, four or five days later (Menzel, 1999). Chimpanzees identify hidden items by name and, at times, state that it is covered with leaves and sticks (Menzel, 1999). Chimpanzees direct a human to a specific spot to retrieve the item through the orchestrated use of their lexigrams, vocalizations, pointing, and affective behaviors, such as facial expression. As the person being directed to a hidden item gets close, Panzee will smile, nod her head, produce breathy panting laughter -- etc. -- all with deliberate intent. Chimpanzees then celebrate when food is retrieved. They do so by giving loud pant hoots, rushing around in circles, hugging each other, and walking upright -- much like people act just after their team wins a close football game. (Personal observation). They also celebrate when they anticipate that they are, at last, successfully solving a computer task (by giving high pitched screams followed by pant hoots, hugging the experimenter and sometimes slapping themselves in joy) (Personal Observation).

28. Chimpanzees almost instantaneously distinguish relative masses and amounts (Rumbaugh, Savage-Rumbaugh, and Hegel, 1987; Rumbaugh, Savage-Rumbaugh, and Pate, 1988).

29. Chimpanzees have been taught the principle of number lines, cardinality and numerosity. They have counted as high as 21. (Unpublished data, Savage-Rumbaugh; Rumbaugh 2003; Rumbaugh, Hopkins, Washburn, and Savage-Rumbaugh, 1989).

30. Chimpanzees engage in mediational learning (Meador, Rumbaugh, Pate, Bard, 1978). They are able to “figure out” rules that allow them to solve new problems -- based on past information which they collate over multiple trials and reflect upon. This requires an ability to compute relationships among a variety of things and events. They understand they are positing predictive or cause-and-effect relationships about tasks they work on, and that they have control over what they do and what will happen (Rumbaugh, 1971; Rumbaugh and McCormack, 1969; Savage-Rumbaugh, 1990).

31. Chimpanzees use their imagination to engage in pretend-aggression and other forms of pretend. Sherman delighted in pretending that a King Kong doll was biting his fingers and toes. He would startle his caretakers by pretending to be in pain as he poked a needle in his skin and out the other side, being careful to just pierce the out layer of skin which was rather thick and which perhaps was not very painful. It looked awful to his caregivers, and he took great delight in the reactions his teasing provoked in his caretakers. He thought this so much fun that he began to try this trick in other locations around his body to see where he would get the greatest reaction for the caretakers (Kanzi.bvu.edu, personal observation).

32. Chimpanzees demonstrate, as did Lana in our laboratory, that she had a theory of mind, that she knew she had a mind, that she knew that a human had a mind, and that she knew that her mind and state of knowledge differed from that of the human. She believed that others had minds, thoughts, intentions, feelings, needs, desires, and intentions (Rumbaugh, 1977, in preparation, Rumbaugh 2013). Similarly, Sherman and Austin were presented with the need to

give each other specific information about the nature of 14 hidden foods. Only Sherman knew the contents of the container. It was his job to tell Austin, in whatever way he could, the name of the hidden food. It was Austin's job to translate this information back into geometrical symbols request. They were not shown how to do this, they were merely provided with the means to do so as the food trademarks were left on the floor in Sherman's room. The task required that they recognize that labels such as 'Coca Cola' and that 'M and M' were symbols. That Austin could understand the information Sherman was trying to convey even though neither had employed such trademarks as symbols ever before in their lives. This task was essentially a version of "mind-reading" tasks in which one chimpanzee has knowledge that another does not have. Both Sherman and Austin used these food labels, from the first trial, to tell the other individual the type of food that was hidden in the container. They then were asked to change roles and continued the successful symbolic informational exchange, again without making any errors at all (Savage-Rumbaugh, 1986). The uses that chimpanzee's make of language are very similar to those that humans employ, in that tend to give "new information" and/or to speak about things that are not obvious are given from the context alone. They focus on things that they logically assume the listener will not know. Young children employ language in a similar way. Thus the manner and mode of their language use itself indicates that they have a "theory of mind concept," that is, they believe other individuals have minds with content and that such content often differs. Language is a means to bring content into alignment in a manner that is beneficial to speaker and listener, allowing them to coordinate their behavior (Greenfield and Savage-Rumbaugh, 1984).

33. Chimpanzees are able to use symbols to communicate wishes, desire, needs, abstract information and sometimes secrets to one another. They tell each other what foods

experimenters have hidden in containers or in other rooms, what tools are needed to open containers, and locations where food has been left. The show each other how to use tools and they tell each other "new words" that they have assigned to objects that did not have names before (Savage-Rumbaugh, 1968; Savage-Rumbaugh, Rumbaugh, and Boysen, 1978a; Savage-Rumbaugh, Rumbaugh, and Boysen, 1978b).

Emily Sue Rumbaugh

Emily Sue Savage-Rumbaugh

Sworn to before me
this 22nd day of November, 2013

Krista Magill
Notary Public

STATE OF Iowa)
) ss:
COUNTY OF Polk)

On the 22nd day of November in the year 2013 before me, the undersigned, a notary public in and for said state, personally appeared Emily Sue Rumbaugh, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her capacity, and that by his/her signature on the instrument, the individual, or the person upon behalf of which the individual(s) acted, executed the instrument, and that such individual made such appearance before me the undersigned in the County of Polk and the State of Iowa.



Krista Magill
Notary Public

My Commission Expires: 10/26/16

STATE OF NEW YORK
SUPREME COURT COUNTY OF FULTON

In the Matter of a Proceeding under Article 70 of
the CPLR for a Writ of Habeas Corpus,

THE NONHUMAN RIGHTS PROJECT, INC.,
on behalf of TOMMY,

Petitioners,

v.

PATRICK C. LAVERY, individually and as an
officer of Circle L Trailer Sales, Inc., DIANE
LAVERY, and CIRCLE L TRAILER SALES,
INC.,

Respondents.

Index No.:

STATE OF IOWA)

) ss:

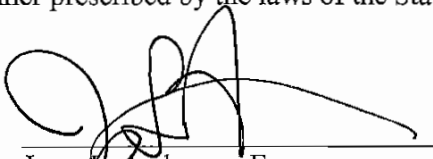
COUNTY OF POLK)

1. This Certificate of Conformity is submitted pursuant to New York CPLR 2309(c)
and New York Real Property Law § 299-a.

2. I am an attorney duly licensed to practice law in the State of Iowa.

3. I certify that the Affidavit of Emily Sue Savage-Rumbaugh, signed and dated on
Nov. 22, 2013, was taken in the manner prescribed by the laws of the State of Iowa.

Dated: November 22nd, 2013
Des Moines, Iowa


Jerry L. Anderson, Esq.
610 E. Salem Ave.
Indianola, Iowa 50125

**Exhibit A to Savage-Rumbaugh -
Curriculum Vitae
[pp. 494 - 530]**

CURRICULUM VITAE

Emily Sue Savage-Rumbaugh

Address: Iowa Primate Learning Sanctuary
4200 SE 44th Avenue
Des Moines, IA 50320
(515) 243 – 3580

Education

B.A. (Cum Laude), Southwest Missouri University: Psychology; May, 1970
M.S. University of Oklahoma: Psychology; May, 1972
Ph.D. University of Oklahoma: Psychology; May, 1975
Faculty Advisor: Dr. W. B. Lemmon

Current Position

Director Emeritus -- Iowa Primate Learning Sanctuary

Academic Appointments

2004-2011 Affiliate Professor Iowa State University, Simpson College
1992-2004 Professor, Dept. of Biology & Psychology, Georgia State University
1987-92 Assoc. Professor, Dept. of Biology, Georgia State University
1984-92 Assoc. Research Professor, Yerkes Primate Research Center, Emory University
1983-87 Adjunct Assoc. Professor, Dept. of Biology, Georgia State University
1977-84 Ass't Research Professor, Yerkes Primate Research Center Emory University
1976-77 Research Assoc., Yerkes Regional Primate Research Center, Emory University
1975-76 Post-Doctoral Fellow, Georgia State University
1972-75 Graduate Teaching Ass't, Department of Psychology, University of Oklahoma

Areas of Teaching Competency

primate behavior, evolution of innate behaviors, evolution of learned behavior, learning theory, developmental psychology, biology, psycho-biology of language, socio-biology, introductory ethology.

Research Experience

1970-71 Study of cognitive and verbal learning processes of children
1971-72 Study of cognitive processes and linguistic behavior in captive *Pan troglodytes*
1972-75 Captive studies of mother-infant groups of *Pan troglodytes*
1975-76 Comparative studies of the social behavioral of *Pan paniscus* and *Pan*

- trogloodytes*
- 1976-1989 Studies of symbolic and cognitive processes in *Pan paniscus*, *Pan troglodytes*, and alinguistic *Homo sapiens*
- 1989-to now Studies of the lexical and vocal linguistic ability, musical ability, tool manufacturing ability and general cognitive development of apes, with a specific focus on bonobos.
- 1993 Studies of free-ranging bonobos.

Awards and Honors

- Bob Green Fellowship, for academic distinction, Southwest Missouri University, 1969-1970.
- Woodrow Wilson Fellow, 1970-75.
- First Place, Graduate Student Paper Competition, Midwest Psychological Association, Oklahoma City, 1972.
- Fellow, Division 6, APA 1985-present
- Fellow, Division 1, APA 1985-present
- Fellow, APS 1996-present
- National Lecturer, Sigma Xi, The Scientific Research Society, July 1, 1988 to June 30, 1990.
- Representative for Women in Science, Brigham Young University, 1989
- The Smithsonian Institution's display of "Understanding Ourselves, Understanding Each Other," sponsored by the American Psychological Association's Centennial Convention, featured research of the Language Research Center, Georgia State University, to which I made major contributions. A film by the same name of the display is now distributed nationally for educational purposes by the APA, 1992
- Nobel Conference XXXII Invited Speaker, "Apes at the End of an Age: Primate Language and Behavior in the 90's", Gustavus Adolphus College, October, 1996.
- Honorary Doctor of Science, The University of Chicago, Chicago, Ill., June, 1997.
- Author, "Language comprehension in ape and child," published Monographs of the Society for Research in Child Development (1993), selected by the "Millennium Project," a listing of the top 100 most influential works in cognitive science in the 20th century by the University of Minnesota Center for Cognitive Sciences, 1999.
- Leighton A. Wilkie Award in Anthropology, Indiana University, November, 2000.
- Selected as a Woman of Influence, by Des Moines Business Record, 2007
- Honorary Doctor of Science, Missouri State University, 2008.
- Selected as one of the most 100 Influential scientists in the world, *Time Magazine*, 2010

Committees

- 1996-2004 Editorial Board of Language and Communication.
- 1989 Site visit committee member, National Institute of Child Health and Human Development.

1989-2004 Neurobiology and Behavior Development Committee Department of
Biology, Georgia State University

Professional Organizations

American Psychological Association
American Psychological Society
International Primatological Society
Society for Research and Child Development

PUBLICATIONS

Books Authored

- Savage-Rumbaugh, E. S. (1986). Ape Language: From Conditioned Response to Symbol. New York: Columbia University Press.
- Savage-Rumbaugh, E. S. (1993). Kanzi: A Most Improbable Ape. NHK Publishing Co: Tokyo, JAPAN.
- Savage-Rumbaugh, S., & Lewin, R. (1994). Kanzi: The Ape at the Brink of the Human Mind. New York: John Wiley Publishers. (Translated in German and Japanese)
- Savage-Rumbaugh, S., & Lewin, R. (1995). Kanzi: der sprechende Schimpanse: Was den tierischen vom menschlichen Verstand unterscheidet. [Kanzi: The Ape at the Brink of the Human Mind]. Munchen: Droemer Knaur.
- Savage-Rumbaugh, E. S., Shanker, S., & Taylor, T. J. (1998). Apes, Language and the Human Mind. New York, NY: Oxford University Press.
- Benson, J., Greaves, W., Savage-Rumbaugh, S., Taglialatela, J., & Thibault, P. (2005) "The thin end of the wedge: grammar and discourse in the evolution of language." In J. D. Benson & W. S. Greaves (Eds.) Functional Dimensions of Ape-Human Discourse, Equinox Press.
- Segerdahl, P., Fields, W.M., & Savage-Rumbaugh, E.S. (2005) *Kanzi's Primal Language: The cultural initiation of apes into language*. London: Palgrave/Macmillan.

Films

- Savage-Rumbaugh, E. S. Documentary film depicting symbol use and testing in the pygmy chimpanzee. National Geographic Special, February 23, 1986.
- Savage-Rumbaugh, E. S. Ape language: From conditioned response to symbol. (1986). Distributed by Psychological Cinema Registrar, Pennsylvania State University. (Edited 2-hour tape).
- Rumbaugh, D. M., Hopkins, W. D., Washburn, D. A., Savage-Rumbaugh, E. S. & Runfeldt, S. (1989). Lana chimpanzee learns to count by "Numath". Psychological Cinema Register, Pennsylvania State University, University Park, PA.
- Greenfield, P. M. & Savage-Rumbaugh. (1990). Ape language work featured in the Psychology Telecourse Language Program. Coastline Community College and KOCE-TV (Prod.), Huntington Beach, California.

Savage-Rumbaugh, Murphy, Sevcik, Williams, & Rumbaugh (1994). Family history of Language Research Center Bonobos detailing how each was raised and the resulting differences in language ability. Includes data base and segments of published research filmed by NHK of Japan. Bonobo People

NHK Special Feature: Kanzi: An Ape of Genius (1994).

BBC Special Feature: Chimptalk (1994).

NHK Special Feature: Kanzi II (2000).

NHK Special Feature: Kanzi III (2002).

Articles

- Savage, S., & Kanak, N. J. (1973). The effect of frequency and number of pairs in a verbal discrimination task. Bulletin of the Psychonomic Society, 2, 278-280.
- Savage, E. S., Temerlin, J. W., & Lemmon, W. B. (1973). Group formation among captive mother-infant chimpanzees (Pan troglodytes). Folia Primatologica, 20, 453-473.
- Lemmon, W. B., Temerlin, J. W., & Savage, E. S. (1975). The development of human-oriented courtship behavior in a human-reared chimpanzee (Pan troglodytes). In S. Kondo, M. Kawai, & A. Ehara (Eds.), Proceedings of the Fifth International Congress of Primatology, Contemporary Primatology (pp. 292-294), Karger: Basel.
- Savage, E. S., Temerlin, J. W., & Lemmon, W. B. (1975). The appearance of mothering behavior toward a kitten by a human-reared chimpanzee. In S. Kondo, M. Kawai, & A. Ehara (Eds.), Proceedings of the Fifth International Congress of Primatology, Contemporary Primatology (pp. 287-291). Karger: Basel.
- Savage, S. (1976). Pygmy chimpanzees: Update. Yerkes Newsletter, 13, 25-26.
- Rumbaugh, D. M., & Savage, E. S. (1977). Primate behavior. Encyclopedia Americana, 22, 580-582.
- Rumbaugh, D. M., & Savage, E. S. (1977). Animal psychology. Collier's Encyclopedia, 2, 226-228.
- Savage, E. S., & Malick, C. (1977). Play and socio-sexual behaviour in a captive chimpanzee (Pan troglodytes) group. Behaviour, 60, 179-194.
- Savage, E. S., & Rumbaugh, D. M. (1977). Communication, language, and Lana: A perspective. In D. M. Rumbaugh (Ed.), Language learning by a chimpanzee: The LANA project (pp. 287-309). New York: Academic Press.
- Savage-Rumbaugh, E. S., Wilkerson, B. J., & Bakeman, R. (1977). Spontaneous gestural communication among conspecifics in the pygmy chimpanzee (Pan paniscus). In G. H. Bourne (Ed.), Progress in ape research (pp. 97-116). New York: Academic Press.
- Savage, E. S., & Bakeman, R. (1978). Sexual morphology and behavior in Pan paniscus. Proceedings of the Sixth International Congress of Primatology (pp. 613-616). New York: Academic Press.
- Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1978). Symbolization, language and chimpanzees: A theoretical reevaluation based on initial language acquisition

- processes in four young Pan troglodytes. Brain and Language, 6, 265-300.
- Savage-Rumbaugh, E. S., & Wilkerson, B. J. (1978). Socio-sexual behavior in Pan paniscus and Pan troglodytes: A comparative study. Journal of Human Evolution, 7, 327-344.
- Savage-Rumbaugh, E. S., Rumbaugh, D. M., & Boysen, S. (1978). Symbolic communication between two chimpanzees (Pan troglodytes). Science, 201, 641-644.
- Savage-Rumbaugh, E. S., Rumbaugh, D. M., & Boysen, S. (1978). Linguistically mediated tool use and exchange by chimpanzees (Pan troglodytes). Behavioral and Brain Sciences, 4, 539-554.
- Savage-Rumbaugh, E. S., Rumbaugh, D. M., & Boysen, S. (1978). Sarah's problems of comprehension. Behavioral and Brain Sciences, 4, 555-557.
- Savage-Rumbaugh, E. S., Rumbaugh, D. M., & Boysen, S. (1978). Describing chimpanzee communication: A communication problem. Behavioral and Brain Sciences, 4, 614-616.
- Rumbaugh, D. M., Savage-Rumbaugh, E. S., & Gill, T. V. (1978). Language skills, cognition, and the chimpanzee. In F. C. C. Peng, (Ed.) Sign Language and Language Acquisition in Man and Ape: New Dimensions in Comparative Pedolinguistics (pp. 137-159). Boulder, CO: Westview Press.
- Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1978). Chimpanzee language research: Status and potential. Behavior Research Methods and Instrumentation, 10, 119-131.
- Rumbaugh, D. M., Savage-Rumbaugh, E. S., Gill, T. V., & Warner, H. (1979). The chimpanzee as an animal model in language research. In R. L. Schiefelbusch & J. H. Hollis (Eds.), Language intervention from ape to child (pp. 73-89). Baltimore: University Park Press.
- Savage-Rumbaugh, E. S. (1979). Symbolic communication - its origins and early development in the chimpanzee. New Directions for Child Development, 3, 1-15.
- Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1979). Chimpanzee problem comprehension: Insufficient evidence. Science, 206, 1201-1202.
- Savage-Rumbaugh, E. S., Rumbaugh, D. M., & Boysen, S. (1979). Chimpanzees and protolanguage. The Behavioral and Brain Sciences, 2, 396-397.
- Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1979). Initial acquisition of symbolic skills via the Yerkes computerized language analog system. In R. L.

- Schiefelbusch & J. R. Hollis (Eds.), Language intervention from ape to child (pp. 277-294). Baltimore: University Park Press.
- Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1980). A response to Herbert Terrace's article "Linguistic apes: What are they saying?" New York University Education Quarterly, Winter, p.33.
- Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1980). Language analogue project, phase II: Theory and tactics. In K. E. Nelson (Ed.), Children's language (Vol. II, pp. 267-307). New York: Gardner Press.
- Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1980). Primate intelligence. Encyclopedia Britannica Yearbook, pp. 64-75.
- Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1980). Requisites of Symbolic Communication--or are words for birds? The Psychological Record, 30, 305-315.
- Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1980). A response to Herbert Terrace's paper, Linguistic apes. The Psychological Record, 30, 315-318.
- Savage-Rumbaugh, E. S., Scanlon, J., & Rumbaugh, D. M. (1980). Communicative intentionality in the chimpanzee. The Behavioral and Brain Sciences, 3, 620-623.
- Savage-Rumbaugh, E. S., Rumbaugh, D. M., Smith, S. T., & Lawson, J. (1980). Reference: The linguistic essential. Science, 210, 922-925.
- Savage-Rumbaugh, E. S. (1981). Can apes use symbols to represent their world? In T. A. Sebeok & R. Rosenthal (Eds.), The clever Hans phenomenon: Communication with horses, whales, apes, and people, Vol. 364, (pp. 35-59). New York Academy of Sciences.
- Rumbaugh, D. M., Savage-Rumbaugh, E. S., & Scanlon, J. L. (1982). The relationship between language in apes and human beings. In J. L. Fobes, & J. E. King (Eds.), Primate Behavior. (pp. 361-385) New York: Academic Press.
- Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1982). Ape language research is alive and well: A reply. Anthropos, 77, 568-573.
- Savage-Rumbaugh, E. S. (1982). A pragmatic approach to chimpanzee language studies. In H. E. Fitzgerald, J. A. Mullins, & P. Gage (Eds.), Child nurturance, Vol. 3 (pp. 137-157). New York: Plenum.
- Scanlon, J., Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1982). Apes and language: An emerging perspective. In S. Kuczaj (Ed.), Language development: Language, cognition and culture. (pp. 471-485). Hillsdale, NJ: Lawrence Erlbaum

Associates.

- Seyfarth, R. M., Beer, C. G., Dennett, D. C., Gould, J. L., Lindauer, M., Marler, P. R., Ristau, C. A., Savage-Rumbaugh, E. S., Solomon, R. C., & Terrace, H. S. (1982). Communication as evidence of thinking. State of the art report. In D. R. Griffin (Ed.), Animal mind--Human mind (pp. 391-406). Dahlem Konferenzen, Berlin: Springer-Verlag.
- Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1983). Ape language. McGraw-Hill yearbook of science and technology -- 1982-1983, (pp. 113-116).
- Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1983). Apes and language research. In H. B. Miller & W. H. Williams (Eds.), Ethics and animals. (pp. 207-217) Clifton, NJ: Humana Press.
- Savage-Rumbaugh, E. S., Pate, J. L., Lawson, J., Smith, S. T., & Rosenbaum, S. (1983). Can a chimpanzee make a statement? Journal of Experimental Psychology: General, 112, 457-492.
- Savage-Rumbaugh, E. S., Romski, M. A., Sevcik, R., & Pate, J. L. (1983). Assessing symbol usage versus symbol competency. Journal of Experimental Psychology: General, 112, 508-512.
- Greenfield, P. M. & Savage-Rumbaugh, E. S. (1984). Perceived variability and symbol use: A common language-cognition interface in children and chimpanzees. Journal of Comparative Psychology, 98, 201-218.
- Savage-Rumbaugh, E. S. (1984). Review of: Primate Communication, Charles T. Snowdon, Charles H. Brown, Michael R. Petersen (Eds.), Cambridge University Press (1982). American Scientist, 72, 286-288.
- Savage-Rumbaugh, E. S. (1984). Verbal behavior at a procedural level in the chimpanzee. Journal of the Experimental Analysis of Behavior, 41(2), 223-250.
- Savage-Rumbaugh, E. S. (1984). Acquisition of functional symbol usage in apes and children. In H. L. Roitblat, T. G. Bever, & H. S. Terrace (Eds.), Animal cognition (pp. 291-310). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Savage-Rumbaugh, E. S., & Sevcik, R. (1984). Levels of communicative competency in the chimpanzee: Pre- representational and representational. In G. Greenberg & E. Tobach (Eds.), Behavioral evolution and integrative levels (pp. 197-219). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Savage-Rumbaugh, E. S. (1984). Pan paniscus and Pan troglodytes: Contrasts in preverbal communicative competence. In R. L. Susman (Ed.), The pygmy chimpanzee (pp. 395-413). New York: Plenum.

- Savage-Rumbaugh, E. S., Sevcik, R. A., Rumbaugh, D. M. & E. Rubert. (1985). The capacity of animals to acquire language: Do species differences have anything to say to us? Philosophical Transactions of the Royal Society, B308, 177-185.
- Menzel, E., Savage-Rumbaugh, E. S., & Lawson, J. (1985). Chimpanzee (*Pan troglodytes*) spatial problem solving with the use of mirrors and televised equivalents of mirrors. Journal of Comparative Psychology, 99(2), 211-217.
- Savage-Rumbaugh, E. S., Rumbaugh, D. M., & McDonald, K. (1985). Language learning in two species of apes. Neuroscience and Biobehavioral Reviews, 9, 653-665.
- Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1985). Commentary on Sue Taylor Parker's article "A social-technological model for the evolution of language." Current Anthropology, 26(5), 631.
- Savage-Rumbaugh, E. S., McDonald, K., Sevcik, R. A., Hopkins, W. D., & Rubert, E. (1986). Spontaneous symbol acquisition and communicative use by pygmy chimpanzees (*Pan paniscus*). Journal of Experimental Psychology: General, 115(3), 211-235.
- Savage-Rumbaugh, E. S., & Hopkins, W. D. (1986). Awareness, intentionality, and acquired communicative behaviors: Dimensions of intelligence. In R. J. Schusterman, J. A. Thomas, & F. G. Wood (Eds.), Dolphin cognition and behavior: A comparative approach (pp. 303-313). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Savage-Rumbaugh, E. S., & Hopkins, W. D. (1986). The evolution of communicative capacities. In W. Bechtel (Ed.), Science and philosophy: Integrating scientific disciplines (pp. 243-262). Dordrecht, The Netherlands: Martinus Nijhoff.
- Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1986). Reasoning and language in chimpanzees. In R. J. Hoage & L. Goldman (Eds.), Animal intelligence: Insights into the animal mind (pp. 57-75). Washington, DC: Smithsonian Institution Press.
- Rumbaugh, D. M., Savage-Rumbaugh, E. S., & Hegel, M. (1987). Summation in the chimpanzee (*Pan troglodytes*). Journal of Experimental Psychology: Animal Behavior Processes, 13, 107-115.
- Savage-Rumbaugh, E. S. (1987). Communication, symbolic communication, and language: A reply to Seidenberg and Petitto. Journal of Experimental Psychology: General, 116, 288-292.
- Savage-Rumbaugh, E. S. (1988). A new look at ape language: Comprehension of vocal speech and syntax. In D. Leger (Ed.), Nebraska Symposium on Motivation, 35. Lincoln, NE: University of Nebraska Press.

- Rumbaugh, D. M., Savage-Rumbaugh, E. S., & Pate, J. L. (1988). Addendum to "Summation in the chimpanzee (*Pan troglodytes*)." *Journal of Experimental Psychology: Animal Behavior Processes*, 14, 118-120.
- Savage-Rumbaugh, E. S., Hopkins, W. D., & Sevcik, R. A. (1988). Symbolic cross-modal transfer in two species of chimpanzees (*Pan troglodytes* and *Pan paniscus*). *Journal of Child Development*, 59, 617-625.
- Savage-Rumbaugh, E. S. (1988). [Review of *Apes of the world: Their social behavior, communication, mentality, and ecology*], *American Anthropologist*, 90, p. 479.
- Savage-Rumbaugh, E. S. and McDonald, K. (1988). Deception and social manipulation in symbol using apes. In R. W. Byrne & A. Whiten (Eds.), *Machiavellian Intelligence: Social Expertise and the Evolution of Intellect in Monkeys, Apes, and Humans* (pp.224-237). London: Oxford University Press.
- Savage-Rumbaugh, E. S. (1989). Mother-infant conflict: Distal or proximate causes: Comments on Plooiij & van de Rijt-Plooiij's paper. *European Journal of Psychology of Education*, 4, 193-194. (Invited commentary).
- Savage-Rumbaugh, S. (1989) Chimpanzees in the wild. [Review of: *East of the Mountains of the Moon*], *Contemporary Psychology*, 34, 666-667.
- Rumbaugh, D. M., Washburn, D., & Savage-Rumbaugh, E. S. (1989). On the care of captive chimpanzees: Methods of animal enrichment. In E. Segal (Ed.), *Housing, Care, and Psychological Well-being of Captive and Laboratory Primates* (pp. 357-375). Hillsdale, NJ: Lawrence Erlbaum.
- Savage-Rumbaugh, E. S., Ronski, M. A., Hopkins, W. D., & Sevcik, R. A. (1989). Symbol acquisition and use by *Pan troglodytes*, *Pan paniscus*, and *Homo sapiens*. In P. G. Heltne and L. A. Marquardt (Eds.) *Understanding Chimpanzees* (pp. 266-295). Cambridge, MA and London, England: Harvard University Press.
- Bolser, L. & Savage-Rumbaugh, S. (1989). Periparturitional behavior of a bonobo. *American Journal of Primatology*, 17, 93-103.
- Rumbaugh, D. M., Hopkins, W. D., Washburn, D. A., Savage-Rumbaugh, E. S. (1989). Lana chimpanzee learns to count by "Numath": A summary of a videotaped experimental report. *The Psychological Record*, 39, 459-470.
- Rumbaugh, D. M., Richardson, K. W., Washburn, D. A., Savage-Rumbaugh, E. S., & Hopkins, W. D. (1989). Rhesus monkeys (*Macaca mulatta*), video tasks, and implications for stimulus-response spatial contiguity. *Journal of Comparative Psychology*, 103 (1), 32-38.

- Savage-Rumbaugh, E. S., Brakke, K. E., and Wilkinson, K. M. (1989). Tool use in monkeys: commentary on Chevalier-Skolnikoff. Behavioral and Brain Sciences, 12, 605.
- Rumbaugh, D. M. & Savage-Rumbaugh, E. S. (1990). Chimpanzees: Competencies for language and numbers. In W. C. Stebbins & M. A. Berkley (Eds.), Comparative perception-Volume II: Complex signals (pp. 409-441.) John Wiley & Sons.
- Greenfield, P. M., & Savage-Rumbaugh, E. S. (1990). Grammatical combination in Pan paniscus: Processes of learning and invention in the evolution and development of language. In S. Parker & K. Gibson (Eds.), Comparative developmental psychology of language and intelligence in primates (pp. 540-578). New York, Cambridge University Press.
- Richardson, W. K., Washburn, D. A., Hopkins, W. D., Savage-Rumbaugh, E. S. & Rumbaugh, D. M. (1990). The NASA/LRC computerized test system. Behavior Research Methods, Instruments and Computers, 22(2), 127-131.
- Rumbaugh, D. M., Washburn, D. A., Savage-Rumbaugh, E. S. & Hopkins, W. D. (1990). The Language Research Center's Computerized Test System (LRC-CTS): Video-formatted tasks for primates. (Abstract) Proceedings and Abstracts of the Annual Meeting of the Eastern Psychological Association, 61.
- Savage-Rumbaugh, E. S. (1990). Language acquisition in a nonhuman species: Implications for the innateness debate. Developmental Psychobiology, 23(7), 1-22.
- Savage-Rumbaugh, E. S. (1990). Language as a cause-effect communication system. Philosophical Psychology, 3, 55-76.
- Savage-Rumbaugh, E. S., Sevcik, R. A., Brakke, K. E., Rumbaugh, D. M. & Greenfield, P. M. (1990). Symbols: Their communicative use, combination, and comprehension by bonobos (Pan paniscus). In Lewis P. Lipsitt, & Carolyn Rovee-Collier (Eds.), Advances in infancy research, 6 (pp. 221-278). Norwood, NJ: Ablex Publishing Corp.
- Savage-Rumbaugh, E. S., & Brakke, K. E. (1990). Animal Language: Methodological and Interpretive Issues. In M. Bekoff and D. Jamieson (Eds), Interpretation and explanation in the study of behavior: Interpretation, intentionality, and communication, Vol. 1 (pp. 313-343). Boulder, CO: Westview Press.
- Brakke, K. E., & Savage-Rumbaugh, E. S. (1991). Early postural behavior in Pan: Influences on development. Infant Behavior and Development, 14, 265-288.
- Greenfield, P. M., & Savage-Rumbaugh, E. S. (1991). Imitation, grammatical development, and the invention of protogrammar by an ape. In N. Krasnegor, D.

- M. Rumbaugh, M. Studdert-Kennedy, & R. L. Schiefelbusch, (Eds.), Biological and Behavioral Determinants of Language Development (pp. 235-258). Hillsdale, NJ: Lawrence Erlbaum.
- Hopkins, W. D., & Savage-Rumbaugh, E. S. (1991). Vocal communication as a function of differential rearing experiences in *Pan paniscus*: A preliminary report. International Journal of Primatology, 12(6), 559-583.
- Hopkins, W. D., Morris, R. D., & Savage-Rumbaugh, E. S. (1991). Evidence for asymmetrical hemispheric priming using known and unknown warning stimuli in two language-trained chimpanzees (*Pan troglodytes*). Journal of Experimental Psychology: General, 120(1), 46-56.
- Rumbaugh, D. M., Hopkins, W. D., Washburn, D. A., Savage-Rumbaugh, E. S. (1991). Comparative perspectives of brain, cognition, and language. In N. Krasnegor, D. M. Rumbaugh, M. Studdert-Kennedy, & R. L. Schiefelbusch (Eds.), Biological and behavioral determinants of language (pp. 145-160). Hillsdale, NJ: Lawrence Erlbaum.
- Rumbaugh, D. M., Washburn, D. A., Hopkins, W. D., & Savage-Rumbaugh, E. S. (1991). Chimpanzee counting and rhesus monkey ordinality judgments. Primate Today, 701-702. Elsevier Science Publishers.
- Rumbaugh, D. M., Washburn, D. A., Savage-Rumbaugh, E. S., Hopkins, W. D., & Richardson, W. K. (1991). Language Research Center's Computerized Test System (LRC-CTS): Video-formatted tasks for comparative primate research. Primate Today, 325-328. Elsevier Science Publishers.
- Savage-Rumbaugh, E. S. (1991). Multi-tasking: the Pan-human rubicon. The Neurosciences, 3, pp. 417-422.
- Savage-Rumbaugh, E. S. (1991). Language learning in the bonobo: How and why they learn. In N. Krasnegor, D. M. Rumbaugh, M. Studdert-Kennedy, & R. L. Schiefelbusch (Eds.), Biological and behavioral determinants of language development (pp. 209-233). Hillsdale, NJ: Lawrence Erlbaum.
- Hopkins, W. D., Morris, R. D., Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1992). Hemispheric priming by meaningful and nonmeaningful symbols in language-trained chimpanzees (*Pan troglodytes*): Further evidence of a left hemisphere advantage. Behavioral Neuroscience, 106(3): 575-582.
- Greenfield, P. M., & Savage-Rumbaugh, S. (1992). Comparing the ontogeny of symbol use in *Pan paniscus* and *Homo sapiens*. Bulletin of the Chicago Academy of Sciences, 15(1), 26. (Abstract).
- Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1992). Cognitive competencies:

- Products of genes, experience, and technology. In T. Nishida, W. C. McGrew, P. Marler, M. Pickford, & Frans B. M. de Waal (Eds.), Topics in primatology, Vol. 1, Human origins (pp. 293-304). Tokyo, Japan: University of Tokyo Press.
- Savage-Rumbaugh, E. S. (1992). Language training of apes. In S. Jones, R. Martin, & D. Pilbeam (Eds.), The Cambridge encyclopedia of human evolution (pp. 138-141). Hillsdale, NJ: Erlbaum.
- Savage-Rumbaugh, E. S. (1992). Language from Pan to man. Bulletin of the Chicago Academy of Sciences 15(1): 23 (Abstract).
- Savage-Rumbaugh, E. S., Brakke, K. E., & Hutchins, S. S. (1992). Linguistic development: Contrasts between co-reared Pan troglodytes and Pan paniscus. In T. Nishida, W. C. McGrew, P. Marler, M. Pickford, & F. B. M. deWaal (Eds.), Topics in primatology: Vol 1, Human origins (pp. 51-66). Tokyo, Japan: University of Tokyo Press.
- Savage-Rumbaugh, E. S. & Rubert, E. (1992). Language comprehension in ape and child: Evolutionary implications. In Y. Christen & P. S. Churchland (Eds.), Neurophilosophy and Alzheimer's disease (pp. 30-48). Springer-Verlag, Berlin: Foundation Ipsen Pour la Recherche Scientifique.
- Greenfield, P. M., & Savage-Rumbaugh, E. S. (1993). Comparing communicative competence in child and chimp: The pragmatics of repetition. Journal of Child Language, 20, 1-26.
- Rumbaugh, D. M., Hopkins, W. D., Washburn, D. A. & Savage-Rumbaugh, E. S. (1993). Chimpanzee competence for counting in a video-formatted task situation. In H. Roitblat, L. M. Herman, & P. E. Nachtigall (Eds.), Language and communication: Comparative perspectives (pp. 329-346). Hillsdale, NJ: Lawrence Erlbaum.
- Savage-Rumbaugh, E. S. (1993). Language learnability in man, ape, and dolphin. In H. Roitblat, L. M. Herman, & P. E. Nachtigall (Eds.), Language and communication: Comparative perspectives (pp. 457-484). Hillsdale, NJ: Lawrence Erlbaum.
- Savage-Rumbaugh, E. S. (1993). How does evolution design a brain capable of learning language?: A Reply. Monographs of the Society for Research in Child Development, Serial No. 233, Vol. 58, 3-4, pgs. 243-252.
- Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1993). The emergence of language. In K. R. Gibson & T. Ingold (Eds.), Tools, language and cognition in human evolution (pp. 86-108). Cambridge University Press.
- Savage-Rumbaugh, E. S., Murphy, J., Sevcik, R. A., Rumbaugh, D. M., Brakke, K. E., & Williams, S. (1993). Language comprehension in ape and child. Monographs of

the Society for Research in Child Development, Serial No. 233, Vol. 58, Nos. 3-4, pgs. 1-242.

- Tomasello, M., Savage-Rumbaugh, E. S., & Kruger, A. C. (1993). Imitative learning of action on objects by children, chimpanzees, and educated chimpanzees. Child Development, 64, 1688-1705.
- Toth, N., Schick, K. D., Savage-Rumbaugh, E. S., Sevcik, R. A., & Rumbaugh, D. M. (1993). Pan the tool-maker: Investigations into the stone tool-making and tool-using capabilities of a bonobo (*Pan paniscus*). Journal of Archaeological Science, 20, 81-91.
- Williams, S., & Savage-Rumbaugh, E. S. & Rumbaugh, D. M. (1993). Apes and language. In R. E. Asher & J. M. Y. Simpson (Eds), Encyclopedia of Language and Linguistics, Vol 1, (pp. 139-146). New York: Pergamon Press.
- Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1994). Language and apes. The Psychology Teacher Network, 4(1), 2-9.
- Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1994). Language in comparative perspective. In N. J. Mackintosh (ed.), Animal Learning and Cognition (pp. 307-333). New York: Academic Press.
- Rumbaugh, D. M., Savage-Rumbaugh, E. S., & Sevcik, R. A. (1994). Biobehavioral roots of language: A comparative perspective of chimpanzee, child and culture. In R. W. Wrangham, W. C. McGrew, F. B.M. deWaal, & P. G. Heltne (Eds), Chimpanzee Cultures (pp. 319-334). Cambridge, MA: Harvard University Press in cooperation with The Chicago Academy of Sciences.
- Rumbaugh, D. M., Savage-Rumbaugh, E. S., & Washburn, D. A. (1994). Learning, prediction and control with an eye to the future. In M. M. Haith, J. B. Benson, R. J. Roberts, Jr., & B. F. Pennington (Eds.), The Development of Future-Oriented Processes (pp 119-138). Chicago, IL: University of Chicago Press.
- Savage-Rumbaugh, E. S. (1994). Hominid evolution: Looking to modern apes for clues. In D. Quiatt and J. Itani (Eds), Hominid Culture in Primate Perspective (7-49). Niwot, CO: University Press of Colorado.
- Sevcik, R. A., & Savage-Rumbaugh, E. S. (1994). Language comprehension and use by great apes. Language & Communication, 14,(1), 37-58.
- Brakke, K. E., & Savage-Rumbaugh, E. S. (1995). The development of language skills in bonobos and chimpanzees: I. Comprehension. Language and Communication, 15,(2), 121-148.
- Carpenter, M., Tomasello, M., & Savage-Rumbaugh, E.S. (1995). Joint attention and

- imitative learning in children, chimpanzees and enculturated chimpanzees. Social Development, 4, 217-237.
- Visalberghi, E., Frigaszy, D. M., & Savage-Rumbaugh, E. S. (1995). Performance in a tool-using task by common chimpanzees (*Pan troglodytes*), bonobos (*Pan paniscus*), an orangutan (*Pongo pygmaeus*), and capuchin monkeys (*Cebus apella*). Journal of Comparative Psychology, 109(1), 52-60.
- Beran, M. J., Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1996). Performance of a chimpanzee (*Pan troglodytes*) on a computerized counting task [abstract]. XVIth Congress of the International Primatological Society and XIXth Conference of the American Society of Primatologists, No. 315.
- Brakke, K. E. & Savage-Rumbaugh, E. S. (1996). The development of language skills in Pan: II. Production. Language and Communication, 16(4), 361-380.
- Langs, R., Badalamenti, A., Savage-Rumbaugh, E. S. (1996). Two mathematically defined language structures in humans and chimpanzees. Behavioral Science Journal of the International Society for the Systems Science, 41(2), 124-135.
- Rumbaugh, D. M. & Savage-Rumbaugh, E. S. (1996) Biobehavioral roots of language: Words, apes, and a child. In B. M. Velichkovsky & D. M. Rumbaugh (Eds.), Communicating meaning: The evolution and development of language (pp. 257-274). Mahwah, NJ: Lawrence Erlbaum Associates.
- Rumbaugh, D., Savage-Rumbaugh, E. S., & Washburn, D. (1996). Toward a new outlook on primate learning and behavior: Complex learning and emergent processes in comparative perspective. Japanese Psychological Research, 38(3) 113-125.
- Savage-Rumbaugh, E. S. & Rumbaugh, D. M. (1996). Primate intelligence and language: Brain and environment [abstract]. XVIth Congress of the International Primatological Society and XIXth Conference of the American Society of Primatologists, No. 740.
- Savage-Rumbaugh, E. S., Shanker, S., Taylor, T. J. (1996). Apes with language. Critical Quarterly, 38(3), 45-57.
- Savage-Rumbaugh, E. S., Williams, S. L., Furuichi, T., Kano, T. (1996). Language perceived: *Paniscus* branches out. In W. C. McGrew, L. F. Marchant & T. Nishida (Eds), Great Ape Societies (pp. 173-184). New York, NY: Cambridge University Press.
- Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1997). A comparative perspective on the etiology of meaning and assaying behaviors for meaning. In C. Mandell & A. McCabe (Eds.), The problem of meaning: Behavioral and cognitive perspectives. (pp. 147-179). Amsterdam, The Netherlands: Elsevier Science B.V.

- Savage-Rumbaugh, S. (1997). P-Suke has become a father. Monkey, 41-4, No. 276, 14-17. Inuyama, Aichi, Japan: Japan Monkey Centre (Japanese).
- Savage-Rumbaugh, S. (1997). Why are we afraid of apes with language? In A. B. Scheibel & J. W. Schopf (Eds.) The Origin and Evolution of Intelligence (pp. 43-69). Sudbury, MA: Jones and Bartlett.
- Savage-Rumbaugh, E. S. (1997). [Review of the book Mutualities in Dialogue]. International Journal of Primatology, 18(5), 847-853.
- Williams, S. L., Brakke, K. E., & Savage-Rumbaugh E. S. (1997). Comprehension skills of language-competent and non-language-competent apes. Language and Communication, 17(4), 301-317.
- Menzel, C. R., Savage-Rumbaugh, E. S., & Menzel, E. W., Jr (1997). Chimpanzee (*Pan paniscus*) spatial memory and communication in a 20-hectare forest. American Journal of Primatology, 42(2), 134. (Abstract).
- Williams, S. L., Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1997). Apes and language. In P. V. Lamarque (Ed.) Concise encyclopedia of philosophy of language. Oxford, England: Elsevier Science LTD.
- Beran, M. J., Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1998). Chimpanzee (*Pan troglodytes*) counting in a computerized testing paradigm. The Psychological Record, 48, 3-19.
- Beran, M.J., Savage-Rumbaugh, E.S., Brakke, K.E., Kelley, J.W., & Rumbaugh, D.M. (1998). Symbol comprehension and learning: A "vocabulary" test of three chimpanzees (*Pan troglodytes*). Evolution of Communication, 2, 171-188.
- King, J. E., Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1998). Evolution of intelligence, language, and other emergent processes for consciousness: A comparative perspective. In S. J. Hameroff, A. W. Kaszniak, & A. C. Scott (Eds.) Toward a science of consciousness II: The second Tucson discussions and debates (pp. 383-395). Cambridge, MA: MIT Press.
- Lyn, H., Savage-Rumbaugh, E. S., & Rumbaugh, D. (1998). Observational word learning in bonobos (*Pan paniscus*). American Journal of Primatology, 45(2), 193. (Abstract).
- Savage-Rumbaugh, E. S. (1998). Scientific schizophrenia with regard to the language act. In J. Langer and M. Killen (Eds.) Piaget, evolution and development (pp. 145-169). Hillsdale, N.J.: Lawrence Erlbaum and Associates.
- Savage-Rumbaugh, E. S. and Fields, W. M. (1998). Language and Culture: A Trans-

Generation Interweaving. Language Origins Society, 27, 19-41.

- Savage-Rumbaugh, E. S. & Rumbaugh, D. M. (1998). Perspectives on consciousness, language, and other emergent processes in apes and humans. In S. J. Hameroff, A. W. Kaszniak, & A. C. Scott (Eds.) Toward a science of consciousness II: The second Tucson discussions and debates (pp. 533-549). Cambridge, MA: MIT Press.
- Beran, M. J., Savage-Rumbaugh, E. S., Pate, J. L., & Rumbaugh, D. M. (1999). Delay of gratification in chimpanzees (*Pan troglodytes*). Developmental Psychobiology, 34, 119-127.
- King, J.E., Rumbaugh, D., & Savage-Rumbaugh, E.S. (1999) Perception of personality traits and semantic learning in evolving hominids. In M.C. Corballis & S.E.G. Lea (Eds.) The Descent of Mind: Psychological perspectives on hominid evolution (pp. 98-115) New York: Oxford University Press.
- Poti, P., Langer, J., Savage-Rumbaugh, E.S., & Brakke, K. E. (1999). Spontaneous logicomathematical constructions by chimpanzees (*Pan troglodytes*, *P. paniscus*). Animal Cognition, 2, 147-156.
- Rilling, J., Kilts, C., Williams, S.L., Kelley, J.W., Beran, M.J., Giroux, M., Hoffman, J.M., Savage-Rumbaugh, E.S., & Rumbaugh, D.M. (1999). Functional neuroimaging of linguistic processing in chimpanzees. Society for Neuroscience Abstracts, 25(2), 2170.
- Rumbaugh, D. and Savage-Rumbaugh, E.S. (1999). Primate language. In R. A. Wilson & F. C. Keil (Eds.) The MIT Encyclopedia of the Cognitive Sciences (pp. 669-671). Cambridge, MA: The MIT Press.
- Rumbaugh, D. M. & Savage-Rumbaugh, E. S. (1999). Language, nonhuman. In G. Adelman & B. Smith (Eds.) Encyclopedia of Neuroscience. Amsterdam, The Netherlands: Elsevier Science.
- Savage-Rumbaugh, E. S. (1999). Ape language: Between a rock and a hard place. In B. King (Ed), Origins of language: What nonhuman primates can tell us. Santa Fe, NM: School of American Research Press.
- Savage-Rumbaugh, E.S. and Fields, W.M. (1998). "Language and Culture: A Trans-Cultural Interweaving." Language Origins Society, 28,4-14.
- Schick, K. D., Toth, N., Garufi, G., Savage-Rumbaugh, E. S., Rumbaugh, D. M., & Sevcik, R. A. (1999). Continuing investigations into the stone tool-making and tool-using capabilities of a Bonobo (*Pan paniscus*). Journal of Archaeological

Science, 26, 821-832.

- Lyn, H., & Savage-Rumbaugh, E. S. (2000). Observational word learning in two bonobos (*Pan paniscus*): ostensive and non-ostensive contexts. Language & Communication, 20, 255-273.
- Menzel, C. R., Savage-Rumbaugh, E. S., & Menzel, Jr., E. W. (2000). Primate geometry, Cognitive Processing, 1, 93 (Abstract).
- Minahan, M. F., Beran, M. J. & Savage-Rumbaugh, E. S. (2000). Object permanence in bonobos (*Pan paniscus*) and chimpanzees (*Pan troglodytes*). American Journal of Primatology, Vol. 51, Supplement 1, pp75 (Abstract).
- Savage-Rumbaugh, E. Sue. and Fields, William M. (2000). [Review of the book The Cultural Origins of Human Cognition] American Anthropologist, 102(4), 925-926.
- Savage-Rumbaugh, E. Sue. and Fields, William M. (2000). Linguistic, Cultural and Cognitive Capacities of Bonobos (*Pan paniscus*). Culture & Psychology, Vol. 6(2), 131-153.
- Savage-Rumbaugh, E. S. Fields, W. M., & Taglialatela, J. (2000). Ape Consciousness – Human Consciousness: A Perspective Informed by Language and Culture. American Zoologist, 40, No. 6, 910-921.
- Taglialatela, J. P. & Savage-Rumbaugh, E. S. (2000) Vocalization production and usage in language competent, captive bonobos (*Pan paniscus*). American Journal of Primatology, 51, Supplement 1, 95 (Abstract).
- Rumbaugh, D. M., Savage-Rumbaugh, E. S., & Beran, M. J. (2001). The grand apes. In B. B. Beck, T. S. Stoinski, M. Hutchins, T. L. Maple, A. Rowan, B. F. Stevens, & A. Arluke, (Eds.), Great apes & humans: The ethics of coexistence (pp. 245-260). Washington, DC: Smithsonian Institution Press.
- Savage-Rumbaugh, S., Fields, W. M., Taglialatela, J. P. (2001). Language, speech, tools and writing: A cultural imperative. Journal of Consciousness Studies, 8, Nos. 5-7, 273-92.
- Benson, J., Fries, P., Greaves, W., Iwamoto, K., Savage-Rumbaugh, S. & J. Taglialatela. (2002). "Confrontation and support in bonobo-human discourse." Functions of Language, 9(1), 1-38.
- Fields, W.M., & Savage-Rumbaugh, S. (2002). "Rules, and Tools: Beyond Anthropomorphism: A qualitative report on the stone tool manufacture and use by captive bonobos Kanzi and Panbanisha." In N. Toth's Craft Institute Oldowan Technologies, 1(1).

- Menzel, C. R., Savage-Rumbaugh, E. S., & Menzel, E. W. (2002). Bonobo (*Pan paniscus*) spatial memory and communication in a 20-hectare forest. International Journal of Primatology, Vol 23, No 3, 601-619.
- Rumbaugh, D. M., Savage-Rumbaugh, E. S., & Taglialatela, J. P. (2002). Language learning: Nonhuman primates. In J. H. Byrne (Ed.) Learning & Memory, 2ed. (pp. 314-317). New York: Macmillan.
- Savage-Rumbaugh, S., Fields, W. (2002). "Hacias el control denuevas realidades." Quark, 25, 20-26.
- Rumbaugh, D. M. and Savage-Rumbaugh, E. S. (2002). Language and animal competencies. In N. J. Smelser & P. B. Baltes (Eds.) International Encyclopedia of the Social and Behavioral Sciences. Amsterdam: Elsevier Science Ltd.
- Taglialatela, J. P. , Savage-Rumbaugh, E.S., & Baker, L. A. (2002). Vocal production by a language-competent Pan Paniscus. International Journal of Primatology, 24(1), 1-17.
- Fields, W. M., & Savage-Rumbaugh, S. (2003). Measuring consciousness: A crazy theory, but not crazy enough! [Review of the book A Mind So Rare: The Evolution of Human Consciousness]. Contemporary Psychology, 48(5), 596-598.
- Rumbaugh, D.M., Beran M.J., & Savage-Rumbaugh, E. S. (2003). Language. In D. Maestriperi (Ed.), Primate Psychology (pp. 395-423). Cambridge, MA: Harvard University Press.
- Rumbaugh, D.M., Savage-Rumbaugh, E.S., & Taglialatela, J. P. (2004). Language, non-human. Encyclopedia of Neuroscience, 3rd Edition. New York: Elsevier Sciences.
- Savage-Rumbaugh, S., Fields, W.M., & Spircu, T. (2004). The Emergence of Knapping and Vocal Expression Embedded in a Pan/Homo Culture. Journal of Biology and Philosophy, 19(4), 541-575.
- Taglialatela, J. P., Savage-Rumbaugh, E. S., Rumbaugh, D. M., Benson, J., & Greaves, W. (2004). Language, apes, and meaning-making. In G. William & A. Lukin (Eds.) Development of Language: Functional Perspectives on Evolution and Ontogenesis (pp. 91-111). London: The Continuum International Publishing Group.
- Benson, J.D., Debashish, M., Greaves, W.S., Lukas, J., & E.S. Savage-Rumbaugh. (2005) "A methodology for phonemic analysis of vocalization of language competent bonobos." In J. D. Benson & W. S. Greaves (Eds.) Functional Dimensions of Ape-Human Discourse, Equinox Press.

- Savage-Rumbaugh, E.S, Segerdahl, P. and Fields, W. M. (2005) "Individual differences in language competencies in apes resulting from unique rearing conditions imposed by different first epistemologies." In L. L. Namy (Ed.) *Symbol Use and Symbolic Representation* (pp. 199-219). Mahwah, NJ: Lawrence Erlbaum Associates.
- Savage-Rumbaugh, S., Fields, W.M., Segerdahl, P., & D.M. Rumbaugh. (2005) "Culture prefigures cognition in Pan/Homo Bonobos." *Theoria* 20(3).
- Savage-Rumbaugh, E. S., Toth, N., Schick, K. (2005) Kanzi learns to knap stone tools. In *Emergents and Rational Behaviorism: Essays in Honor of D. M. Rumbaugh*. Ed. By David A. Washburn,
- Savage-Rumbaugh, S., Rumbaugh, D.M. & W.M. Fields. (2006) "Language as a Window on the Cultural Mind." In S. Hurley (Ed.) *Rational Animals*, Oxford: Oxford University Press.
- Lyn, Greenfield, and Savage-Rumbaugh (2006) The development of representational play in chimpanzees and bonobos: Evolutionary implications, pretense and the role of inter-species communication. *Cognitive Development*, 21, 199-213.
- Savage-Rumbaugh, S. & Fields, W.M. (2007) "Rules and Tools: Beyond Anthropomorphism: A qualitative report on the stone tool manufacture and use by captive bonobos Kanzi and Panbanisha." In N. Toth's Craft Institute Oldowan Technologies 1(1).
- Fields, W.M., Segerdahl, P., & Savage-Rumbaugh, E.S. (2007) "The Material Practices of Ape Language." In J. Valsiner (Ed.) *The Cambridge Handbook of SocioCultural Psychology*.
- Savage-Rumbaugh, E. S., Wamba, K., Wamba, P., and Wamba, N. (2007) Welfare of Apes in Captive Environments: Comments On, and By, a Specific Group of Apes. *Journal of Applied Animal Welfare Science*, V. 10, N.1., pp. 7-19.
- Rumbaugh, D. M., E. S. Savage-Rumbaugh, & Taglialatela, J. (2007). (L. Squire, ed.) Language Nonhuman Animals. *The New Encyclopedia of Neuroscience*. New York: Elsevier.
- Greenfield, P., Lyn, H., and Savage-Rumbaugh, E. S. (2008) Protolanguage in ontogeny and phylogeny: Combining deixis and representation. *Interaction Studies*, V. 9, No. 1, pp. 34-50.
- Lyn, H., Franks, B., Savage-Rumbaugh, E. S. (2008). Precursors of morality in the use of the symbols "good" and "bad" in two bonobos (*Pan paniscus*) and a chimpanzee (*Pan troglodytes*). *Language and Communication*, V. 28, 213-224.
- Ragir, S. and Savage-Rumbaugh, E. S. (2009) Playing with meaning: normative function

and structure in play. In R. Botha and C. Knight, *The Prehistory of Language: Studies in the Evolution of Language*. Oxford University Press. (pp. 122-141).

Savage-Rumbaugh, E.S., Rumbaugh, D.M., & Fields, W.M. (2009) "Empirical Kanzi: The ape language debate revisited." *The Skeptic* v 15(1).

In Press

Savage-Rumbaugh, E. S., D. M. Rumbaugh, J. E. King, J. Tagliatella (in press). Foundations of language in a Festschrift volume for Prof. Holloway, Stone Age Institute, Indiana University

Savage-Rumbaugh, E.S., & Fields, W.M. (in press) "Maternal care, self agency, moral agency, epigenetics and culture: Implications for the rise of language in *Homo symbolicus* and *Pan symbolicus*." Volume from the Homo Symbolicus Conference.

Lyn, Greenfield, and Savage-Rumbaugh (in press) Semiotic Combinations in *Pan*: A Comparison of Communication in a Chimpanzee and Two Bonobos. *First Language*

Rumbaugh, D. M., Hillix, A., & Savage-Rumbaugh, E. S. (in press). The emergence of reason, intelligence, and language by humans and animals. *Yale Journal of Criticism*.

PRESENTATIONS

Presentations 1978

Savage-Rumbaugh, E. S. (1978, Fall). Symbolic communication between chimpanzees. Invited seminar speaker, Swarthmore College, Swarthmore, PA.

Savage-Rumbaugh, E. S. (1978, Fall). Tool-use and symbolic communication in the chimpanzee. Invited seminar speaker, Princeton University, Princeton, NJ.

Savage-Rumbaugh, E. S. (1978, Fall). Symbol acquisition in apes: A discussion of the

paradigms. Invited seminar speaker, Rockefeller University, NY.

Presentations 1980

Savage-Rumbaugh, E. S. (1980, January). The status of chimpanzee language research. Invited seminar speaker, Kenyon College, Gambier, OH.

Savage-Rumbaugh, E. S. (1980, May). Straight from the horse's mouth. Paper presented at Conference on Clever Hans Phenomenon: Communication with horses, whales, apes, and people, New York Academy of Sciences.

Savage-Rumbaugh, E. S. (1980, November). Ape language research. Invited speaker, Georgia chapter of Sigma Xi.

Presentation 1981

Savage-Rumbaugh, E. S. (1981, February). Emergence of communication skills in two chimpanzees. Invited seminar speaker, Department of Anthropology and the Center for Cognitive Studies, University of Chicago.

Savage-Rumbaugh, E. S. (1981, November). Levels of Communicative symbol use: Prerepresentational and representational. Invited presentation at the T. C. Schneirla Conference on Developmental Genetics and Learning, Wichita, KS.

Savage-Rumbaugh, E. S. (1981, November). Ape language research: Update and clinical implications. Short course presented at the Annual Meeting of the American Speech-Language-Hearing Association, Los Angeles, CA.

Presentations 1982

Savage-Rumbaugh, E. S. (1982, March). Language behaviors of humans and apes -- pigeons, too? Discussant for symposium at the annual meeting, Southeastern Psychological Association, New Orleans, LA.

Savage-Rumbaugh, E. S. (1982, May). Behavioral similarities of chimpanzees and pigeons: Superficial or real? Invited speaker, Meeting of the Association for Behavior Analysis, Milwaukee, WI.

Savage-Rumbaugh, E. S. (1982, June). Acquisition of functional symbol usage in apes and children. Invited speaker, Harry Frank Guggenheim Conference on Animal Cognition, Columbia University, NY.

Romski, M. A., White, R. A., and Savage-Rumbaugh, E. S. (1982, June). Language training using communication boards: some special considerations. Presented at the annual meeting, American Association on Mental Deficiency, Boston, MA.

Savage-Rumbaugh, E. S. and Rumbaugh, D.M. (1982, August). Referential symbol skills of two chimpanzees. Paper presented at the Congress of the International

Primatological Society, Atlanta, GA.

Savage-Rumbaugh, E. S. (1982, November). Primate communication and language. Invited speaker, Symposium on Human Origins, University of Alabama, Birmingham, AL.

Presentations 1983

Pate, J. L. and Savage-Rumbaugh, E. S. (1983, March). Does a chimpanzee know what it is saying? Presented at the annual meeting, Southeastern Psychological Association, Atlanta, GA.

Savage-Rumbaugh, E. S. (1983, May). Verbal behavior in the chimpanzee. Invited address, Association for Behavioral Analysis, Milwaukee, WI.

Savage-Rumbaugh, E. S. (1983, June). Ape language and the issue of intentional communication. Keynote speaker, Annual Meeting of the Animal Behavior Society, Lewisburg, PA.

Savage-Rumbaugh, E. S. (1983, June). Chimpanzee Language Learning: Current Status. Invited presentation at the conference on Dolphin behavior and cognition: Comparative and ecological aspects. Target papers, ONR sponsored conference, Hubbs-Sea World Research Institute, San Diego, CA.

Savage-Rumbaugh, E. S. (1983, August). Language: A continuum from ape to human. Invited paper at the Symposium of the American Psychological Association, Anaheim, CA.

Savage-Rumbaugh, E. S. (1983, September). Ape language from a behavioral perspective. Paper presented at an Invitational Conference on Research Paradigms, coordinated by the National Institute of Child Health and Human Development, Washington, D. C.

Savage-Rumbaugh, E. S. (1983, November). Comparisons of preverbal competency between Pan troglodytes and Pan paniscus. Invited paper presented at Symposium on the pygmy chimpanzee, International Primatological Conference, Atlanta, GA.

Savage-Rumbaugh, E. S. (1983, December). Apes, language, and what their accomplishments have to say to human beings. Keynote Speaker, Women in Science Symposium, Kennesaw College, Kennesaw, GA.

Presentations 1984

Savage-Rumbaugh, E. S. (1984, January). Do apes really talk? Invited speaker, Biological Sciences Symposium, University of Georgia, Athens, GA.

Savage-Rumbaugh, E. S. (1984, May). Contrasts in symbolic communicative competency in Pan troglodytes and Pan paniscus. Invited paper presented at Association of Behavioral Analysis, Nashville, TN.

Savage-Rumbaugh, E. S. (1984, May). Language acquisition in the great apes: And overviews. Paper presented at the Conference for the Integration of the Sciences, Georgia State University, Atlanta, GA.

Savage-Rumbaugh, E. S. (1984, June). The capacity of animals to acquire language -- Do species differences have anything to say to us? Invited paper presented at the Royal Society of England, London.

Presentations 1985

Savage-Rumbaugh, E. S. (1985, May). Language acquisition and cognition in the chimpanzee. Invited symposium speaker, Rutgers Symposium on Animal Cognition, New Brunswick, NJ.

Savage-Rumbaugh, E. S. (1985, June). Language acquisition in two species of apes. Keynote speaker, Annual Scientific Meeting of the American Society of Primatologists, University of Buffalo, State University of New York, Niagara Falls, NY.

Savage-Rumbaugh, E. S. (1985, August). Language learning without training in the pygmy chimpanzee. Invited symposium speaker, American Psychological Association, Division of Experimental Psychology, Los Angeles, CA.

Presentations 1986

Savage-Rumbaugh, E. S. (1986, January). Language acquisition and nonverbal behavior in apes. Invited speaker, Emory Anthropology Department, Atlanta, GA.

Savage-Rumbaugh, E. S. (1986, February). The implications of ape language studies for Philosophy and Biology. Invited keynote speaker at the "Can Philosophy Help Biology... and vice versa" conference, University of Georgia, Athens GA.

Savage-Rumbaugh, E. S. (1986, March). Language learning and English comprehension in the pygmy chimpanzee. Invited speaker, Behavioral Biology Seminar Series, Rockefeller University, NY.

Savage-Rumbaugh, E. S. (1986, March). The pygmy chimpanzee learns to use and comprehend symbols without training. Invited speaker, Class of 1902 Lecture Series, Bryn Mawr, NY.

Savage-Rumbaugh, E. S. (1986, June). Comprehension of spoken English and synthesized speech in a pygmy chimpanzee (Pan paniscus). Presented at the eighth annual meeting, American Society of Primatologists, Austin, TX.

Brakke, K. E., Savage-Rumbaugh, E. S., McDonald, K., & Hopkins, W. D. (1986, June). A comparative analysis of symbol acquisition in two pygmy chimpanzees (Pan paniscus). Paper presented at the Eighth Annual Meeting, American Society of

Primatologists, Austin, TX.

Hopkins, W. D., & Savage-Rumbaugh, E. S. (1986, June). Vocal communication in the pygmy chimpanzee (*Pan paniscus*) as a result of differential rearing experiences. Paper presented at the Eighth Annual Meeting, American Society of Primatologists, Austin, TX.

Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1986, June). Summation in the chimpanzee. Paper presented at the Eighth Annual Meeting, American Society of Primatologists, Austin, TX.

Sevcik, R. A., Savage-Rumbaugh, E. S., & McDonald, K. (1986, June). Video experience and symbol acquisition in a pygmy chimpanzee (*Pan paniscus*). Paper presented at the Eighth Annual Meeting of the American Society of Primatologists, Austin, TX.

Greenfield, P. M. and Savage-Rumbaugh, E. S. (1986, July). Imitation is not rote: Pragmatics of repetition in child and chimpanzee. Presented at the XIth Congress of the International Primatological Society, Gottingen, West Germany.

Savage-Rumbaugh, E. S., Ronski, M. A., Hopkins, W. D., & Sevcik, R. A. (1986, November). Species differences in language acquisition and use. Invited presentation at the Chicago Academy of Science Conference, "Understanding Chimpanzees," Chicago, IL.

Presentations 1987

Savage-Rumbaugh, E. S. (1987, March). A new look at ape language: Comprehension of vocal speech and syntax. Invited speaker at the 35th Annual Nebraska Symposium on Motivation, "Comparative Perspectives in Modern Psychology," University of Nebraska, Lincoln, NE.

Savage-Rumbaugh, E. S. (1987, April). Contrasts in symbol acquisition between pygmy chimpanzees. Invited speaker, Biennial Meeting of the Society for Research in Child Development, Baltimore, MD.

Hopkins, W. D., Rumbaugh, D. M., Savage-Rumbaugh, E. S. and Washburn, D. A. (1987, June). Learning strategies in the acquisition of counting behavior in a chimpanzee. Presented at the annual meeting of the American Society of Primatologists, Madison, WI.

Sevcik, R. A., Ronski, M. A., & Savage-Rumbaugh, E. S. (1987, November). Role of comprehension in symbol acquisition: Evidence from special populations. Mini-seminar presented for the Meeting of the American Speech-Language-Hearing Association, New Orleans, LA.

Presentations 1988

- Savage-Rumbaugh, E. S. (1988, March). Where language studies of apes have come from, where they are now, and where they are going. Invited speaker, History and Philosophy of Science Series, Franklin and Marshall College, Lancaster, PA.
- Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1988, April). Counting and protoarithmetic competencies of chimpanzees (Pan troglodytes). Paper presented at the Eightieth Annual Meeting of the Southern Society for Philosophy and Psychology, Miami, FL.
- Savage-Rumbaugh, E. S. (1988, April). Some of our best friends are chimps. Invited speaker, DeKalb GSU Alumni Program, Atlanta, GA.
- Savage-Rumbaugh, E. S. (1988, May). Language comprehension is key to referential language production in chimps and retarded children. Invited speaker, Animal Language and Communication Series, San Diego State University, San Diego, CA.
- Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1988, June). Language skills of chimpanzees and bonobos. Invited speakers, National Institute of Child Health and Development Conference, Bethesda, MD.
- Savage-Rumbaugh, E. S. (1988, August). Speech comprehension with semantic content by the bonobo. Paper presented at the Annual meeting of the American Psychological Association, Atlanta, GA.
- Sevcik, R. A., Savage-Rumbaugh, E. S., Ronski, M. A. (1988, August). Symbolic communication by apes and humans: A longitudinal comparative perspective. Poster session presented at the Annual meeting of the American Psychological Association, Atlanta, GA.
- Savage-Rumbaugh, E. S. (1988, October). Invited Speaker, Psychological Sciences Program Seminar, Georgia State University, Atlanta, GA.
- Savage-Rumbaugh, E. S. (1988, November). Methods of measuring language comprehension in apes. Invited Speaker, Emory program in cognition and development, Emory University, Atlanta, GA.
- Savage-Rumbaugh, E. S. (1988, November). Why apes talk and what they have to say. Invited Speaker, Concordia University, Montreal, Canada.

Presentations, 1989

- Savage-Rumbaugh, E. S. (1989, April). Language: Our erroneous but cherished preconceptions. Invited lecture at the Animal Language Workshop, University of Hawaii at Manoa.
- Savage-Rumbaugh, E. S. (1989, February). Language learning: A capacity unique to

Homo sapiens? Invited lecture, Georgia State University Department of Anthropology, Atlanta, GA.

Savage-Rumbaugh, E. S. (1989, April). Invited seminar on Psychobiology of Animal Cognition, Columbia University, New York.

Savage-Rumbaugh, E. S., Brakke, K. E., Sevcik, R. A. (1989, June 10-11). Comparative language acquisition in apes. Poster presented at the First annual meeting of the American Psychological Society, Alexandria, VA.

Bolser Gilmore, L., Savage-Rumbaugh, S. (1989, June 15-17). Reproductive and delivery behavior of a bonobo (Pan paniscus). Poster and videotape presented at the Fertility in Great Apes Conference, Atlanta, GA.

Brakke, K., Savage-Rumbaugh, E. S. (1989, August 10-12). Speech Comprehension in Infant Bonobo (Pan paniscus) and Chimpanzee (Pan troglodytes). Paper presented at the fifth annual meeting of the Language Origins Society, University of Texas, Austin, TX.

Savage-Rumbaugh, E. S. (1989, September). Site visit committee member, National Institute of Child Health and Human Development.

Savage-Rumbaugh, E. S. (1989, October). Invited lecture, Oglethorpe University, Atlanta, Georgia.

Savage-Rumbaugh, E. S. and Rumbaugh, D. (1990, March 16-24). The invention of language. Invited paper presented at the Wenner-Gren Foundation for Anthropological Research, Cascais, Portugal.

Presentations, 1990

Brakke, K. E. & Savage-Rumbaugh, E. S. (1990, March 29-31). Comparative motor and manipulatory development: Behavior growth in infant human and apes. Poster presented at the 11th Biennial Conference on Human Development hosted within the Southeastern Region of the United States, Richmond VA.

Rumbaugh, D. M., Washburn, D. A., Savage-Rumbaugh, E. S. & Hopkins, W. D. (1990, March 29-April 1). The Language Research Center's Computerized Test System (LRC-CTS): Video-formatted tasks for primates. Paper presented at the Eighty-Second Annual Meeting of the Southern Society for Philosophy and Psychology.

Savage-Rumbaugh, E. S., (1990, April 17). Ape Minds: What are they in the Chimpanzee, Dialogue Series. Institute for Disabilities Studies, University of Minneapolis, Minneapolis, MN.

Savage-Rumbaugh, S., Ronski, M.A., Rumbaugh, D. (1990, April 18-21). Comprehension versus Production: How is Language Learned? Invited paper

presented at the 23rd Annual Gatlinburg Conference on Research and Theory in Mental Retardation and Developmental Disabilities, Brainerd, MN.

Savage-Rumbaugh, E. S. (1990, May 16). Language learning: A capacity unique to Homo sapiens? Department of Anthropology, California State University, Sacramento CA.

Savage-Rumbaugh, E. S. (1990, June 8). Syntactical comprehension in the bonobo. Paper presented in symposium, Chimpanzees: Language, speech, comprehension, counting, and video tasks, Second annual convention of the American Psychological Society, Dallas, TX.

Savage-Rumbaugh, E. S. (1990, June 14). Apes and us: What happens when we begin to communicate with each other? Lecture to Yerkes Regional Primate Research Center Faculty and Staff.

Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1990, July 20). Language acquisition and use in the bonobo. Videotape presentation presented at the thirteenth Congress of the International Primatological Society, Nagoya, Japan.

Rumbaugh, D. M., Washburn, D. A., Savage-Rumbaugh, E. S., Hopkins, W. D. & Richardson, W. (1990, July 21). The Language Research Center's Computerized Test System (LRC-CTS): Video-formatted tasks for primates. Paper presented at the thirteenth Congress of the International Primatological Society, Nagoya, Japan.

Savage-Rumbaugh, E.S. (1990, July 22). Ape Language Research: Past, present and future, Guest speaker, Thirteenth Congress of the International Primatological Society, Satellite symposium at Kuruma-michi Campus, Aichi University, Nagoya, Japan.

Savage-Rumbaugh, E. S. (1990, July 23). Cognitive, linguistic, and postural developmental contrasts between female co-reared Pan troglodytes and Pan paniscus. Presented in symposium, "Behavior of our closest relatives, chimpanzees and bonobos", at the Thirteenth Congress of the International Primatological Society, Kyoto, Japan.

Savage-Rumbaugh, E. S. (1990, July 24). Implications of the cognitive and linguistic abilities of the bonobo for theories of the development of hominid culture. Presented in symposium, "Hominid Culture in primate perspective" at the thirteenth Congress of the International Primatological Society, Kyoto, Japan.

Presentations 1991

Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1991, April 11-14). Chimpanzees track normal child language. In T. Verhave (Chair), "Higher-order classes and language: Data from humans and nonhumans." Symposium conducted at the

Eastern Psychological Association, NY.

Sevcik, R. A., Savage-Rumbaugh, E. S., & Hirsh-Pasek, K. (1991, April). Overextensions in a pygmy chimpanzee are referential and not associative in nature. Paper presented at the Biennial Meeting of the Society for Research in Child Development, Seattle, WA.

Savage-Rumbaugh, E. S. (1991, May 1-4). Language and cognition innate. Invited presentation at the 24th Annual Gatlinburg Conference on Research and Theory in Mental Retardation and Developmental Disabilities, Key Biscayne, FL.

Presentations 1992

Williams, S. L., & Savage-Rumbaugh, E. S. (1992, April). English comprehension in Pan paniscus. Presented at the Eastern Psychological Association meeting, Boston, MA.

Williams, S. L., & Savage-Rumbaugh, E. S. (1992, August). Differential rearing and effects on acquisition of language and other cognitive abilities. Presented at the XIVth Congress of the International Primatological Society, Strasbourg, France.

Savage-Rumbaugh, E. S. (1992, August). Chimpanzee and humans -- The language link. G. Stanley Hall Lecturer at the American Psychological Association, Washington, DC.

Presentations 1993

Savage-Rumbaugh, S. (1993, February). What does my cousin think? Language capacity in the great apes. Invited presentation presented at the annual meeting of AAAS Meeting, Boston, MA.

Chung, J. C., Bowman, B. A., Savage-Rumbaugh, E. S., & Williams, S. (1993, March). Nutrient intakes of bonobos chimpanzees (Pan paniscus). Fed of American Society of Exp. Biology Journal: 7(3), A294. Poster presented in New Orleans, LA. (abstract).

Savage-Rumbaugh, S. (1993, March). The critical components of language acquisition in apes and humans. In S. Savage-Rumbaugh (Chair), "Language processes in apes and humans: Facilitation and assessment." Presented at the 26th Annual Gatlinburg Conference on Research and Theory in Mental Retardation and Development Disabilities, Gatlinburg, TN..

Savage-Rumbaugh, S. (1993, April). Working with apes who get it. Invited presentation at the Annual Series "Lectures on Mental Retardation and Human Development", Kennedy Center, Nashville, TN.

Savage-Rumbaugh, S. (1993, April). Language and animal mind. Film presented at The Mental Lives of Animals Conference sponsored by The Department of

Philosophy and The Language Research Center, Georgia State University,
Atlanta, GA.

Rumbaugh, D. M., & Savage-Rumbaugh, S. (1993, May). Language skills of chimpanzees. Presented at the Annual Chimpanzee Conference, Green Oakes Inn, Fort Worth, TX.

Presentations 1994

Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1994, March). Primate intelligence. Panel discussion, Biology Department Seminar Series, Morehouse College, Atlanta, Ga.

Savage-Rumbaugh, E. S. (1994, May). Concepts of competency. A presentation within Creating Culture Apes & Humans: A Forum for Discussion. Sponsored by Georgia State University and Emory University, Atlanta, GA

Savage-Rumbaugh, E. S. (1994, October). Lecturer at Kyoto University Primate Research Center, Inuyama, JAPAN.

Savage-Rumbaugh, E. S. (1994, October). Lecturer at Meiji-Gakuin University (Yokohama), Tokyo, JAPAN.

Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1994, October). The intelligence of animals. Invited presentation at the Nagoya Port Aquarium, Nagoya, JAPAN.

Savage-Rumbaugh, E. S., Williams, S., Furuichi, T., & Kano, T. (1994, November). Language realized: Symbolic communication of Pan paniscus. Invited paper at The Great Apes Revisited Conference, Wenner-Gren Foundation for Anthropological Research, Mexico.

Presentations 1995

Savage-Rumbaugh, E. S. (1995, March). The Eighth CSEOL Symposium. Invited presentation: Communication with Chimpanzees. UCLA Center for the Study of Evolution and the Origin of Life.

Savage-Rumbaugh, E. S. (1995, April). Guest Lecturer: Toward a Science of Consciousness conference. Hosted by University of Arizona, Tucson.

Presentations 1996

Savage-Rumbaugh, E. S. (April, 1996). Keynote Address Why have we assumed that animals do not have language? Conference on The Minds of Nonhuman Animals, University of Colorado at Boulder.

Beran, M. J., Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (August, 1996). Performance of a chimpanzee (Pan troglodytes) on a computerized counting task. Poster Session at the XVIth Congress of the International Primatological Society,

University of Wisconsin, Madison, WI.

Savage-Rumbaugh, E. S. & Rumbaugh, D. M. (1996, August). Primate intelligence and language: Brain and Environment. Symposium at the XVIth Congress of the International Primatological Society and the XIXth Conference of the American Society of Primatologists, University of Wisconsin, Madison, WI.

Savage-Rumbaugh, E. S. (1996, October). Invited speaker at the XXXII Nobel Conference. Apes at the end of an age: Primate language and behavior in the 90's. Gustavus Adolphus College.

Presentations 1997

Savage-Rumbaugh, E. S. (1997, January). Invited speaker, Buckhead Rotary, Atlanta, GA.

Beran, M. J., Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1997, March). Paper presented at Southern Society for Philosophy and Psychology Annual Meeting. Evaluation of current language comprehension in three chimpanzees (Pan troglodytes): Effect of rearing on duration of language comprehension. Atlanta, GA.

Rice, D. R., Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1997, March). Session at Southern Society for Philosophy and Psychology Annual Meeting. A chimpanzee's ability to learn ordinality and counting. Atlanta, GA.

Savage-Rumbaugh, E. S. (1997, April). Lecturer, Seminar entitled Exploring the Primate Mind. Primate language: At the brink of the human mind. National Zoological Park, Washington, D.C.

Savage-Rumbaugh, E. S. (1997, May). Sigma Xi Public Talk. Apes, Language, Math, and Minds. University of New Mexico, Albuquerque, NM.

Savage-Rumbaugh, E. S. (1997, December). Discussant. Great Ape Concert. Canberra, Australia.

Savage-Rumbaugh, E. S. (1997, December). Keynote Speaker. Australian Primate Society Annual Meeting. Tasmania, Australia.

Savage-Rumbaugh, E. S. (1997, December). Invited Lecturer. University of New England, Armidale, Australia.

Presentations 1998

Savage-Rumbaugh, E. S. (1998, February). Invited symposium at American Association for the Advancement of Science Annual Meeting. Darwinian Perspectives on the origin of Language: Bonobo Communication. Philadelphia, PA.

Beran, M. J., Savage-Rumbaugh, E. S., & Brakke, K. E. (1998, April). Paper presented at the 2nd International Conference on the Evolution of Language. Language comprehension in three chimpanzees (Pan troglodytes): Effect of rearing on level of comprehension.

Savage-Rumbaugh, E. S. & Fields, W. M. (1998, June). Language and culture: A trans-generational interweaving. Invited speaker, Jan Wind Memorial Lecture, Language Origins Society, 14th Annual Meeting, Tallahassee, FL.

Savage-Rumbaugh, E. S. (1998, November). Behavior and mental abilities of primates. Invited speaker, Tufts University Center for Animals and Public Policy, Lecture series: "Animal Cognition and Communication", Natick, MA.

Presentations 1999

Savage-Rumbaugh, E. S. & Fields, W. M. (1999, January). The differential emergence of consciousness in infant bonobos as a function of pre- and post-natal environment. Invited speaker, "The Problem of Animal Consciousness: Historical, Theoretical, and Empirical Perspectives", sponsored by the Society of Integrative and Comparative Biology, Denver, CO.

Savage-Rumbaugh, E.S. & Fields, W.M. (1999). Probing the Realities of Ape Language. Invited speaker, "The Evolution of Apes and the Origins of Human Beings, " SAGA2/COE Joint International Symposium, Primate Research Institute, Kyoto University, Inuyama, Japan, November.

Savage-Rumbaugh, E. S. (1999, July) Bonobos: Music, Art, Tools, and Speech. Invited speaker, SpoletoScienza conference on "Views on the Mind", Spoleto, Italy.

Savage-Rumbaugh, E. S. (1999, September). Invited speaker, "Consciousness: Integrating Phenomenology and Cognitive Science", sponsored by the Fetzer Institute, Kalamazoo, MI

Presentations 2000

Savage-Rumbaugh, E. S., Rumbaugh, D. M. (2000, March) The apes and us: Language, culture, and other emergent processes. "Crossing Boundaries" Annual Conference of the American Association for Applied Linguistics, Vancouver, Canada.

Savage-Rumbaugh, E. S., Fields, W. M., Taglialatela, J. P. (2000, April). Language, Culture and Tools. Invited speakers, 3rd International Conference on "The Evolution of Language", Paris, France.

Savage-Rumbaugh, E. & Fields, W. (2000, July). "A Restatement of the Achievements of Ape Language with a Theory of Mind Update." The XXVII International Congress of Psychology, Stockholm, Sweden.

Savage-Rumbaugh, E. S. (2000, September). Why play? Invited speaker, "The Playful Mind" symposium, Lemelson Center for the Study of Invention and Innovation, Smithsonian National Museum of American History.

Presentations 2001

Menzel, C. R., Savage-Rumbaugh, E. S., Menzel, E. W. Jr. (2001, January). Primate Geometry. Paper presented at "Primates in the New Millennium", The XVIIIth Congress of the International Primatological Society, Adelaide, South Australia.

Savage-Rumbaugh, E. S. and Taglialatela, J. P. (2001, January). The mind of the bonobo: expectations, explications, and conversations. Paper presented at "Primates in the New Millennium", The XVIIIth Congress of the International Primatological Society, Adelaide, South Australia.

Renard, S. and Savage-Rumbaugh, E. S. (2001, July). Intonation and meanings in bonobo vocalizations. Paper presented at "Interfaces: Systemic Functional Grammar and Critical Discourse Analysis," The 28th International Systemic Functional Congress, Ottawa, Canada.

Savage-Rumbaugh, E. S., Spircu, T., & W. Fields (2001, August). Vocal speech in a nonhuman primate. Presented at the XXVII International Ethological Conference, Tübingen, Germany.

Presentations 2002

Savage-Rumbaugh, E. S. (2002, June). Apes, language and species – Where we've been and where we're going: A Tribute to the critic. Presented at "Zoosemiotics: From Clever Hans to Kanzi in Memory of Tom Sebeok (1920-2001)," Center for Semiotic and Cognitive Studies, Università degli Studi, Repubblica di San Marino.

Savage-Rumbaugh, E.S. (2002, October). Symbols, syntax, paragraphs, and context. Where the subjective confronts the objective. Presented at Emory Cognition Workshop. Symbol Use and Symbolic Representation. Emory University, Decatur, Georgia.

Presentations 2003

Savage-Rumbaugh, E.S. & Fields, W. (2003, April). The Emergence of Tools Embedded in Culture: Beyond Anthropomorphism. The 39th Annual University of Cincinnati Philosophy Colloquium: Perspectives on the Animal Mind.

Fields, W. & Savage-Rumbaugh, S. (2003, May). Bonobo Beliefs and Desires. Seventh Congress of the Association of the Scientific Study of Consciousness. Memphis, Tennessee.

Spircu, T. & Savage-Rumbaugh, E.S. (2003, June). Analyzing bonobo vocalization by using computer: results and limitations. University of Bielefeld, Center for

Interdisciplinary research, Seminary on General Theory of Information Transfer and Combinatorics.

Savage-Rumbaugh, E.S. (2003, October). The Development of Forgiveness. Forgiveness Conference, Templeton Foundation, Atlanta, Georgia.

Presentations 2004 -- Bonobos Relocated to Great Ape Trust

Savage-Rumbaugh, S. (2004, February). Fifteen Minutes of Apes. The TED Conference, Monterey, California.

Presentations 2005

Savage-Rumbaugh, S. (2005, February). Our Closest Living Relatives, the Bonobos: What They Mean to Us and Why. Invited lecturer, "Speaking of Science" series at Buena Vista University, Storm Lake, Iowa.

Presentations 2006-2008

Records lost during move of bonobos from the Language Research Center to Great Ape Trust.

Presentations (2009)

Maternal care, self agency, moral agency, epigenetics and culture: Implications for the rise of language in *Homo symbolicus* and *Pan symbolicus*. Jan. 16-20, Capetown, South African, *Homo symbolicus*: The Dawn of Language, Imagination and Spirituality. A symposium presented by the John Templeton Foundation.

Language: The Carrier Wave of Culture, Tools and Intelligence, Science Circle, February 2009.

Intentionality in All its Guises, Invited Speaker, Evolutionary Studies Program at Binghamton University. March 20, 2009. Binghamton University

Why the Pan/Homo Culture made Kanzi speak: Culture theory as a supplement to genetic evolution. May, 2009. Berlin Behavioral Biology Symposium, Berlin.

How Culture Makes Bonobos Speak: The Rise of Language, Consciousness and Moral Agency in Bonobos (*Pan symbolicus*). Science Circle, Great Ape Trust, June 29.

Sigma Xi National Lecturer--1988-1990

1988 September; Western Maryland College, Westminster, MD.

1988 October; Southwest Missouri State University, Springfield, MO.

1989 February; University of South Florida, Tampa, FL.

- 1989 April; Columbia University, New York
- 1989 May; University of Cincinnati, Cincinnati, OH.
- 1989 May; Rush-Presbyterian-St. Lukes Medical Center, Chicago, IL.
- 1989 August; Vassar College, Poughkeepsie, NY
- 1989 October; Northwestern University, Evanston, IL.
- 1989 November; Hollins College, Roanoke, VA.
- 1989 December; Marshall University, Huntington, West VA.
- 1990 January; Eastern Kentucky University, Lexington, KY.
- 1990 January; Stockton College, Pomona, NJ.
- 1990 February; Hope College, Holland, MI.
- 1990 February; Georgia Tech University & Emory University, Atlanta, GA.
- 1990 February; University of South Dakota, Vermillion, SD and South Dakota State University, Brookings, SD.
- 1990 March; Cornell University, Geneva, NY.

RESEARCH GRANTS

- Research Development Grant (1974), University of Oklahoma (\$1,500).
- National Institute of Child Health and Human Development HD06016 (1980-1985).
Principal Investigator, Animal Model Project (\$100,000).
- National Institute of Child Health and Human Development HD06016 (1985-1999).
Principal Investigator, Language Acquisition in *Pan paniscus* (\$2,500,000). Co-investigator, Cognitive Project.
- Biomedical Research Support Grant, Emory University (1987-1989). Co-investigator,
"Hemispheric dominance for language and cognitive processes in the chimpanzee" (\$20,000).
- World Wildlife Fund, Grant # HW13, March 1, 1998 - February 28, 2000. Principal Investigator, Partial Support of the Congolese Conservation Initiative of the Bonobo Protection Fund (\$15,000).
- The Templeton Foundation, Grant (2001-2004) Program Project Coordinator. Studies in Forgiveness (\$218,322).
- The Milt Harris Foundation, Grant (2002-2003) Principal Investigator, "Non-Human Vocalization Study (*Pan paniscus*)" (\$50,000).

National Institute of Child Health and Human Development HD06016 (1999-2002)
 Program Project Coordinator, Studies of Language, Culture, and Tools
 (\$1,530,689).

National Institute of Child Health and Human Development HD06016 (1999-2002)
 Principal Investigator, The Embedding of Language in Culture (\$338,601).

REVIEW ACTIVITIES

1985-present: Board of Editors, Psychological Record

Referee: American Journal of Primatology, American Scientist, Brain and Behavioral Sciences, Journal of Comparative Psychology, National Institute of Health, National Geographic Journal, National Science Foundation, Psychological Record (Board of editors, 1985-pres.), Science, Yale University Press, Center for Field Research

Grant Reviews: National Institute of Health, National Geographic Society, National Science Foundation, Center for the Field Research

**Exhibit B to Savage-Rumbaugh -
References
[pp. 531 - 541]**

EXHIBIT B

BIBLIOGRAPHY

- Acquarone, S. 2007. *Signs of Autism in Infants: Recognition and Early Intervention*. Karnac Books.
- Benson, J., Greaves, W., Savage-Rumbaugh, S., Taglialatela, J., & Thibault, P. (2005) "The thin end of the wedge: grammar and discourse in the evolution of language." In J. D. Benson & W. S. Greaves (Eds.) *Functional Dimensions of Ape-Human Discourse*, Equinox Press.
- Beran, M. J., SavageRumbaugh, E. S., Brakke, K. E., Kelley, J. W., & Rumbaugh, D. M. (1998). Symbol comprehension and learning: A "vocabulary" test of three chimpanzees (Pan troglodytes). *Evolution of Communication* 2, 171-188.
- Beran, M. J., Gibson, K. R. , & Rumbaugh, D. M. (1999). Predicting hominid intelligence from brain size. In M. Corbalis & E. G. Lea (Eds.), *The descent of mind: Psychological perspectives on hominid evolution*. New York: Oxford University Press.
- Beran, M. J., Savage-Rumbaugh, E. S., Pate, J. L., & Rumbaugh, D. M. (1999). Delay of gratification in chimpanzees (Pan troglodytes). *Developmental Psychobiology*, 34, 119-127.
- Beran, M. J., Pate, J. L., Richardson, W. K., & Rumbaugh, D. M. (2000). A chimpanzee's (Pan troglodytes) longterm retention of lexigrams. *Animal Learning and Behavior*, 28, 201-207.
- Beran, M. J., & Rumbaugh, D. M. (2001). "Constructive" enumeration by chimpanzees (Pan t roglodytes) on a computerized task. *Animal Cognition*, 4, 81-89.
- Beran, M. J., Washburn, D. A., & Rumbaugh, D. M. (2008). The Stroop Effect in color-naming of color-word lexigrams by a chimpanzee. *Journal of General Psychology*, 134, 217-228.
- Boesch, C and O'Connell, S. (2012) *Chimpanzee: The Making of the Film*, Disney Editions: Nework
- Boesch, C. (2009). *The Real Chimpanzee: Sex Strategies in the Forest*. Cambridge Un. Cambridge Un. Press.
- Boesch, C. (2012). *Wild Culture: A Comparision between Chimpanzee and Human Cultures*.
- Cerutti, D. T., & Rumbaugh, D. M. (1993). Stimulus relations in comparative primate perspective. *Psychological Record*, 43, 811-821.
- Chimpanzee Sequencing and Analysis Consortium 2005. Initial sequence of the chimpanzee genome and comparison with the human genome. *Nature* 437.

- Doidge, Norman (2007). *The Brain That Changes Itself: Stories of Personal Triumph from the frontiers of brain science*. New York: Viking. ISBN 978-0-670-03830-5.
- Essock, S. M. (1977). Color perception and color classification. In D. M. Rumbaugh (Ed.), *Language learning by a chimpanzee*. New York: Academic Press. pp. 207-224.
- Essock, S. M., Gill, T. V., & Rumbaugh, D. M. (1977). Language relevant object and color naming tasks. In D. M. Rumbaugh (Ed.), *Language Learning by a Chimpanzee: The LANA Project* (pp. 193-206). New York: Academic Press.
- Essock, S. M., & Rumbaugh, D. M. (1978). Development and measurement of cognitive capabilities in captive nonhuman primates. In H. Markowitz & V. J. Stevens (Eds.), *Behavior of Captive Wild Animals* (pp. 161-208). Chicago: NelsonHall.
- Fouts, R.S. & Fouts, D.H. (1993). Chimpanzees' Use of Sign Language. In P. Cavalieri & P. Singer (Eds.), *The Great Ape Project: Equality Beyond Humanity* (pp. 28-41). New York: St. Martin's Press.
- Gallup, G. G. (1987). Self awareness. In J. Erwin (Ed.), *Comparative primate biology: Volume 2B. Behavior, cognition and motivation*, (pp. 3-16). New York: Alan R. Liss.
- Gardner, R.A. & Gardner, B.T. (1969). Teaching Sign Language to a Chimpanzee. *Science*, 165, 664-672.
- Gibson, K. R., Rumbaugh, D. M., & Beran, M. J. (2001). Bigger is better: Primate brain size in relationship to cognition. In D. Falk & K. R. Gibson (Eds.), *Evolutionary anatomy of the primate cerebral cortex* (pp. 79-97). Cambridge: Cambridge University Press.
- Goodall, 1986, *The Chimpanzees of Gombe: Patterns of Behavior* Boston: Bellknap Press of the Harvard University Press.
- Greenfield, P. & Savage-Rumbaugh, E. S. (1991). Imitation, grammatical development, and the invention of protogrammar by an ape. In Krasnegor, N. A.,
- Greenfield, P. M., Maynard, Boehm, C and Schmidtling (2000) Cultural Apprenticeship and Cultural Change: Tool Learning and Imitation in Chimpanzees and Humans. In: *Biology, Brains and Behavior*, (S. T. Parker, J. L. a. M. L. M., ed.). pp. 237-277. School of American Research, Santa Fe.
- Greenfield, P. M., Lyn, H., and Savage-Rumbaugh, E. S. 2006. The development of representational play in chimpanzees and bonobos: Evolutionary implications, pretense and the role of interspecies communication. *Cognitive Development* 21: 199-213.
- Greenfield, P. M., Lyn, H., and Savage-Rumbaugh, E. S. 2008. Protolanguage in ontogeny and phylogeny: Combining deixis and representation. *Interaction Studies: Social Behavior and Communication in Biological and Artificial Systems. Special Issue: Holophrasis vs compositionality in the emergence of protolanguage* 9: 34-35.

- Greenfield, P. M. 2009. Linking social change and developmental change: Shifting pathways of human development. *Developmental Psychology* 452: 401-418.
- Greenfield, P. M. a. L., H. (2007) Symbol Combination in Pan: Language, Action and Culture. In: *Primate Perspectives on Behavior and Cognition*, (Washburn, D., ed.). pp. American Psychological Association, Washington, D. C.
- Greenfield, P. M. and Savage-Rumbaugh., E. S. 1984. Perceived variability and symbol use: A common language-cognition interface interface in children and chimpanzees. *Journal of Comparative Psychology* 98: 201-218.
- Greenspan, S. I. a. S., S. G. 2004. *The First Idea: How Symbols, Language and Intelligence Evolved from our Primate Ancestors to Modern Humans*. De Capo Press, Cambridge MA.
- Hewes, G. W. (1977). Language origin theories. In D. M. Rumbaugh (Ed.), *Language learning by a chimpanzee: The LANA project*. New York: Academic Press.
- Hillix, W. A. & Rumbaugh, D. M. (1998). Language in animals. In G. Greenberg & M. M. Haraway (Eds.) *Comparative psychology: A Handbook* (pp. 837-848). New York: Garland Publishing.
- Hillix, W. A., King, J. E., & Rumbaugh, D. M. (2012). Comparative psychology. Robert W. Rieber (Ed.), *Encyclopedia of the History of Psychological Theories*. New York: Springer Science+Business Media, LL 10.1007/9-0463-8_11; t71n18-26114886.
- Hopkins, W. D., Washburn, D. A., & Rumbaugh, D. M. (1990). Processing of form stimuli presented unilaterally in humans, chimpanzees, (Pan troglodytes), and monkeys (Macaca mulatta). *Behavioral Neuroscience*, 104, 577-584.
- Hopkins, W. D., Morris, R. D., Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1992). Hemispheric priming by meaningful and nonmeaningful symbols in language-trained chimpanzees (Pan troglodytes): Further evidence of a left hemisphere advantage. *Behavioral Neuroscience*, 106(3): 575-58.
- Kellogg, W. N. a. K., L. A. 1933. *The Ape and the Child: A Study of Environmental Influence upon Early Behavior*. McGraw-Hill, New York.
- Kitcher, P. (2006) Two normative roles of consciousness. In: *The Missing Link in Cognition*, (Terrace, H. S. a. M., J., ed.). pp. 174-187. Oxford University Press, Oxford.
- King, J. E., Rumbaugh, D. M. & Savage-Rumbaugh, E. S. (1998). Evolution of intelligence, language, and other emergent processes for consciousness: A comparative perspective. In S. J. Hameroff, A. W. Kaszniak, & A. C. Scott (Eds.) *Toward a science of consciousness II: The second Tucson discussions and debates* (pp. 383-395). Cambridge: MIT Press.
- King, J. E., Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1999). Perception of personality traits and semantic learning in evolving hominids. In M. Corbalis & E. G. Lea (Eds.),

- The descent of mind: Psychological perspectives on hominid evolution.* (pp. 98-115). New York: Oxford University Press.
- Lyn, H., & Rumbaugh, D. M. (2003). Cognitive and language skills: Early environmental influences on apes. In J. R. Miller, R. M. Lerner, L. B. Schiamberg, & P. M. Anderson, (Eds.), *Encyclopedia of Human Ecology*, Vol. 1, (pp. 128-130).
- Massel, H. K., Macias, S., Meador, D. M., & Rumbaugh, D. M. (1981). The learning skills of primates: The rhesus macaque in comparative perspective. *International Journal of Primatology*, 2, 917.
- Menzel, C. R. (1999). Unprompted recall and reporting of hidden objects by a chimpanzee (Pan Troglodytes) after extended delays. *Journal Of Comparative Psychology*. 113: 426-434.
- Menzel, E., Savage-Rumbaugh, E. S., & Lawson, J. (1985). Chimpanzee (Pan troglodytes) spatial problem solving with the use of mirrors and televised equivalents of mirrors. *Journal of Comparative Psychology*, 99(2), 211-217.
- McGrew, W. C. and Tutin, E. G (1973). Chimpanzee tool use in dental grooming. *Nature*, 41:477-478.
- Meador, D. M., Rumbaugh, D. M., Pate, J. L., & Bard, K. A. (1987). Learning, problem solving, cognition, and intelligence. In G. Mitchell & J. Erwin (Eds.), *Comparative primate biology, Vol. 2, Part B: Behavior, cognition, and motivation* (pp. 17-83). New York: Alan R. Liss.
- Menzel, E. W. Jr., Davenport, R. K., & Rogers, C. M. (1970). The development of tool using in wild-born and restriction-reared chimpanzees. *Folia Primatologica*, 12, 273-283.
- Morris, R. D., Hopkins, W. D., & Rumbaugh, D. M. (1997). Cerebral specialization. In *Encyclopedia of human biology*, 2, 629-633. Academic Press.
- Nishida, T. (1968). The social group of wild chimpanees in the Mahali Mountains, *Primates*, 9:167-224.
- Nishida, T. (1970). Social behavior and relationship among wild chimpanzees of the Mahali Mountains, *Primates*, 11:47-87.
- Nishida, T. (1979). The social structure of chimpaness of the Mahale Mountains, in : *The Great Apes* (D. A. Hamburg and E. R. McCown, eds)pp. 72-121, Menlow Park, California: The Benjamin Cummings Publishing, Co.
- Nishida, T., Zamma, K., Matsusaka, T., Inaba, A. & McGrew, W.C.(2010). *Chimpanzee Behavior in the Wild: An Audio-Visual Encyclopedia*. Springer, 247 pp.

- Pate, J. L., and Rumbaugh, D. M. (1983). The language-like behavior of Lana chimpanzee: Is it merely discrimination and paired-associate learning? *Animal Learning & Behavior*, 11, 134-138.
- Passingham, R. E. (1982). *The Human Primate*. Oxford, England: W.H. Freeman and Company
- Passingham, R. E. (1981) Broca's area and the origins of human vocal skill. *Philosophical Transactions of the Royal Society*, London B, 292:167-175
- Passingham, R. E. and Ettlinger, G. (1974). A comparison of cortical functions in man and the other primates. *International Review of Neurobiology*: 16: 233-299.
- Perusse, R., & Rumbaugh, D. M. (1990). Summation in chimpanzees (*Pan troglodytes*): Effects of amounts, number of wells, and finer ratios. *International Journal of Primatology*, 11(5), 425-437.
- J.D. Pruettz (2002). Use of caves by savanna chimpanzees in Senegal. *Pan Africa News*.
- Richardson, W. K., Washburn, D. A., Hopkins, W. D., Savage-Rumbaugh, E.S., & Rumbaugh, D.M. (1990) The NASA/LRC computerized test system. *Behavior Research Methods, Instruments, & Computers*, 22(2), 127-131.
- Rilling, J., Kilts, C., Williams, S., Kelley, J., Beran, M., Giroux, M., Hoffman, J. M., Savage-Rumbaugh, S., & Rumbaugh, D. (1999). Functional neuroimaging of linguistic processing in chimpanzees. *Society of Neuroscience Abstracts*, 25(2), 2170.
- Rumbaugh, D. M. (1971). Evidence of qualitative differences in learning among primates. *Journal of Comparative and Physiological Psychology*, 76, 250-255
- Rumbaugh, D. M. (1977) *Language Learning by a Chimpanzee*. New York: Academic Press.
- Rumbaugh, D. M. (1989). Current and future research on chimpanzee intellect. In P. Heltne & L. Marquardt (Eds.), *Understanding chimpanzee*, (pp. 296-310). Cambridge, MA: Harvard University.
- Rumbaugh, D. M. (1995). Primate language and cognition: Common ground. *Social Research*, 62, 711-730.
- Rumbaugh, D. M. (2002). Emergents and rational behaviorism. *Eye on Psi Chi*, 6, 8-14.
- Rumbaugh, D. M., (2013). *With Apes in Mind*.
- Rumbaugh, D. M., & Beran, M. J. (2003a). Language acquisition by animals. In L. Nadel (Ed.), *Encyclopedia of Cognitive Science* (pp. 700-707). London: Macmillan.
- Rumbaugh, D. M., & Beran, M. J. (2003b). Animal language. In L. Nadel (Ed.) *Encyclopedia of Cognitive Science* (pp. 138-141). London: Macmillan.

- Rumbaugh, D. M., Gill, T. V., & von Glasersfeld, E. C. (1973). Reading and sentence completion by a chimpanzee (Pan). *Science*, 182, 731-733.
- Rumbaugh, D. M., & Gill, T. V. (1976a). Language and the acquisition of language-type skills by a chimpanzee (Pan). *Annals of the New York Academy of Sciences*, 270, 901-23.
- Rumbaugh, D. M., & Gill, T. V. (1976b). The mastery of language type skills by the chimpanzee (Pan). *Annals of the New York Academy of Sciences*, 1976, 280, 562-578.
- Rumbaugh, D. M., & Gill, T. V. (1977a). Lana's acquisition of language skills. In D. M. Rumbaugh (Ed.) *Language Learning by a Chimpanzee: The LANA Project* (pp. 165-192). New York: Academic Press.
- Rumbaugh, D. M., & Gill, T. V. (1977b). Language and language-type communication: Studies with a chimpanzee. In M. Lewis & L. A. Rosenblum (Eds.), *Interaction, Conversation, and the Development of Language* (pp. 115-131). New York: John Wiley and Sons.
- Rumbaugh, D. M., & McCormack, C. (1969). Attentional skills of great apes compared with those of gibbons and squirrel monkeys. In C. R. Carpenter (Ed.), *Proceedings of the Second International Congress of Primatology, Vol. 1, Behavior* (pp. 167-172). Basel: Karger. Press.
- Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1978). Chimpanzee language research: Status and potential. *Behavior Research Methods & Instrumentation*, 10, 119-131.
- Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1980). A response to Herbert Terrace's article, "Linguistic apes: what are they saying?". *New York University Educational Quarterly* (Winter), 33..
- Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1986). Reasoning and language in chimpanzees. In R. Hoage (Ed.), *Animal intelligence* (pp. 57-75). Washington DC: Smithsonian Institution.
- Rumbaugh, D. M. & Sterritt, G. M. (1986). Intelligence: From Genes to Genius in the Quest for Control. In W. Bechtel (Ed.), *Integrating scientific disciplines*. Dordrecht, Martinus Nijhoff Publishers.
- Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1994a). Language and apes. *The Psychology Teacher Network*, Vol. 4, (#1), 2-9.
- Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1994b). Language in comparative perspective. In N. J. Mackintosh (Ed.), *Animal Learning and Cognition* (pp. 307-333). Academic Press.
- Rumbaugh, D. M. & Savage-Rumbaugh, E. S. (1996). Biobehavioral roots of language: Words, apes, and a child. In B. M. Velichkovsky & D. M. Rumbaugh (Eds.), *Communicating meaning: The evolution and development of language* (pp. 257-274). Mahwah, NJ: Lawrence Erlbaum Associates.

- Rumbaugh, D. M. & Savage-Rumbaugh, E. S. (1997). A comparative perspective on the etiology of meaning and assaying behaviors for meaning. In C. Mandell & A. McCabe (Eds). *Advances in psychology: The problem of meaning: Behavioral and cognitive perspectives*. (pp. 147-179). Amsterdam, The Netherlands: Elsevier Science
- Rumbaugh, D. M. & Savage-Rumbaugh, E. S. (1999). *Primate language*. In R. A. Wilson & F. C. Keil (Eds.) *The MIT encyclopedia of the cognitive sciences*. Cambridge: The MIT Press.
- Rumbaugh, D. M., Beran, M. J., & Pate, J. L. (2003). Uncertainty monitoring may promote emergents. *Behavioral and Brain Sciences*, 26, 353.
- Rumbaugh, D. M., Beran, M. J. & Savage-Rumbaugh, E. S. (2003). Language. In D. Maestriperi (Ed.), *Primate Psychology*, (pp. 395-423). Cambridge, MA: Harvard University Press.
- Rumbaugh, D. M., Riesen, A. H. & Wright, S. C. (1972). Creative responsiveness objects: A report of a pilot study with young apes. *Folia Primatologica*, 17, 397-403.
- Rumbaugh, D. M., Savage-Rumbaugh, E. S., & Hegel, M. (1987). Summation in the chimpanzee (Pan troglodytes). *Journal of Experimental Psychology: Animal Behavior Processes*, 13, (2), 105-113.
- Rumbaugh, D. M., Savage-Rumbaugh, E. S., & Pate, J. L. (1988). Addendum to "Summation in the Chimpanzee (Pan troglodytes)." *Journal of Experimental Psychology: Animal Behavior Processes*, 14, 118-120.
- Rumbaugh, D. M., Savage-Rumbaugh, E. S., & Sevcik, R. A. (1994). Biobehavioral roots of language: A comparative perspective of chimpanzee, child and culture. In R. W.
- Rumbaugh, D. M., Savage-Rumbaugh, E. S., & Washburn, D. A. (1994). Learning, prediction and control with an eye to the future. In M. M. Haith, J. B. Benson, R. J. Roberts, Jr., & B. F. Pennington (Eds.), *The Development of Future-Oriented Processes* (pp 119-138). Chicago, IL: University of Chicago Press..
- Rumbaugh, D. M., Washburn, D. A., & Hillix, W. A. (1996). Respondents, operants, and emergents: Toward an integrated perspective on behavior. In K. Pribram & J. King (Eds.), *Learning as a self-organizing process* (pp. 57-73). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Rumbaugh, D. M., Hopkins, W. D., Washburn, D. A., & Savage-Rumbaugh, E. S. (1989). Lana chimpanzee learns to count by "Numath": A summary of a videotaped experimental report. *The Psychological Record*, 39, 459-470.
- Savage, E. S., Temerlin, J. W. and Lemmon, W. B. (1973) The appearance of mothering behavior toward a kitten by a human-reared chimpanzee (Pan troglodytes). In: *Proceedings of the Fifth International Congress of Primatology*, (S. Kondo, M. K., and A. Ehara, ed.). pp. 287-291. Karger: Basel.

- Savage, E. S. (1975) Mother-infant behavior among captive group-living chimpanzees 'Pan troglodytes'. In: *Psychology*, Vol. Ph. D. pp. 180. University of Oklahoma, Norman, OK.
- Savage-Rumbaugh, E. S. (1984) Pan paniscus and Pan troglodytes: Contrasts in preverbal competence. In: *The Pygmy Chimpanzee*, (Susman, R., ed.). pp. 395-413. Plenum, New York.
- Savage-Rumbaugh, E. S. 1986. *Ape Language: From Conditioned Response to Symbol*. Columbia University Press, New York.
- Savage-Rumbaugh, E. S. 1990. Language as a Cause-Effect Communication System. *Philosophical Psychology* 90: 55-77.
- Savage-Rumbaugh, E. S. (1997) Why are we afraid of apes with language? In: *The Origin and Evolution of Intelligence*, (Schopf, A. B. S. a. J. W., ed.). pp. 43-69. Jones and Bartlett, Sudbury MA.
- Savage-Rumbaugh, E. S. (1999) Ape Language: Between a rock and a hard place. In: *The Origins of Language*, (King, B., ed.). pp. 115-188. *School of American Research Press*, Sante Fe.
- Savage-Rumbaugh, E. S., Rumbaugh, D. M. (1980). Linguistically mediated tool use and exchange by chimpanzees (Pan troglodytes). In T. A. Sebeok & J. Umiker-Sebeok (Eds.), *Speaking of Ape: A Critical Anthology of Two-Way Communication with Man* (pp. 353-383). New York: Plenum Publishing
- Savage-Rumbaugh, E. S., Fields, W. M. 2000. Linguistic, Cultural and Cognitive Capacities of Bonobos (Pan paniscus). *Culture and Psychology* 6: 131-153.
- Savage-Rumbaugh, E. S., and Fields, W. M, (2007) Rules and tools: Beyond anthropomorphism. In: *The Oldowan: Case Studies into the Earliest Stone Age*, (Toth, N. a. F., M., ed.). pp. Stone Age Institute Press, Goport IN.
- Savage-Rumbaugh, E. S., & Hopkins, W. D. (1986). The evolution of communicative capacities. In W. Bechtel (Ed.), *Science and philosophy: Integrating scientific disciplines* (pp. 243-262). Dordrecht, The Netherlands: Martinus Nijhoff.
- Savage-Rumbaugh, E. S., Fields, W. M., Taglialatela, J. 2001. Language, speech, tools and writing: A cultural imperative. *Journal of Consciousness Studies* 8: 273-292.
- Savage-Rumbaugh, E. S., Fields, W. M. and Taglialatela 2001. Ape consciousness - Human consciousness: *A Perspective informed by language and culture*. *American Zoologist* 40: 910-921.
- Savage-Rumbaugh, E. S., Fields, W. M. and Spircu, T. 2004. The emergence of knapping and vocal expression embedded in Pan/Homo culture. *Biology and Philosophy* 19: 541-575.

- Savage-Rumbaugh, E. S., Hopkins, W. D., & Sevcik, R. A. (1988). Symbolic cross-modal transfer in two species of chimpanzees (*Pan troglodytes* and *Pan paniscus*). *Journal of Child Development*, *59*, 617-625.
- Savage-Rumbaugh, E. S., Rumbaugh, D., and Fields, W. M. 2009. Empirical Kanzi: The Ape Language Controversy Revisited. *Skeptic* 15.
- Savage-Rumbaugh, E. S., Rumbaugh, D. M., & Boysen, S. (1978a). Symbolic communication between two chimpanzees (*Pan troglodytes*). *Science*, *201*, 641-644.
- Savage-Rumbaugh, E. S., Rumbaugh, D. M., & Boysen, S. (1978b). Linguistically mediated tool use and exchange by chimpanzees (*Pan troglodytes*). *Behavioral and Brain Sciences*, *4*, 539-554.
- Savage-Rumbaugh, E. S., Scanlon, J., & Rumbaugh, D. M. (1980). Communicative intentionality in the chimpanzee. *The Behavioral and Brain Sciences*, *3*, 620-623.
- Savage-Rumbaugh, E. S., Segerdahl, P. and Fields, W. M. (2005) Individual differences in language competencies resulting from unique rearing conditions imposed by different first epistemologies. In: *Symbol Use and Symbolic Representation*, (Namy, L. L., ed.). pp. 199-219. Lawrence Erlbaum Associates, Mahwah, NJ.
- Savage-Rumbaugh, E. S., Rumbaugh, D. M., and Boysen, S. (1978). Symbolic communication between two chimpanzees (*Pan troglodytes*). *Science* *201*: 641-644.
- Savage-Rumbaugh, E. S., Rumbaugh, D. M., & Boysen, S. (1978). Linguistically mediated tool use and exchange by chimpanzees (*Pan troglodytes*). *Behavioral and Brain Sciences*, *4*, 539-554.
- Savage-Rumbaugh, E. S., Shanker, S. G. and Taylor, T. J. 1998. *Ape, Language and the Human Mind*. Oxford University Press, Oxford.
- Savage-Rumbaugh, E. S., McDonald, K., Sevcik, R. A., Hopkins, W. D. and Rubert, E. 1986. Spontaneous symbol acquisition and communicative use by pygmy chimpanzees (*Pan paniscus*). *Journal of Experimental Psychology: General* *115*: 211-235.
- Savage-Rumbaugh, E. S., Murphy, J., Sevcik, R. A., Brakke, K. E., Williams, S. L., and Rumbaugh, D. M. 1993. *Language Comprehension in Ape and Child*. *Monographs of the Society for Child Development* *58*: 1-256.
- Savage-Rumbaugh, E. S., Romski, M. A., Sevcik, R., & Pate, J. L. (1983). Assessing symbol usage versus symbol competency. *Journal of Experimental Psychology: General*, *112*, 508-512.
- Savage-Rumbaugh, E. S., Pate, J. L., Lawson, J., Smith, S. T., & Rosenbaum, S. (1983). Can a chimpanzee make a statement? *Journal of Experimental Psychology: General*, *112*, 457-492.

- Savage-Rumbaugh, E. S., Shanker, S., Taylor, T. J. (1996). Apes with language. *Critical Quarterly*, 38(3), 45-57.
- Savage-Rumbaugh, E. S., Shanker, S., & Taylor, T. J. (1998). *Apes, Language and the Human Mind*. New York, NY: Oxford University Press.
- Savage-Rumbaugh, E. S., Wamba, K., Wamba, P. and Wamba, N. 2007. Wefare of apes in captive environment: Comments on, and by, a specific group of apes. *Journal of Applied Animal Welfare* 10: 7-19.
- Savage-Rumbaugh, E. S., MacDonald, K., Sevcik, R. A., Hopkins, W. D., & Rubert, E. (1986). Spontaneous symbol acquisition and communicative use by two pygmy chimpanzees. *Journal of Experimental Psychology: General*, 115, 211-235.
- Savage-Rumbaugh, E. S., Murphy, J., Sevcik, R. A., Williams, S., Brakke, K., & Rumbaugh, D. M. (1993). *Language comprehension in ape and child*. *Monographs of the Society for Research in Child Development*, Nos. 2 & 3.
- Scanlon, J. L., SavageRumbaugh, E. S., & Rumbaugh, D. M. (1982). Apes and language: An emerging perspective. In S. Kuczaj (Ed.), *Language Development*:*****
- Stern, D. 1971. A micro-analysis of mother-infant interactoin: Behavior regulation and social contact between a mother and her 31/2 month-old twins. *Journal of the American Academy of Child Psychiatry* 12: 402-421.
- Stern, D. 1977. *The First Relationship*. Fontana/Open Books, London.
- Sugiyama, Y. (1968). Social organization of chimpanzees in the Budongo Forest, Uganda. *Primates*, 9:225-258).
- Sugiyama, Y. (1969). Social behavior of chimpanzees in the Budongo Forest, Uganda. *Primates*, 10:197-225.
- Sugiyama, Y. (1973) Social organization of wild chimpanzees, in : Behavioral Regulators of Behavior in Primates (Comparative Ecology and Behavior of Primates (Richard,P. Michael and John H. Crook, eds.)pp. 376-410, London Academic Press).
- Sugiyama, Y. (1981). Observations on the population dynamics and behavior of wild chimpanzees at Bossou, Guinea, in 1979-1980. *Primates*, 22:435-444.
- Teleki, G. (1973). *The Predatory Behavior of Wild Chimpanzees*. Lewisburg Pennsylvania: Bucknell University Press.

- Trevarthen, C. (1998) The concept and foundations of infant intersubjectivity. In: *Intersubjective Communication and Emotion in Early Ontogeny*, (Braten, S., ed.). pp. 15-46. Cambridge University Press, Cambridge.
- Trevarthen, C. a. H., P. (1978) Secondary intersubjectivity: confidence, confiding and act of meaning in the first year. In: *Action, Gesture and Symbol: The Emergence of Language*, (Lock, A., ed.). pp. Academic Press, London
- Tutin, C. (1975). Exceptions to promiscuity in a feral chimpanzee community in: *Contemporary Primatology*. (S. Kondo, M. Kawai, and A. Ehara, eds.) pp. 45-449. Basel Karger.
- Tuttle, R. H. (1986). *Apes of the World: Their Social Behavior, Communication, Mentality, and Ecology*. Noyes Publications, Park Ridge, New Jersey.
- Wildman D., G. L. I., Goodman M (2002). Functional DNA in humans and chimpanzees shows they are more similar to each other than either is to apes. In: *Probing Human Origins*, (Goodman, M. a. M., A. S., ed.). pp. 1-10. *American Academy of Arts and Sciences*, Cambridge MA.
- Wildman D., U. M., Liu G., Grossman L. I., Goodman M. (2003). Implications of natural selection in shaping 99.4% nonsynonymous DNA identity between humans and chimpanzees: enlarging genus. *Proceedings of the National Academy of Science* 100: 7181-7188.
- Williams, S. L., Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1997). Apes and language. *Concise encyclopedia of philosophy of language*. Oxford, England: Elsevier Science LTD.
- Williams, S. L. & Rumbaugh, D. M. (1999). Tympanic membrane temperatures reflect lateralization in a language-trained ape (*Pan troglodytes*). *American Journal of Primatology*, 49.
- Wrangham, W. C. McGrew, F. B. M. de Waal, & P. G. Heltne (Eds), *Chimpanzee Cultures* (pp 319-334). Harvard University Press in cooperation with The Chicago Academy of Sciences: MA.

Supplemental Affidavit of James R. Anderson, sworn to November 18, 2015
[pp. 542 - 551]

FILED: NEW YORK COUNTY CLERK 12/02/2015 05:12 PM

INDEX NO. 162358/2015

NYSCEF DOC. NO. 36

RECEIVED NYSCEF: 12/02/2015

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF NEW YORK

In the Matter of a Proceeding under Article 70 of the
CPLR for a Writ of Habeas Corpus,

THE NONHUMAN RIGHTS PROJECT, INC., on
behalf of TOMMY,

Petitioner,

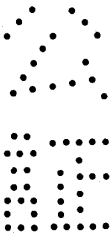
-against-

**SUPPLEMENTAL
AFFIDAVIT OF JAMES
R. ANDERSON**

Index No.

PATRICK C. LAVERY, individually and as an officer of
Circle L Trailer Sales, Inc., DIANE LAVERY, and
CIRCLE L TRAILER SALES, INC.,

Respondents.



COUNTRY OF Japan)
))
STATE OF Osaka) ss :
))
CITY OF Osaka)

James R. Anderson being duly sworn, deposes and says:

Introduction and Qualifications

1. My name is James R. Anderson. I live and work in Kyoto, Japan. I graduated with a Bachelor of Science in Psychology from the University of Stirling (Scotland) in 1977, and a Ph.D. in Psychology from the University of Stirling in 1982.

2. I submit this Affidavit in support of Petitioner, The Nonhuman Rights Project, Inc.'s ("NhRP"), petition for a writ of habeas corpus on behalf of Tommy. I am a non-party to this proceeding.

3. I am a faculty member at Kyoto University. My current position is Professor in Psychology, in the Graduate School of Letters. From 1995 until 2014, I taught Introductory Psychology, Animal Behaviour, and Developmental and Comparative Psychology at the University of Stirling. I have also taught courses on Animal Behaviour and Animal Welfare at the Universities of Edinburgh (Scotland) and Strasbourg (France). Since April 2014, I teach courses on nonhuman primate biology and behaviour, and comparative psychology, at Kyoto University.

4. I have conducted behavioural research on wild chimpanzees in West Africa (Senegal: 1977, 1979; Liberia: 1982), and supervised graduate students who have studied chimpanzees with Japanese colleagues in Guinea (West Africa: 1999-2003; 2004-2005). I have also directly conducted research and have supervised graduate students' research on captive chimpanzees in Japan and Scotland.

5. Since 1987, I have been a scientific advisor to the Primatology Centre of Strasbourg University (France). I have served on the editorial boards of the following scientific journals: *Journal of Comparative Psychology* (1991-1994), *Primatologie* (1997-2007), *Current Psychology Letters: Brain, Behaviour & Cognition* (1998-2011), *American Journal of Primatology* (2006-2013), *Primates* (2002-present), and *Animal Cognition* (2013-present). I have conducted peer reviews of more than 500 manuscripts submitted to academic journals in psychology, biology, anthropology, and general science.

6. I am a specialist in the behaviour of nonhuman primates, with particular focus on learning and social cognition. My behavioural studies have been on multiple species of prosimians, New and Old World monkeys, and apes. In addition to field research on baboons and chimpanzees in West Africa, and macaques in southern India, I have studied several primate

species in laboratories and zoological parks. Distinctions and awards include nomination for the Bronze Medal, Société pour le Progrès de l'Homme, and Auxiliary Award, O.P.A.L. (Oeuvre pour la Protection des Animaux de Laboratoire).

7. I have co-edited 4 volumes: *Primates: Recherches Actuelles* (1990, Masson, Paris), and *Current Primatology*, Vols. 1, 2 and 3 (1994, Université Louis Pasteur, Strasbourg).

8. My publications include over 200 articles on learning, behaviour, ecology, and welfare of prosimians, monkeys and apes, including over 100 peer-reviewed empirical and review articles in scientific journals including: *American Journal of Primatology*, *Animal Behaviour*, *Animal Cognition*, *Animal Welfare*, *Cognition*, *Current Biology*, *Folia Primatologica*, *Journal of Comparative Psychology*, *Journal of Human Evolution*, *Nature Communications*, and *PLoS Biology*. I have also written many chapters for edited volumes covering a range of topics ranging from animal husbandry and welfare to consciousness and cognition. Specific topics include: communication, abnormal behaviour, environmental enrichment, husbandry, attachment formation, correlates of social dominance, responses to mirror-image stimulation, self-awareness, tool-use, social organisation, sleep, learning and memory, effects of ageing, behavioural inhibition and self-control, and third-party social evaluation in primates. I have made several documentary films about primate behaviour, and several of my research projects have received international media attention (radio, television, printed press, internet).

9. I have given invited lectures or been invited speaker in symposia in psychology and primatology in Belgium, England, France, Germany, Italy, Japan, Netherlands, Scotland, Switzerland, and USA. I have served as External Examiner for doctoral theses on primate behaviour in Australia, Denmark, England, France, Germany, The Netherlands, and Scotland.

10. My Curriculum Vitae sets forth my educational background and experience and is annexed to my original Affidavit, filed herewith.

Basis for Opinions

11. The opinions in this Affidavit are based on my own work as well as accumulated knowledge from over 35 years of hands-on research and teaching about the behaviour of nonhuman primates; this includes my knowledge of peer-reviewed literature about primatology published in respected journals, periodicals and scholarly books.

12. A full reference list of peer-reviewed literature cited herein is annexed hereto.

Opinions

13. The close evolutionary relationship between chimpanzees (and the closely related bonobos) and humans is evident not only in terms of physical structure but also in behaviour, emotional and mental processes. No other species comes so close to humans in self-awareness and language abilities, and in richness and diversity of behaviours such as tool-use, gestural communication, social learning, social awareness, and reactions to death.

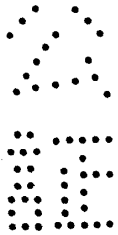
14. Chimpanzees were the first nonhuman species shown to be capable of mirror-mediated self-recognition (Gallup, 1970). Among nonhumans, the evidence for self-recognition - widely accepted to require the ability to hold a mental representation of what one looks like from another visual perspective -- is indisputably strongest for chimpanzees and other great apes (Anderson & Gallup, 2011; 2015). The developmental emergence of self-recognition in chimpanzees is similar to that in humans (Lin, Bard & Anderson, 1992). Furthermore, as in humans, self-recognition in adult chimpanzees is highly stable across time, with some decline in old age (de Veer et al., 2003).

15. Chimpanzees show “community concern,” and concern for individuals. The capacity for self-recognition, which indicates cognitive self-awareness, has been linked to empathic abilities (Gallup, 1982), defined as identifying with and understanding another’s situation, feelings and motives. Chimpanzees are capable of highly developed empathic abilities (de Waal, 1990). They surpass other species in terms of concern for others’ welfare, as shown when individuals console an unrelated victim of aggression by a third-party (de Waal & Aureli, 1996). High-ranking individuals in groups may take on the role of policing – defined as impartial interventions in conflicts by bystanders – to ensure group stability (von Rohr et al., 2012). Wild chimpanzees may adopt orphans, even if the latter are not genetically related to the adopter (Boesch et al., 2010). Individuals may make numerous behavioural adjustments -- sometimes markedly so -- in order to ensure the welfare of injured or disabled members of the group (Matsumoto et al., 2015).

16. Chimpanzees assume specific duties and responsibilities within their society. When crossing a potentially dangerous road, stronger and more capable adult males investigate the situation before more vulnerable group-members, waiting by the roadside, venture onto the road. The males remain vigilant while taking up positions at the front and rear of the procession (Hockings, Anderson & Matsuzawa, 2006). At Bossou, Guinea, adult male chimpanzees are significantly more likely than other age-sex classes to raid human-cultivated crops near villages; these foods are then taken back into the forest and shared with more timid capable members of the community, who hang back and allow the males to raid (Hockings et al., 2007). In many localities in Africa, adult male chimpanzees regularly patrol the boundaries of their community’s territory; encounters with members of a neighbouring community may result in violent, even lethal aggression. Males engage in patrols with partners who are especially likely to be other

males with whom individuals groom and form intra-community coalitions, in other words, individuals that can be trusted for support in the event of aggression breaking out (Watts & Mitani, 2001) (see below for experimental evidence for assessment of trustworthiness). Wild chimpanzees will call to warn approaching friends about the presence of a potentially dangerous object that the latter is unaware of (Schel et al., 2013). These examples indicate the existence of well-defined roles within the community and mutual expectations about how individuals should behave in a range of situations.

17. Chimpanzees cooperate, and understand each other's roles. Experiments in captivity have established that chimpanzees can be trained (Crawford, 1937) or can learn spontaneously (Melis, Hare & Tomasello, 2006a; Suchak et al., 2014) to work collaboratively with at least one other individual to solve a common problem that cannot be solved by a single individual. After experiencing working alongside two different collaborators, chimpanzees prefer to work with a collaborator who has proved more effective in the past (Melis et al., 2006b); thus they attribute different degrees of competence to other individuals. In many cooperation tasks the outcome is that each partner receives a reward such as food. However, immediate reward is not a prerequisite for cooperation: if one chimpanzee sees another trying to solve a problem and can also see the problem, the former may provide the precise tool that the latter requires, especially - but not only - if the latter requests the tool (Yamamoto, Humle & Tanaka, 2012; Melis & Tomasello, 2013). Notably, such helping persists even in the absence of reciprocation by the tool-user: chimpanzees continue to help partners in need of help despite receiving no obvious reward (Yamamoto, Humle & Tanaka, 2009). Similarly, when young chimpanzees observe a human trying to retrieve an out-of-reach object, they sometimes spontaneously retrieve the object and give it to the human although they receive no reward for doing so (Warneken & Tomasello,



2006, Warneken et al., 2007). Chimpanzees will also perform a newly acquired skill (pulling a chain to open a door) so that another chimpanzee can gain access to food; again, the helper obtains no obvious payoff in this situation (Warneken et al., 2007).

18. Chimpanzees reward others, and keep track of others' acts and outcomes. Wild chimpanzees cooperate when hunting. When a subgroup of chimpanzees moves into hunting mode in the presence of monkeys, individuals take up positions in trees or on the ground corresponding to different roles such as chaser and blocker. If the hunt is successful, a monkey will eventually be caught and killed by one of the group of hunters. In the Tai Forest, all participants in a successful hunt then receive a share of the meat from the possessor (Boesch and Boesch-Acherman, 2000). A study of more than 4,600 interactions over food in a captive chimpanzee group recorded remarkably balanced exchanges of food between individuals: not only did food exchanges occur in both directions, individuals were more likely to share with another chimpanzee who had groomed them earlier that day. The observed pattern of grooming and food transfers suggested the presence of reciprocal obligations (de Waal, 1989).

19. In captivity, when presented with an ultimatum game in which both partners needed to cooperate in order to split available rewards equally, chimpanzees and 3-year-old human children behave similarly: both perform in a way that ensures a fair distribution of rewards (Proctor et al., 2013). Other studies have shown that human adults also behave fairly in similar situations. In a trust game in which two chimpanzees can take a small reward for themselves or send a larger reward to a partner and trust that the partner will return some of it, chimpanzees spontaneously trust each other. Furthermore, they flexibly adjust their actions in the game depending on the degree of trustworthiness of the partner (Engelmann, Hermann and Tomasello, 2015).

20. Chimpanzees prefer fair exchanges. In the well-known inequity aversion procedure, a subject and a partner each exchange a token with an experimenter, who in turn rewards each individual with a food item. Two chimpanzees will take turns exchanging with the experimenter as long as the value of the reward that each receives is the same. But when one chimpanzee sees the partner receive a higher-value reward for completing the same exchange (e.g., partner receives a grape, subject receives a small piece of cucumber), she is likely to either refuse to accept the reward or refuse to return the token. In other words, they are intolerant of unfair treatment. Furthermore, as in humans, chimpanzees' responses to reward inequity may vary with the quality of the relationship between subject and partner: they react less emotionally to unfairness if the partner is a close friend or relative (Brosnan, Schiff, & de Waal, 2005).

21. Chimpanzees readily understand social roles and intentions. In Premack and Woodruff's (1978) pioneering study, a chimpanzee was presented with videotaped scenes of a human actor faced with different problems, for example trying to reach inaccessible food, or trying to listen to a gramophone record. When given a choice between a photograph of the solution to a problem (e.g., a stick with which to reach the food, or record player plugged in) alongside decoy photographs (e.g., irrelevant objects, or a gramophone cable plugged in but cut), the chimpanzee consistently chose the correct solution, i.e., that which the actor in the videos required to solve his problem.

22. Chimpanzees distinguish between individuals who have harmful versus prosocial intentions. They will point toward the one of two locations that is baited with hidden food if this results in a naïve, cooperative human finding the food and sharing it with the chimpanzee. (Chimpanzees in the wild have a communicative repertoire of more than 60 distinct nonverbal gestures: Hobaiter and Byrne, 2014). But they also learn to point deceptively in the presence of a

non-cooperative, selfish human – deliberately directing him toward the wrong location (Woodruff & Premack, 1979). Chimpanzees discriminate between prosocial and antisocial individuals based not only on how those individuals behave toward the chimpanzees themselves, but also based on their treatment toward third parties: generous individuals are preferred to selfish individuals (Subiaul et al., 2008).

23. Chimpanzees can adapt quickly to role-reversal in cooperative tasks. In one study, chimpanzees were either trained to follow a human's pointing gesture in order to find food, or trained to gesture to direct a naïve human toward hidden food. Once this relationship was established, the roles were reversed: indicator chimpanzees now became the recipients of the communicative gesture, while previous recipients were now required to actively point for the human. Unlike monkeys, for whom spontaneous role reversal appears very difficult, three quarters of the chimpanzees tested showed immediate comprehension of the changing roles and performed appropriately (Povinelli, Nelson and Boysen, 1992). In conversations with a human, American Sign Language-trained chimpanzees took turns appropriately, and as in humans their conversational turn-taking developed with experience (Hartmann, 2011).

24. Based upon my research and knowledge of nonhuman primate behaviour, including the studies reviewed here, I conclude that chimpanzees understand their own and others' roles in their daily interactions. They show concern for others' welfare, and they have expectations about appropriate behaviour in a range of situations, i.e. social norms. This applies to their interactions with conspecifics, and their interactions with humans. I believe that the weight of evidence suggests the existence of duties and responsibilities within chimpanzee communities.

James R. Anderson
James R. Anderson



Sworn to before me
this 18 day of November, 2015

Notary Public

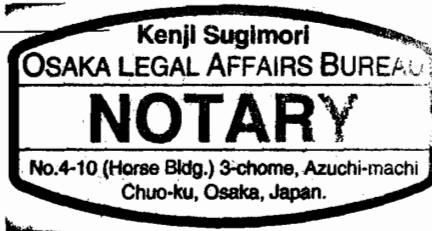
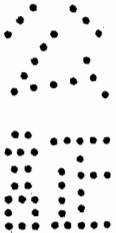


Exhibit A to Anderson Supplemental Affidavit -

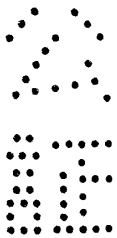
References

[pp. 552 - 555]

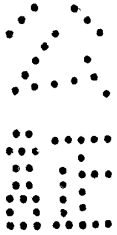
REFERENCES

- 
- Anderson, J. R., & Gallup, G.G., Jr. (2011). Which primates recognize themselves in mirrors? *PLoS Biology*, 9 (3): e1001024. doi:10.1371/journal.pbio.1001024
- Anderson, J. R., & Gallup, G.G., Jr. (2015). Mirror self-recognition: a review and critique of attempts to engineer self-recognition in primates. *Primates*, 56, 317-326.
- Boesch, C., & Boesch-Acherman, H. (2000). *The chimpanzees of the Tai Forest*. Oxford: Oxford University Press.
- Boesch, C., Bolé, C., Eckhardt, N., & Boesch, H. (2010). Altruism in forest chimpanzees: the case of adoption. *PLoS ONE* 5(1): e8901. doi:10.1371/journal.pone.0008901
- Brosnan, S. F., Schiff, H. C., & de Waal, F. B. M. (2005). Tolerance for inequity may increase with social closeness in chimpanzees. *Proceedings of the Royal Society of London B*, 272, 253-258.
- Crawford, M. P. (1937). The cooperative solving of problems by young chimpanzees. *Comparative Psychology Monographs*, 14, 1-88.
- De Veer, M. W., Gallup, G. G., Jr., Theall, L. A., van den Bos, R., & Povinelli, D. J. (2003). An 8-year longitudinal study of mirror self-recognition in chimpanzees (*Pan troglodytes*). *Neuropsychologia*, 41, 229-234.
- de Waal, F. B. M. (1989). Food sharing and reciprocal obligations among chimpanzees. *Journal of Human Evolution*, 18, 433-459.
- de Waal, F. B. M. (1990). *Peacemaking among primates*. Cambridge, MA: Harvard University Press.
- de Waal, F. B. M., & Aureli, F. (1996). Consolation, reconciliation, and a possible cognitive difference between macaques and chimpanzees. In: Russon, A., Bard, K. A., & Parker, S. T. (eds.), *Reaching into thought: the minds of the great apes*. Cambridge: Cambridge University Press, pp. 80-110.
- Engelmann, J. M., Hermann, E., & Tomasello, M. (2015). Chimpanzees trust conspecifics to engage in low-cost reciprocity. *Proceedings of the Royal Society of London B*, 282: 20142803. <http://dx.doi.org/10.1098/rspb.2014.2803>
- Gallup, G. G., Jr. (1970). Chimpanzees: Self-recognition. *Science*, 167, 86-87.
- Gallup, G. G., Jr. (1982). Self-awareness and the emergence of mind in primates. *American Journal of Primatology*, 2, 237-248.
- Hartmann, J. Q. (2011). Timing of turn initiations in signed conversations with

- cross-fostered chimpanzees (*Pan troglodytes*). *International Journal of Comparative Psychology*, 24, 177-209.
- Hobaiter, C., & Byrne, R. W. (2014). The meanings of chimpanzee gestures. *Current Biology*, 24, 1596-1600.
- Hockings, K. J., Anderson, J. R., & Matsuzawa, T. (2006). Road crossing in chimpanzees: A risky business. *Current Biology*, 16, 668-670.
- Hockings, K. J., Humle, T., Anderson, J. R., Biro, D., Sousa, C., Ohashi, G., & Matsuzawa, T. (2007). Chimpanzees share forbidden fruit. *PLoS ONE*, 2(9): e886. doi: 10.1371/journal.pone.0000886
- Lin, A. C., Bard, K. A., & Anderson, J. R. (1992). Development of self-recognition in chimpanzees (*Pan troglodytes*). *Journal of Comparative Psychology*, 106, 120-127.
- Melis, A. P., Hare, B., & Tomasello, M. (2006a). Engineering cooperation in chimpanzees: tolerance constraints on cooperation. *Animal Behaviour*, 72, 275-286.
- Melis, A. P., Hare, B., & Tomasello, M. (2006b). Chimpanzees recruit the best collaborators. *Science*, 311, 1297-300.
- Melis, A. P., & Tomasello, M. (2013). Chimpanzees' (*Pan troglodytes*) strategic helping in a cooperative task. *Biology Letters*, 9(2), doi: 10.1098/rsbl.2013.0009
- Povinelli, D. J., Nelson, K. E., & Boysen, S. T. (1992). Comprehension of role reversal in chimpanzees: evidence of empathy? *Animal Behaviour*, 43, 633-640.
- Premack, D., & Woodruff, G. (1978). Does the chimpanzee have a theory of mind? *Behavioral and Brain Sciences*, 1, 515-526.
- Proctor, D., Williamson, R. A., de Waal, F. B. M., & Brosnan, S. F. (2013). Chimpanzees play the ultimatum game. *Proceedings of the National Academy of Sciences USA*, 110, 2070-2075
- Schel, A. M., Townsend, S. W., Machanda, Z., Zuberbühler, K., & Slocombe, K. E. (2013). Chimpanzee alarm call production meets key criteria for intentionality. *PLoS ONE*, 8(10): e76674. doi:10.1371/journal.pone.0076674
- Subiaul, F., Vonk, J., Okamoto-Barth, S., & Barth, J. (2008). Do chimpanzees learn reputation by observation? Evidence from direct and indirect experience with generous and selfish strangers. *Animal Cognition*, 11, 611-623.
- Suchak, M., Eppley, T. M., Campbell, M. W., & de Waal, F. B. M. (2014). Ape duos and trios: spontaneous cooperation with free partner choice in chimpanzees. *PeerJ*, 2:e417. doi: 10.7717/peerj.417
- von Rohr, C. R., Koski, S. E., Burkart, J. M., Caws, C., Fraser, O. N., Ziltener, A., &



- van Schaik, C. P. (2012). Impartial third-party interventions in captive chimpanzees: A reflection of community concern. *PLoS ONE* 7(3): e32494. doi:10.1371/journal.pone.0032494
- Warneken F., Hare, B., Melis, A. P., Hanus, D., & Tomasello, M. (2007). Spontaneous altruism by chimpanzees and young children. *PLoS Biology*, 5(7): e184. doi:10.1371/journal.pbio.0050184
- Watts, D. P., & Mitani, J. C. (2001). Boundary patrols and intergroup encounters in wild chimpanzees. *Behaviour*, 138, 299-327.
- Woodruff, G., & Premack, D. (1979). Intentional communication in the chimpanzee: The development of deception. *Cognition*, 7, 333-362.
- Yamamoto, S., Humle, T., & Tanaka, M. (2009). Chimpanzees help each other upon request. *PLoS ONE*, 4(19), e7416. doi:10.1371/journal.pone.0007416
- Yamamoto, S., Humle, T., & Tanaka, M. (2012). Chimpanzees' flexible targeted helping based on an understanding of conspecifics' goals. *Proceedings of the National Academy of Sciences USA*, 109, 3588-3592.



平成 27 年登簿第 741 号
認 証



囑託人 ANDERSON JAMES RUSSELL は、本職の面前で添付書面に署名した。

I, hereby certify that this document was signed before me and that the signature appearing on same is the true signature of ANDERSON JAMES RUSSELL.

よって、これを認証する。

平成 27 年 11 月 18 日、本公証人役場において
大阪市中央区安土町3丁目4番10号

大阪法務局所属
公証人

Notary

杉森 研二
Kenji Sugimori
kenji Sugimori



証 明

上記署名は、大阪法務局所属公証人の署名に相違ないものであり、かつ、その押印は、真実のものであることを証明する。

平成 27 年 11 月 18 日 富田 一彦
大阪法務局長



APOSTILLE

(Convention de La Haye du 5 octobre 1961)

1. Country: JAPAN

This public document

2. has been signed by Kenji Sgimori

3. acting in the capacity of Notary of the Osaka Legal Affairs Bureau

4. bears the seal/stamp of Kenji Sugimori , Notary
Certified

5. at Osaka

6. NOV. 18. 2015

7. by the Ministry of Foreign Affairs

8. 15-No. 004635

9. Seal/stamp:

10. Signature



Naomi Asano

Naomi ASANO

For the Minister for Foreign Affairs

Supplemental Affidavit of Christophe Boesch, sworn to October 14, 2015
[pp. 556 - 565]

FILED: NEW YORK COUNTY CLERK 12/02/2015 05:12 PM

INDEX NO. 162358/2015

NYSCEF DOC. NO. 37

RECEIVED NYSCEF: 12/02/2015

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF NEW YORK

In the Matter of a Proceeding under Article 70 of the
CPLR for a Writ of Habeas Corpus,

THE NONHUMAN RIGHTS PROJECT, INC., on
behalf of TOMMY,

Petitioner,

-against-

**SUPPLEMENTAL
AFFIDAVIT OF
CHRISTOPHE BOESCH**

PATRICK C. LAVERY, individually and as an officer of
Circle L Trailer Sales, Inc., DIANE LAVERY, and
CIRCLE L TRAILER SALES, INC.,

Index No.

Respondents.

FEDERAL REPUBLIC OF GERMANY)
)
FREE STATE OF SAXONY) ss :
)
CITY OF LEIPZIG)

Christophe Boesch being duly sworn, deposes and says:

Introduction and Qualifications

1. My name is Christophe Boesch. I received a Maturite scientifique from College Calvin, Geneve in 1970, a Diplome de biologiste from the University of Geneva, Switzerland in 1975, and a Ph.D. from the University of Zurich, Switzerland in 1984. I work and reside in Leipzig, Germany.

2. I submit this Affidavit in support of Petitioner, The Nonhuman Rights Project, Inc.'s ("NhRP"), petition for a writ of habeas corpus on behalf of Tommy. I am a non-party to this proceeding.

3. I am currently an Honorary Professor in the Department of Zoology at the University of Leipzig, Germany where I have been a member of the faculty for 14 years. I am also the Director of the Max Planck Institute of Evolutionary Anthropology, and Founder and President of the Wild Chimpanzee Foundation. I have directed 16 diploma theses, 32 Ph.D. theses for both European and American students, and the post-doctoral work for 12 students. I have also regularly taught classes in Behavioural Ecology, Evolutionary Biology, and Population Biology in the 22 years that I have been teaching.

4. I have twice been awarded the Great Apes Fellowship of the Leakey Foundation in Pasadena, California. In addition, I received the Prix Cortaillod for talented Swiss scientists under 35 years old from the University of Neuchâtel, Switzerland, and was awarded the Medal “Officier de l'Ordre National” by the president of Côte d'Ivoire Alassane Ouattara in 2013.

5. I have been a member of the International Primate Protection League, the IUCN/SSC Primate Specialist Group, and the International Primatological Society since 1986. I am also currently a member of: (1) the Behavior and Brain Sciences Associates (since 1991); (2) the Pan Africa News Editorial Board (since 1997); (3) Steering Committee of the World Heritage Species Status Taskforce (since 2002); and (4) the IUCN/SSC/ Section of the Great Apes (since 2003). Additionally, I am the Co-chairman of the Scientific Committee of the Great Apes Survival project of the UNEP/UNESCO (since 2003). I previously served as a: (1) scientific board member of the Fyssen Foundation, Paris (1985-1989); (2) consultant to the World Wide Fund for Nature International (1987-1988); (3) Project Coordinator for the World Wide Fund for Nature International in the Taï National Park, Ivory Coast (1988-1992); (4) executive council member of the Committee for the Care and Conservation of Chimpanzee (1988-1992); and (5) member of the Society for the study of Animal Behaviour (1993-1998).

6. During my career, I have served as a grant reviewer for the following institutions and foundations: NIH, National Science Foundation (USA), Swiss National Science Foundation, Leakey Foundation, National Geographic Society, Fulbright Foundation, and Wenner-Gren Foundation. Additionally, I have served as an ad hoc reviewer for a number of prominent peer-reviewed journals including: *Behavioural and Brain Sciences*, *Animal Behaviour*, *Nature*, *Behaviour*, *Ethology*, *Primates*, *International Journal of Primatology*, *American Journal of Primatology*, *Folia Primatologica*, *American Journal of Physical Anthropology*, *Current Anthropology*, *Behavioural Ecology*, *Proceedings of the National Academy Science, Series B*, *Quarterly Review of Biology*, *American Naturalists*, *Journal of Human Evolution*, *Proceedings of the Royal Society: Biological Sciences*, and *Journal of Evolutionary Biology*.

7. I have specialized in the study of wild chimpanzees for approximately 35 years. In 1976, I spent 8 months in the Taï National Park, Ivory Coast conducting a preliminary study on the behaviour of wild chimpanzees. I have completed on-going studies of these chimpanzees since 1979. My research on these chimpanzees has principally focused on ecology, social organisation, tool-use, hunting, cooperation, food-sharing, inter-community relationships and cognitive capacities. I also conducted a comparative field study on the chimpanzees of Gombe Stream National Park, Tanzania in 1990 and 1992 (April to July). In 1999 (August to October), I undertook a comparative field study on the chimpanzees of the Mahale Mountains National Park, Tanzania.

8. I have authored or co-authored 14 books on primate behavior, cognition, and evolution. Some of the most relevant include: (1) *Tool Use in Animals - Cognition and Ecology* (2013, Cambridge: Cambridge University Press); (2) *Wild Cultures: A Comparison between Chimpanzee and Human Cultures* (2012, Cambridge: Cambridge University Press); (3) *The Real*

Chimpanzee: Sex Strategies in the Forest (2009, Cambridge: Cambridge University Press); (4) *Feeding Ecology in Apes and Other Primates* (2006, Cambridge: Cambridge University Press); (5) *Regional Action Plan for Chimpanzees and Gorillas in West Equatorial Africa* (2005, Washington: Conservation International); (6) *Behavioural Diversity in Chimpanzees and Bonobos* (2002, Cambridge: Cambridge University Press); and (7) *The Chimpanzees of the Tai Forest: Behavioural Ecology and Evolution* (2000, Oxford: Oxford University Press).

9. Since 1978, I have published at least 215 articles on the cognitive and learning capabilities, intelligence, communication, or language skills of apes and chimpanzees specifically. These articles are published in many of the world's most-cited peer-reviewed scientific journals, including: *Science*, *Nature*, *Current Biology*, *Journal of Comparative Psychology*, *Conservation Biology*, *American Journal of Primatology*, *International Journal of Primatology*, *Ecology and Evolution*, *Animal Behaviour*, *Journal of Human Evolution*, *American Journal of Physical Anthropology*, *Animal Cognition*, *Journal of General Virology*, *Folia Primatologica* (the official journal of the European Federation for Primatology), *Biological Conservation*, *Molecular Ecology*, and *Natural History*. I have also published articles in *The Oxford Handbook of Comparative Evolutionary Psychology*, *Proceedings of the National Academy of Sciences* and in *Proceedings of the Royal Society B*. Several articles of mine have also appeared in *BBC Wildlife Magazine*. Specific topics of these publications include: ecology and cognition of tool use in chimpanzees, chimpanzee culture, meat eating and hunting specialization in chimpanzees, botanical skills in chimpanzees, long-term spatial memory in chimpanzees, chimpanzee conservation, female gregariousness in chimpanzees, social behavior and cognition in primates, habitat use and competitive exclusion among sympatric chimpanzee, gorilla and elephant, cultural differences between neighboring chimpanzee communities,

reciprocity and trades in wild chimpanzees, locomotion and tool-use in chimpanzees, altruism in forest chimpanzees, adoption in chimpanzees, paternity and social rank in wild chimpanzees, feeding competition in chimpanzees, male aggression and sexual coercion in chimpanzees, reciprocation of grooming in chimpanzees, vocal, gestural and locomotor responses of wild chimpanzees to intruders, chimpanzee population size, social bonds in chimpanzees, sophisticated Euclidean maps in forest chimpanzees, integration of chimpanzee and human culture, wild ape health, infant mortality cycles in chimpanzees, sexual swelling cycles in chimpanzees, food choice in chimpanzees, paternity in wild chimpanzees, locomotor behavior in chimpanzees, cooperative hunting in chimpanzees, bisexually-bonded ranging in chimpanzees, group-specific calls in chimpanzees, effects of community size on wild chimpanzees social organization, decision-making in conflicts of wild chimpanzees, mortality rates in chimpanzees, female reproductive strategies, buttress drumming by wild chimpanzees, innovation in wild chimpanzees, predator-prey systems in chimpanzees, nut cracking in wild chimpanzees, handedness in chimpanzees, symbolic communication in wild chimpanzees, teaching in wild chimpanzees.

10. My Curriculum Vitae sets forth my educational background and experience and is annexed to my original Affidavit, filed herewith.

Basis for Opinions

11. The opinions I state in this Affidavit are based on my professional knowledge, education, training, and 37 years of research and field work with chimpanzees, as well as my knowledge of peer-reviewed literature about primatology published in the world's most respected journals, periodicals and books that are generally accepted as authoritative in the field

of primatology, many of which were written by myself and colleagues with whom I have worked for many years and with whose research and field work I am personally familiar.

12. A full reference list of peer-reviewed literature cited herein is annexed hereto.

Opinions

13. Scientific knowledge about chimpanzees is vast and has been increasing at an exponential rate. We must therefore be aware that what we know now is still only a small fraction of what chimpanzees are capable of.

14. Here I discuss several areas particularly relevant to the ability of chimpanzees to bear duties and responsibilities as evidenced by the social obligations that chimpanzees fulfill in their social life in the wild.

Cooperation and Group belonging: Solidarity in between-group contexts

15. Territories are aggressively defended in all chimpanzee populations that have been studied and the participants in patrols controlling the borders are mainly the adult males. Whenever intruders are spotted, males on a voluntary basis converge to defend their territory as a team (Goodall 1968, Mitani et al. 2002, Boesch and Boesch-Achermann 2000). If not enough males are present, the firsts silently sit down and wait for other group members to join. Only once a large enough group is built are they going to confront the others (Boesch and Boesch-Achermann 2000, Boesch et al. 2009, Boesch 2009). This reveals some expectations about the social participations of group members.

16. Impressive supports by male group members are provided to rescue isolated individuals that have been taken prisoner by intruders (Goodall et al. 1979, 1986, Boesch 2009, 2012). Outnumbered individuals during intergroup encounter were observed to sustain severe injuries in 40% of the cases, leading to death in 15% of the severe attacks (Mitani et al. 2002,

Boesch et al. 2008). In one example in the Taï forest, a single adult male with an adopted infant on his back rushed for 600 meters to rescue an adult female from his group that was trapped and beaten up by 5 male intruders. His appearance created enough of a havoc to allow the female to escape. In Taï chimpanzees, such risky supports are provided in 28% of the intergroup encounters (Boesch et al. 2008). This spontaneous high level of altruism toward group members in this chimpanzee population reveals the sense of obligation felt by them to help and protect one another.

Cooperation and Group belonging: Within-group solidarity

17. Help and tending of injured group members: Taï chimpanzee group members have been seen to help and tend the injuries of wounded individuals for extended periods of time (see also my previous affidavit). What is striking in this helping of others is that upon hearing the alarm calls of an attacked individual (through a leopard or another chimpanzee), the males hearing the calls within seconds would make loud supporting whaa-barks, reassure one another and rush towards to caller to help. The rapidity of the help is decisive in the case of a leopard attack (Boesch 1991, 2009). I have always seen all males visibly present in rush to support, so as if this within-group solidarity was obvious to them. If callers had sustained injuries, the rescuers and other group members would converge towards the injured and clean and lick the wounds for many hours, and in some cases such help would extended for many days as long as the wounds were not healed and presented a risk of infection.

18. Important social contributions are rewarded in hunting context: The striking fact in the hunting context is the very high level of cooperation between the males that act as a team to capture small monkeys up in the trees (Boesch and Boesch 1989, 2000, Boesch 2002, 2009, Mitani et al. 2002). In Taï, once a capture has been made, the meat-sharing rules favor the

hunters; males receive more meat if they participated in the hunt and even more so if they made an important contribution to the hunt (Boesch 1994, 2002, 2009). What is intriguing is that hunting roles requiring anticipation of the prey movements are as equally well rewarded as capturing the prey, even if the individuals doing such movements were not making a capture. Somehow, the group members realize that anticipating a prey is an essential part of a successful hunting team and they value this equally high than the one doing the capture itself (Capturing the prey and performing complex anticipation ensures the same amount of meat, Boesch 2002). Less important hunting movements, such as chasing or driving the prey, are not valued so highly by other group members, as they rarely make a decisive contribution to the capture (Boesch 2002, 2012). This higher social valuing of hunting contribution by other group members allows for this cooperative system to be stable (Boesch 1994, Packer and Rutan 1988, de Waal 1996).

19. Punishment is part of the meat sharing rules: The rewarding of certain action leads to the passive punishment of individuals that are looking to access meat, but because they did not contribute to the hunt are only meagerly receiving some: Individuals that were present during the hunt but did not participate in it, received 2.6 times less meat than hunters (Boesch 2002, 2009). This rewarding of one's hunting contribution is often in conflict with dominance hierarchy (as dominant males are not always present during a hunt or simply not hunting), and despite the impressive and sometimes violent attempts by the dominant males to access the meat, hunters will be reliably allowed access to more meat by the sharing group (This observation applies only to the Tai chimpanzees and not to other chimpanzee populations where the meat sharing patterns follow different rules [e.g. Goodall 1986, Nishida et al. 1992, Uehara et al. 1992, Watts and Mitani 2002]). Regularly, we see dominant males, which want to access meat, display violently towards meat eaters, but access to meat is denied by the group of chimpanzees present


(Boesch and Boesch 1989). In other feeding contexts, like in fruiting trees or when large amounts of fruit are clustered on the ground, alpha males can ascertain their priority of access; Only in meat eating is his access denied or limited, when he did not participate in the hunt.

20. Informing group members about danger: Chimpanzees have demonstrated a high sense of solidarity towards ignorant group members, which they would inform about the presence of a danger, like a snake for example. In a neat series of experiments, it was possible to show that if a chimpanzee discovers a snake near a path and he is followed at some distance by another chimpanzee that is ignorant about the danger, the first individual will make alarm calls until the follower sees the danger. In addition, he will position himself such that his body is pointing towards the snake. If, however, he is followed by a chimpanzee that is aware of the presence of the snake, he will remain silent (Crockford et al. 2012). This was observed with chimpanzees living in the Budongo forest in Uganda. This reveals that such a high sense of within-group solidarity is not restricted to one population or a response to one specific environmental condition, but is more a general property of social life in chimpanzees.

21. High investment to support weak individuals: Evidence from both captive and wild chimpanzees indicates that they are capable of highly developed empathic abilities (de Waal, 1990). Young chimpanzees are breast-fed and cared for 5 years by their mothers, so that when they loose them they remain especially vulnerable. Adoption of orphans is rather common in chimpanzees, and as seen in other primate species, females are often doing the adoption of orphans (Goodall 1986, Riedman 1982, Thierry and Anderson 1987). In Taï chimpanzees, we observed that half of the adoptions were done by adult males, which was intriguing, and in a few cases we could show that they were not genetically related to the adopted ones (Boesch et al. 2010). Adoption is a very costly behaviour as it may require carrying the infant over long

distances for days and months, sharing the nest and food with them and protecting them in cases of social squabbles.

22. Based upon my research and expertise in this field, I support the NhRP's petition for a writ of habeas corpus on behalf of Tommy and the application of common law personhood to chimpanzees.



Christophe Boesch

Sworn to before me
this 14 day of October, 2015

Notary Public

**Exhibit A to Boesch Supplemental Affidavit -
References
[pp. 566 - 569]**

REFERENCES

- Boesch, C. 1991. The effects of leopard predation on grouping patterns in forest chimpanzees. *Behaviour*, 117 (3-4): 220-242.
- Boesch, C. 2009. *The Real Chimpanzee: Sex Strategies in the Forest*. Cambridge: Cambridge University Press.
- Boesch, C. 2012. *Wild Cultures: A Comparison Between Chimpanzee And Human Cultures*. Cambridge: Cambridge University Press.
- Boesch, C. and Boesch, H. 1989. Hunting behavior of wild chimpanzees in the Tai National Park. *American Journal of Physical Anthropology*, 78: 547-573.
- Boesch, C., and Boesch-Achermann, H. (2000) *The Chimpanzees of the Tai Forest: Behavioural Ecology and Evolution*. Oxford: Oxford University Press.
- Boesch, C., Crockford, C., Herbinger, I., Wittig, R., Moebius, Y. and Normand, E. 2008. Intergroup conflicts among chimpanzees in Tai National Park: lethal violence and the female perspective. *American Journal of Primatology*, 70: 1-14.
- Boesch, C., Bolé, C., Eckhardt, N. and Boesch, H. 2010. Altruism in chimpanzees: the case of adoption. *PLoS One*, 5(1): e8901.
- Crockford, C., Wittig, R., Mundry, R. and Zuberbuehler, K. 2012. Wild chimpanzees inform ignorant group members of danger. *Current Biology*, 22: 1-5.
- Goodall, J. (1986) *The Chimpanzees of Gombe: Patterns of Behavior*. Boston: Belknap Press of the Harvard University Press.
- Goodall, J., Bandura, A., Bergmann, E., Busse, C., Matam, H., Mpongo, E., Pierce, A. and Riss, D. 1979. Inter-community interactions in the chimpanzee populations of the Gombe National Park. In *The Great Apes* (Eds. D. Hamburg and McCown, E.), pp. 13-53. Menlo Park, Calif.: Benjamin/ Cummings.
- Mitani, J., Watts, D. and Muller, M. 2002. Recent development in the study of wild chimpanzee behaviour. *Evolutionary Anthropology*, 11(1): 9-25.
- Nishida, T., Hasegawa, T., Hayaki, H., Takahata, Y. and Uehara, S. 1992. Meat-sharing as a coalition strategy by an alpha male chimpanzee? In *Topics in Primatology: vol. 1. Human Origins* (Eds. T. Nishida, W. C. McGrew, P. Marler, M. Pickford and de Waal F.), pp. 159-174. Basel: Karger AG.
- Packer, C. and Rutan, L. 1988. The evolution of cooperative hunting. *American Naturalist*, 132(2):159-198.
- Riedman, M. 1982. The evolution of alloparental care and adoption in mammals and birds. *The Quarterly Review of Biology*, 57(4): 405-435.
- Thierry, B. and Anderson, J. 1987. Adoption in anthropoid primates. *International Journal of Primatology*, 7(2): 191-216.

- Uehara, S., Nishida, T., Hamai, M., Hasegawa, T., Hayaki, H., Huffman, M., Kawanaka, K., Kobayashi, S., Mitani, J., Takahata, Y., Takasaki, H. and Tsukahara, T. 1992. Characteristics of predation by the chimpanzees in the Mahale Mountains National Park, Tanzania. In: Topics in Primatology, Vol: 1: Human Origins (Eds. by T. Nishida, W. C. McGrew, P. Marler, M. Pickford and de Waal F.), pp: 143-158. Tokyo: University of Tokyo Press.
- Waal, de F. 1996. Good Natured: The Origins of Right and Wrong in Humans and Other Animals. Cambridge, MA: Harvard University Press
- Watts, D. and Mitani, J. 2002. Hunting and meat sharing by chimpanzees of Ngogo, Kibale National Park, Uganda. In Behavioural diversity in chimpanzees and bonobos (Eds. Boesch, C., Hohmann, G. And Marchant, L.), pp. 244-255. Cambridge: Cambridge University Press.

FileNo. 2492 /2015

The following notarial act is just a confirmation of signature.

I hereby certify that the above is the true signature, subscribed in my presence, of

Mr. **Prof. Christophe Bösch**

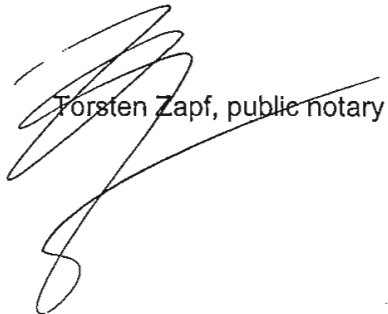
Date of Birth: 11-08-1951 in St. Gallen

adress: Bleichertstraße 2 in 04155 Leipzig

-identified by his French Passport No. 13BC63470-

Leipzig, 14/10/2015




Torsten Zapf, public notary

APOSTILLE

(Convention de La Haye du 5 octobre 1961)

1. Land: **Bundesrepublik Deutschland**

Diese öffentliche Urkunde

2. ist unterschrieben von **Herrn Zapf**3. in seiner Eigenschaft als **Notar**

4. sie ist versehen mit dem Siegel des

Notars in Leipzig Torsten Zapf

Bestätigt

5. in **Leipzig**6. am **20.10.2015**7. durch **den Präsidenten des Landgerichts**8. unter Nr. **910A-731/2015**

9. Stempel/Siegel

10. Unterschrift



Karl Schreiner
Präsident
des Landgerichtes Leipzig



Affidavit of Jane Goodall, sworn to September 21, 2015

[pp. 570 - 579]

FILED: NEW YORK COUNTY CLERK 12/02/2015 05:12 PM

NYSCEF DOC. NO. 38

INDEX NO. 162358/2015

RECEIVED NYSCEF: 12/02/2015

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF NEW YORKIn the Matter of a Proceeding under Article 70 of the
CPLR for a Writ of Habeas Corpus,THE NONHUMAN RIGHTS PROJECT, INC., on
behalf of TOMMY,

Petitioner,

-against-

**AFFIDAVIT OF JANE
GOODALL, Ph.D, DBE**

Index No.

PATRICK C. LAVERY, individually and as an officer of
Circle L Trailer Sales, Inc., DIANE LAVERY, and
CIRCLE L TRAILER SALES, INC.,

Respondents.

STATE OF NEW YORK)
) ss:
COUNTY OF NY)

Jane Goodall being duly sworn, deposes and says:

Introduction and Qualifications

1. My name is Jane Goodall. I am the founding director and president of the Jane Goodall Institute, UN Messenger of Peace, primatologist, ethologist, and anthropologist. I received a Ph.D in Ethology from Cambridge University in 1966, and have been awarded honorary degrees from 45 Universities from nearly every continent, including institutes of higher learning in Africa, Asia, Europe, North America, and South America.

2. I submit this Affidavit in support of Petitioner, The Nonhuman Rights Project, Inc.'s ("NhRP"), petition for a writ of habeas corpus brought on behalf of Tommy. I am a non-party to this proceeding.

3. In 1977, I founded the Jane Goodall Institute, which is considered a global leader in the effort to protect chimpanzees and their habitats. The Institute is widely recognized for innovative, community-centered conservation and development programs in Africa, and the "Jane Goodall's Roots & Shoots" program is a global environmental and humanitarian youth program comprised of nearly 150,000 members in more than 120 countries. Although the majority of my career was spent completing field research on chimpanzees in Tanzania, I have been appointed the following academic positions (in reverse chronological order): (1) Visiting Professor, Department of Psychiatry and Program of Human Biology, Stanford University; (2) Honorary Visiting Professor in Zoology, University of Dar es Salaam, Tanzania; (3) Adjunct Professor of the Department of Environmental Studies, Tufts University, School of Veterinary Medicine; (4) Distinguished Adjunct Professor, Departments of Anthropology and Occupational Therapy, University of Southern California; and (5) Andrew D. White Professor-at-Large, Cornell University.

4. During my career I have received over 100 awards from a variety of wildlife conservation, academic, media, government, and nongovernment organizations. Most notably, I received the Kyoto Prize in Basic Science in 1990, the United Nations "Messenger of Peace Appointment," was named a Dame of the British Empire in 2002, awarded the French Legion of Honor in 2006, the United Nations Educational, Scientific and Cultural Organization's Gold Medal Award in 2006, and the United States Department of the Interior, Secretary's Lifetime Achievement Award in 2009. Other awards that I have received include: (1) the Centennial

Award from the National Geographic Society in 1988; (2) the Anthropologist of the Year Award in 1989; (3) the Edinburgh Medal, UK in 1991; (4) the Rainforest Alliance Lifetime Achievement Award in 1993; (5) the Commander of the British Empire, presented by Her Majesty Queen Elizabeth II in 1995; the National Science Board Public Service Award in 1998; (6) the International Peace Award in 1999; (7) the Harvard Medical School's Center for Health and the Global Environment award in 2003; (8) the Nierenberg Prize for Science in the Public Interest in 2004.

5. I have been affiliated with 90 wildlife, conservation, humanitarian, professional and governmental organizations. The most relevant include: (1) Member of the Board of the Orangutan Foundation since 1994; (2) President of Advocates for Animals from 1998 to May 2008; (3) Member of the Board, Save the Chimps / Center for Captive Chimpanzee Care from 2000 to 2007; (4) Member of the Honorary Board, Albert Schweitzer Institute since 2003; (5) Member of the Advisory Board, Initiative for Animals and Ethics, Harvard University since 2004; (6) Member of the Advisory Board, Chimps Inc., from 2005; (7) Honorary Board, Center for Great Apes since 2012; and (8) Member of the Board of Directors of the Nonhuman Rights Project, Inc. since 1996.

6. My research specialization is in the study of the behaviour and ecology of chimpanzees and baboons. Since 1960, I have conducted field research on chimpanzees and baboons beginning with my research on the behaviour of free-living chimpanzees in Gombe National Park, Tanzania. From 1967 to 2003 I served as the Scientific Director of the Gombe Stream Research Center in Tanzania. From 1972 to 2003, I also served as the Director of Research on the behaviour of the olive baboon at the Gombe National Park, Tanzania.

7. I have written or co-authored more than 30 books, including: (1) *My Friends the Wild Chimpanzees* (1967, National Geographic Society); (2) *In the Shadow of Man* (1971, Boston: Houghton Mifflin; London: Collins); (3) *The Chimpanzees of Gombe: Patterns of Behaviour* (1986, Harvard University Press); (4) *Through a Window: My Thirty Years with the Chimpanzees of Gombe* (1990, London: Weidenfeld & Nicolson; Boston: Houghton Mifflin); (5) *Visions of Caliban* (1993, Boston: Houghton Mifflin); (6) *Brutal Kinship* (1999, New York: Aperture Foundation); (7); *Reason For Hope: A Spiritual Journey* (1999, Warner Books, Inc); (8) *The Ten Trusts: What We Must Do To Care for the Animals We Love* (2002, San Francisco: Harper San Francisco); (9) *Harvest for Hope: A Guide to Mindful Eating* (with Gary McAvoy and Gail Hudson)(New York: Warner Books); (10) *2005 50 Years at Gombe* (2010, New York: Stewart, Tabori, and Chang); (11) *Hope for Animals and Their World: How Endangered Species Are Being Rescued from the Brink* (with Thane Maynard and Gail Hudson)(2009, New York: Grand Central Publishing); (12) *Seeds of Hope: Wisdom and Wonder from the World of Plants* (with Gail Hudson)(2014, New York: Grand Central Publishing). Additionally, *In the Shadow of Man* was translated into 48 different languages, while *Through a Window: My Thirty Years with the Chimpanzees of Gombe*, and *Reason for Hope: A Spiritual Journey* were translated into 15 and 13 languages respectively. *Visions of Caliban* was honoured by the New York Times as a “Notable Book” for 1993, as well as Library Journal, which awarded it “Best Sci-Tech Book” for 1993.

8. Since 1963, I have been featured in approximately 20 science-related films, produced by networks including the National Geographic, HBO, BBC, PBS, Animal Planet / Discovery Communications. HBO’s film “Chimps, So Like Us” was nominated for the 1990 Academy Award.

9. I have published more than 80 articles, including peer-reviewed articles in the world's most-cited scientific journals: *Nature*, *Science*, *The American Journal of Psychiatry*, *The American Journal of Physical Anthropology*, *The American Journal of Primatology*, *The International Journal of Primatology*, *Conservation Biology*, *The New York Academy of Science*, *Philosophical Transactions of the Royal Society*, *Folia Primatologica* (the official journal of the European Federation for Primatology), *Journal of Medical Primatology*, *Journal of Human Evolution*, *Primates*, *Journal of Virology*, *Zoological Society of London*, and *the Society for Reproduction and Fertility*. My articles have also been featured in *National Geographic* and *Science News*. These publications covered topics on the behaviour, ecology, welfare, and conservation of chimpanzees, baboons and other monkeys. Specific topics of these publications include: tool-use, diet, feeding behaviour, expressive movements, communication, play, reproductive behaviour, reproductive constraints on aggressive competition, mother-child bonds, culture, aggressive behaviour, predation, community behaviour, mortality, ranging patterns, continuities between chimpanzee and human behaviour, ecological factors, sleeping behaviour, cannibalism, competitive behaviour, inter-community interactions with humans, population dynamics, infanticide, innovative behaviour, shunning, skeletal biology, gene flow and evolution of chimpanzees, social structure, psychosocial needs, simian immunodeficiency virus, unusual violence, anogenital swelling in pregnant chimpanzees, appropriate conditions for maintenance of chimpanzees.

10. I regularly give lectures and take part in international symposia on primatology. I currently spend more than 300 days out of the year travelling around the world speaking on primate issues.

11. My Curriculum Vitae sets forth my educational background and experience and is annexed hereto.

Basis for Opinions

12. The opinions I state in this Affidavit are based on my professional knowledge, education, training, and over 50 years of observing and writing about chimpanzees, including my 45-year study of social and family interactions in the wild chimpanzees of Gombe Stream National Park, Tanzania and my continuing work on chimpanzee behaviour, welfare and conservation through the Jane Goodall Institute.

Opinions

13. The long-term nature of the research I conducted on wild chimpanzees in Gombe Stream National Park provided a unique opportunity to observe and study the lives of chimpanzees in nature over many years and generations. During this period of continuous study my colleagues and I have learned much of enormous significance about chimpanzee psychology and society.

14. There is ample proof from studies of chimpanzee behavior, both in the wild and in captivity, that chimpanzees have well-defined duties and responsibilities. Following are some examples.

15. The duties and responsibilities of a mother towards her offspring are many and often onerous. For three years the infant is dependent on breast milk, and continues to suckle though less often for the next two years until the next baby is born. Throughout this period the mother continues to carry the infant, at first clinging to her belly and then riding on her back. During this time the mother waits for the child before moving off. And she constructs a nest large enough for herself and her child until the next baby is born.

16. The mother's duties and responsibilities do not end when a new infant is born. For the next couple of years she still waits for the older child before moving from one place to another. When the older child is male, he is often anxious to join groups of adult males, particularly when there is a lot of excitement. Mothers with small infants often prefer to avoid such groups. Sometimes a mother, after setting off in her chosen direction, stops when her six-year-old son whimpers and refuses to follow, going some distance towards the males. Each time she moves, he cries louder. Some mothers then give in, and join the males in order to provide support for their sons.

17. An important component of maternal responsibility is to provide support for her child. During a play session her infant sometimes gets hurt and screams – the mother will hasten to support her child, reprimanding the rough playmate even though this may entail retaliation from a more dominant mother.

18. There have been many instances when mothers have gone to help their fully-grown offspring.

19. In the wild the father plays no role in family life. We can now determine paternity from DNA profiling of fecal samples, but as a female may be mated by most or all males during periods of receptivity, it seems unlikely that a male recognizes his own biological offspring. However, most adult males of a community act in a paternal way to all infants in their community, rushing to their aid when necessary. On one occasion two hunters (human) shot a female chimpanzee, seized her infant, and tried to push it into a sack. As the infant screamed, a male chimpanzee rushed out of the forest, attacked the two men, grabbed the baby, and disappeared into the forest. Both hunters ended up in hospital. There are many other tales of

adult males protecting – or trying to protect – infants from hunters across Africa. Tragically they often get killed themselves.

20. Juveniles and adolescents very frequently act responsibly towards their infant siblings. (When I refer to ‘brother’ and ‘sister’ I mean maternal brother and sister.) One nine-year-old female, who had run in terror from a large poisonous snake, nevertheless climbed down from her tree to gather up and carry to safety her three-year-old brother, who seemed unaware of the danger. A different adolescent female prevented her infant brother from following their mother when the trail passed through a clump of tall grasses. He screamed loudly, but she persisted until the grasses were behind them – I examined the place – it was infested with tiny ticks. (Subsequently the mother sat picking ticks off herself for a long time.)

21. An older sibling will almost always adopt an infant if their mother dies. Under the age of three the infant, dependent on breast milk, will die. One five-year-old male carried his one and a half year old sister around until she died, a few months later. Older infants usually survive when they are adopted. This responsibility is clearly not socially advantageous for the young caregiver, who spends a lot of time and energy carrying out his or her duties.

22. We now know that unrelated individuals may adopt orphaned infants. At Gombe a 12-year-old adolescent male cared for a three and a half year old male orphan, and definitely saved his life. His sense of responsibility was most impressive when he ran to seize the orphan when he got too close to socially roused males – despite the fact that adolescent males normally keep well away from the adult males at such times. He often got beaten up for his altruistic behavior, but this did not prevent him from acting in the same way the next time his help was needed.

23. The adult males of a community are responsible for patrolling their territory, chasing away or attacking individuals from neighboring communities -- this serves to protect and sometimes increase resources for their own females and young. This requires close cooperation and gang attacks. Even two males who may be engaged in challenging each other for social dominance within the community will join in an attack on a stranger.

24. None of the many field staff, students and other researchers who have worked among the Gombe chimps for 55 years have ever been really harmed. We have been hit, stamped on and dragged during displays, but never received bite wounds. One male in particular, Frodo, was continually charging people and hitting them, and he sometimes pushed me over. It is clear, however, that the chimpanzees only intend to impress, to emphasize their superiority. They could so easily harm us badly, even kill us. On three separate occasions, when I was above a very steep drop, Frodo charged up but did not make contact. Our videographer, Bill Wallauer, reported four such occasions. It was very clear to us that Frodo understood what would have happened on those seven occasions. The same thing happened to me once with a different alpha male. They are clear examples of intention *not* to harm.

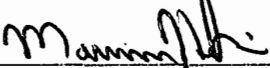
25. I have written about a male chimpanzee in captivity who rescued his human caretaker, Mark Cusano, with whom he had a close relationship, from a very bad attack from three adult females. Mark told me that the chimp had saved his life.

26. Based upon my research and expertise in this field, I support the NhRP's petition for a writ of habeas corpus on behalf of Tommy and the application of common law personhood to chimpanzees.



Jane Goodall, Ph.D, DBE

Sworn to before me
this 21 day of September, 2015



Notary Public

MAURICE HALLIVIS
Notary Public, State of New York
No. 01HA6007604
Qualified in New York County
Commission Expires May 26, 2018

the Jane Goodall Institute

Curriculum Vitae**Jane Goodall, Ph.D., DBE****Founder, the Jane Goodall Institute****UN Messenger of Peace**www.janegoodall.org

Personal

Date of Birth: 3rd April 1934.

Nationality: British

Marital Status: Married to Baron Hugo van Lawick, 1964 (divorced);

Married to Hon. Derek Bryceson, M.P., 1975 (widowed)

Children: Hugo Eric Louis van Lawick (1967 -)

Education

1950 School Certificate (London) with Matriculation Exemption

1952 Higher Certificate (London)

1962 Entered Cambridge University, United Kingdom, as Ph.D. candidate in Ethology under Professor Robert Hinde

1966 Ph.D. in Ethology, Cambridge University, United Kingdom

Research

From 1960 Behavior of free-living chimpanzees in Gombe National Park, Tanzania

1968-1969 Social behavior of the spotted hyena, *Crocutta crocutta*, Ngorongoro Conservation Area, Tanzania

1967-2003 Scientific Director of the Gombe Stream Research Centre, Tanzania

1972-2003 Director of research on the behavior of the olive baboon, *Papio anubis*, Gombe National Park, Tanzania

Academic Appointments

1971 – 1975 Visiting Professor, Department of Psychiatry and Program of Human Biology, Stanford University, Calif., USA

From 1973 Honorary Visiting Professor in Zoology, University of Dar es Salaam, Tanzania

1987 – 1988 Adjunct Professor of the Department of Environmental Studies, Tufts University, School of Veterinary Medicine, Boston, Mass., USA

1990 Associate, Cleveland Natural History Museum, Cleveland, OH, USA

1990 Distinguished Adjunct Professor, Departments of Anthropology and Occupational Therapy, University of Southern California, Calif., USA

1996 – 2002 Andrew D. White Professor-at-Large, Cornell University, NY, USA

Professional Affiliations

From 1974 Trustee, L.S.B. Leakey Foundation, USA

From 1976 Trustee, the Jane Goodall Institute for Wildlife Research, Education and Conservation, USA

From 1981 Scientific Governor, Chicago Academy of Sciences, USA

From 1984 International Director, ChimpanZoo (research program involving zoos and sanctuaries worldwide), USA

From 1987 Vice President, the British Veterinary Association's Animal Welfare Institute, UK

From 1988 Trustee, Jane Goodall Institute, UK

From 1989 Director, Humane Society of the United States, USA

From 1990 Member of the Advisory Board, Advocates for Animals, UK

From 1991 Member of the Advisory Board, the Albert Schweitzer Institute for the Humanities, USA

From 1993 Trustee, the Jane Goodall Institute, Canada

From 1994 Member of the Board, the Orangutan Foundation, USA

From 1994 Member of the Advisory Board, Trees for Life, USA

From 1997 Founder, Whole Child Initiative, USA

From 1995 Member of the Advisory Board, International Dolphin Project and Dolphin Project Europe

From 1995 Member of Council of Advisors, Global Green, USA

From 1996 Member of Advisory Board, The Fred Foundation, Netherlands

From 1998 to May 2008 President, Advocates for Animals, UK

From 1999 Member of Advisory Board, The Orion Society, USA

From 2000 to 2007 Member of the Board, Save the Chimps/Center for Captive Chimpanzee Care, USA

From 2000 Co-founder of Ethologists for Ethical Treatment of Animals/Citizens for Responsible Animal Behavior, USA

From 2001 Member of the International Advisory Board, Teachers Without Borders, USA

From 2001 Member of Advisory Committee, RESTORE, USA

From 2001 Honorary Trustee, The Eric Carle Museum of Picture Book Art, USA

From 2001 Member of IPS Ad-Hoc Committee for the World Heritage Status for Great Apes

From 2001 Member of Board of Trustees, NANPA Infinity Foundation, USA

From 2001 Member of Board, North American Bear Center, USA

From 2001 Member of Advisory Board, Laboratory Primate Advocacy Group, USA

From 2001 Member of Advisory Board, Tech Foundation, USA

From 2001 Member of Honorary Committee, Farm Sanctuary, USA

From 2002 Member of Advisory Board, Rachel's Network, USA

From 2002 Member of the Board of Directors, The Cougar Fund, USA

From 2002 Scientific Fellow of the Wildlife Conservation Society, USA

From 2002 Member of Board of Directors, The Many One Foundation, USA

From 2002 Member of Board of Governors and Officers, For Grace, USA

From 2002 Member of Advisory Board, Dignity U Wear, USA

2002-2003 Papadopoulos Fellow, The Kinkaid School USA

From 2003 Member of the Honorary Board, Albert Schweitzer Institute, USA

From 2004 Member of Advisory Board, Initiative for Animals and Ethics, Harvard University, USA

From 2004 Honorary Patron, Ryan's Well Foundation, Canada

From 2004 Member of Advisory Board, MONA-Spain

From 2004 Member of the Advisory Council, The Spiritual Alliance to Stop Intimate Violence, USA

From 2004 Member of Honour Committee of Fundación Altarriba, Spain

From 2005 Member of International Advisory Board, Friends of Africa International, USA

From 2005 Member of Cincinnati Zoo Advisory Council, USA

From 2005 Member of Advisory Board, Chimps Inc., USA

From 2005 Member of Advisory Board, KidsRights, Netherlands

From 2005 Member of Advisory Board, MediSend, USA

From 2005 Member of Honorary Board, Quinnipiac University, USA

From 2006 Member of Advisory Board, Foundation for Natural Leadership

From 2006 Member of Advisory Board, Nuclear Age Peace Foundation, USA

From 2006 Honorary Member, Club of Budapest, Hungary

From 2006 Member of the Mothers Network, ENO, Finland

From 2006 Member of Board of Directors, National Institute for Play, USA

From 2007 Fellow, Wings WorldQuest, USA

From 2007 Member of Advisory Board, Gift of Life in America, Inc., USA

From 2007 Member of Advisory Board, The Heart of America Foundation, USA

From 2007 Member of Advisory Board, Project R&R: Release and Restitution for Chimpanzees in U.S. Laboratories, a campaign of the New England Anti-Vivisection Society, USA

From 2007 Member of Advisory Board, Save the Chimps, USA

From 2007 Member of Advisory Board, Slow Food Nation, USA

From 2007 Distinguished Fellow, Ewha Academy for Advanced Studies, Republic of Korea

From 2007 Member of Advisory Board, Human and KIND, USA

From 2007 Honorary Board Member, The Scholar Ship Research Institute, UK

From 2007 Member of Advisory Board, Climate Clean, USA

From 2008 Member of the Great Chapter, Grace Cathedral, CA, USA

From 2008 Honorary Board Member, Eagle Vision Initiatives, USA

From 2008 Honorary Patron, Comunidad Inti Wara Yassi, UK

From 2008 Honorary Fellow, Institute of Biology, UK

From 2008 Patron, Earth Charter-UK

From 2008 Special Advisor for Biodiversity, Prince Albert II of Monaco Foundation, Monaco

From 2008 Member of Council of Honour, Waldrappteam, Austria

From 2008 Member of the Board, Climate Change Center, Republic of Korea

From 2008 Patron, Julia's House, UK

From 2008 Member of the Honorary Committee, Alpine Peace Crossing, Austria

From 2008 Member of the Advisory Council, Ebola Vaccination Initiative

From 2008 Patron, Society of Theological Zoology, Germany

From 2008 Member of Celebrity Circle Board, Green Chimneys, USA

From 2009 Honorary Keeper of the Museum Tridentino of Natural Science, Italy

From 2009 Member of Advisory Board, EcoReserve, USA

From 2009 Honorary Fellow, Society of Biology, UK

From 2009 Member of Advisory Board, Goodplanet Foundation of Yann Arthus-Bertrand, France

From 2009 Member of Advisory Board as advisor for Biodiversity, Foundation Jacques Chirac, France

From 2010 Honorary Co-Chair of the Build the Peace Committee, USA

From 2010-2013 Patron, Minding Animals International, Australia

From 2010 Member of the International Conference, WE, USA

From 2010 Member of Advisory Board, Living with Wolves, USA

From 2010 Goodwill Ambassador, Equine Sciences Academy, USA

From 2010 Acclaimed Ambassador, Best Friends Animal Society, USA

From 2011 Member of the Advisory Council, Voices for a World Free of Nuclear Weapons, USA

From 2011 Patron, Voiceless, Australia

From 2012 Honorary Councilor, World Future Council, Germany

From 2012 Honorary Board, Center for Great Apes, USA

From 2013 International Patron, School Broadcasting Network Inc., Australia

From 2013 Member of Scientific and Ethics Council, Ecolo-Ethik, France

From 2013 Philosophical Society, Trinity College, Dublin, Ireland

From 2014 Member of Advisory Council, International Women's Earth and Climate Initiative (IWECI), USA

From 2014 Member of Advisory Board, Years of Living Dangerously, USA

From 2014 Advisor to Board, APOPO, USA

From 2014 Advisory Board, Mongabay.org, USA

From 2014 Honorary Board of Directors, IFAW, USA

From 2015 Patron of Nature, IUCN, USA

Memberships

1972 Honorary Foreign Member of the American Academy of Arts and Sciences, USA

1981 Explorer's Club, USA

1984 Foreign Member of the Research Centre for Human Ethology at the Max-Planck Institute for Behavioral Physiology, Germany

1988 American Philosophical Society, USA

1988 Society of Woman Geographers, USA

1990 Deutsche Akademie der Naturforscher Leopoldina, Germany

1991 Academia Scientiarum et Artium Europaea, Austria

1991 Honorary Fellow of the Royal Anthropological Institute of Great Britain and Ireland

2004 Great Ape Subsection of the Primate Specialist Group, USA

2006 Honorary Member, Ewha Academy of Arts and Sciences, Republic of Korea

2006 Member of the International Primatological Society, USA

Honorary Degrees

1975 LaSalle College, Philadelphia, Penn., USA

1979 Stirling University, Stirling, Scotland, UK

1986 Ludwig-Maximilians University, Munich, Germany

1986 Zoologisches Institut der Universität München, München, Germany

1986 Tufts University, Boston, Mass., USA

1988 University of North Carolina, Greensboro, N.C., USA

1990 University of Pennsylvania, Philadelphia, Penn., USA

1991 Colorado College, Colorado Springs, Colo., USA

1993 College of William and Mary, Williamsburg, Va., USA

1993 University of Miami, Coral Gables, Fla., USA

1994 Utrecht University, Utrecht, Netherlands

1996 Western Connecticut State University, Danbury, Conn., USA

1996 Salisbury State University, Salisbury, Md., USA

1997 University of Edinburgh Veterinary School, Edinburgh, Scotland, UK

1998 University of Guelph, Guelph, Ontario, Canada

1999 Albright College, Reading, Penn., USA

2000 Wesleyan College, Macon, Ga., USA

2001 University of Minnesota, Minneapolis, Minn., USA

2001 University at Buffalo, Buffalo, N.Y., USA

2001 Ryerson University, Toronto, Ontario, Canada

2001 Providence University, Taiwan, Republic of China

2002 Elon University, Elon, N.C., USA

2002 Sweet Briar College, Sweet Briar, Va., USA

2003 University of Central Lancashire, UK

2004 University of Natal, Pietermaritzburg, South Africa

2004 Haverford College, Haverford, Penn., USA

2005 Pecs University, Pecs, Hungary

2005 Syracuse University, Syracuse, N.Y., USA

2005 Rutgers, The State University of New Jersey, Camden, N.J., USA

- 2006 The Open University of Tanzania, Dar es Salaam, Tanzania
- 2007 Doane College, Crete, Neb., USA
- 2007 Uppsala University, Uppsala, Sweden
- 2007 Kyoto University, Kyoto, Japan
- 2007 University of Liverpool, Liverpool, UK
- 2008 Lehigh University, Bethlehem, Penn., USA
- 2008 University of Toronto, Toronto, Canada
- 2008 University of Haifa, Haifa, Israel
- 2008 National Taiwan University of Science and Technology, Taiwan, Republic of China
- 2009 University of Liège, Liège, Belgium
- 2009 University of Pablo de Olavide, Seville, Spain
- 2009 University of Alicante, Sant Vicent del Raspeig/Alicante, Spain
- 2011 American University of Paris, Paris, France
- 2011 Giordano Bruno GlobalShift University, Budapest, Hungary
- 2011 Maimonides University, Buenos Aires, Argentina
- 2012 National Tsing Hua University, Taiwan
- 2012 Goldsmiths, University of London, UK
- 2013 University of St. Andrews, Scotland, UK
- 2013 Trinity College, Dublin, Ireland
- 2013 St. Ignatius of Loyola University, Peru
- 2014 University of South Australia, Adelaide, Australia

Awards

1963 and 1964 Franklin Burr Award for Contribution to Science, National Geographic Society, USA

- 1970 Stott Science Award, Cambridge University, UK
- 1974 Gold Medal for Conservation, San Diego Zoological Society, USA
- 1974 Conservation Award, Women's Branch of the New York Zoological Society, USA
- 1974 Bradford Washburn Award, Boston Museum of Science (with Hugo van Lawick), USA
- 1980 Order of the Golden Ark, World Wildlife Award for Conservation, presented by HRH Prince Bernhard of the Netherlands, Netherlands
- 1984 J. Paul Getty Wildlife Conservation Prize, Tanzania
- 1985 Living Legacy Award, the Women's International Center, USA
- 1987 The Albert Schweitzer Award of the Animal Welfare Institute, USA
- 1987 National Alliance for Animals Award
- 1987 E. Mendel Medaille from the Deutsche Akademie der Naturforscher Leopoldina, East Germany
- 1987 Golden Plate Award, Academy of Achievement, USA
- 1988 Centennial Award, National Geographic Society, USA
- 1988 Joseph Wood Krutch Medal, the Humane Society of the United States, USA
- 1988 Award for Humane Excellence, American Society for the Prevention of Cruelty to Animals, USA
- 1989 Encyclopedia Britannica Award for Excellence on the Dissemination of Learning for the Benefit of Mankind, USA
- 1989 Anthropologist of the Year Award
- 1990 The Anthropology in Media Award, American Anthropological Association, USA
- 1990 Whooping Crane Conservation Award, Conoco, Inc., USA
- 1990 Gold Medal of the Society of Women Geographers, USA
- 1990 Washoe Award
- 1990 The Kyoto Prize in Basic Science, Japan

- 1991 The Edinburgh Medal, UK
- 1993 Rainforest Alliance Lifetime Achievement Award, USA
- 1994 Chester Zoo Diamond Jubilee Medal, UK
- 1995 Commander of the British Empire, presented by Her Majesty Queen Elizabeth II, UK
- 1995 The National Geographic Society Hubbard Medal for Distinction in Exploration, Discovery, and Research, USA
- 1995 Lifetime Achievement Award, In Defense of Animals, USA
- 1995 The Moody Gardens Environmental Award, USA
- 1995 Honorary Wardenship of Uganda National Parks, Uganda
- 1996 The Zoological Society of London Silver Medal, UK
- 1996 The Tanzanian Kilimanjaro Medal, Tanzania
- 1996 The Primate Society of Great Britain Conservation Award, UK
- 1996 The Caring Institute Award, USA
- 1996 The Polar Bear Award, National Alliance for Animals
- 1996 William Proctor Prize for Scientific Achievement, Sigma Xi, USA
- 1997 Tyler Prize for Environmental Achievement, USA
- 1997 David S. Ingalls, Jr. Award for Excellence
- 1997 Common Wealth Award for Public Service, USA
- 1997 The Field Museum's Award of Merit
- 1997 Royal Geographical Society / Discovery Channel Europe Award for A Lifetime of Discovery
- 1997 Global 500 Roll of Honour Award, UNEP, Seoul, Korea
- 1998 Disney's Animal Kingdom Eco Hero Award, USA
- 1998 National Science Board Public Service Award, USA

- 1998 The Orion Society's John Hay Award, USA
- 1999 International Peace Award, Community of Christ, USA
- 1999 Botanical Research Institute of Texas International Award of Excellence in Conservation, USA
- 2000 Reorganized Church of the Latter Day Saints International Peace Award, USA
- 2001 Graham J. Norton Award for Achievement in Increasing Community Liability
- 2001 Rungius Award of the National Museum of Wildlife Art, USA
- 2001 Master Peace Award
- 2001 Gandhi/King Award for Non-Violence, USA
- 2002 The Huxley Memorial Medal, Royal Anthropological Institute of Great Britain and Ireland
- 2002 United Nations Messenger of Peace Appointment, USA
- 2003 Benjamin Franklin Medal in Life Science, USA
- 2003 Harvard Medical School's Center for Health and the Global Environmental Citizen Award, USA
- 2003 Prince of Asturias Award for Technical and Scientific Achievement, Spain
- 2003 Chicago Academy of Sciences' Honorary Environmental Leader Award, USA
- 2003 Commonwealth Club Centennial Medallion Award
- 2004 Dame of the British Empire, presented by HRH Prince Charles, UK
- 2004 Teachers College Columbia University Medal for Distinguished Service to Education, USA
- 2004 Nierenberg Prize for Science in the Public Interest, USA
- 2004 Will Rogers Spirit Award, the Rotary Club of Will Rogers and Will Rogers Memorial Museums
- 2004 Lifetime Achievement Award, the International Fund for Animal Welfare (IFAW), USA

2004 Polar Star Award, Paris, France

2004 Save Our Species Award, Santa Barbara, Calif., USA

2004 Time Magazine European Heroes Award

2004 Extraordinary Service to Humanity Award, The Bear Search and Rescue Foundation, USA

2004 Medal for Distinguished Service to Education, Teachers College, Columbia University, N.Y., USA

2005 Lifetime Achievement Award, Jackson Hole Wildlife Film Festival, USA

2005 Siemens Academy of Life Award, Austria

2005 Westminster College President's Medal, Salt Lake City, Utah, USA

2005 National Organization for Women's Intrepid Award, USA

2005 Honorary Conservation Award, University of Iowa, USA

2005 Discovery and Imagination Stage Award, USA

2005 Westminster College President's Medal for Exemplary Achievement, Utah, USA

2005 Pax Natura Award, Utah, USA

2005 Two Wings Award, Vienna, Austria

2006 International Patron of the Immortal Chaplains Foundation, USA

2006 UNESCO 60th Anniversary Golden Medal Award, Paris, France

2006 French Legion of Honor, awarded by the President of France, Mr. Jacques Chirac, and presented by Prime Minister Dominique de Villepin

2006 Lifetime Achievement Award, Jules Verne Adventures

2006 Biophilia Award, Jazzpur Society, Windsor, Canada

2006 Genesis Award, Humane Society of the United States, USA

2007 Lifetime Achievement Award, WINGS WorldQuest

2007 Honorary Medal of the City of Paris, presented by Mr. Bertrand Delanoë, mayor of Paris, France

2007 Roger Tory Peterson Memorial Medal, Harvard Museum of Natural History, USA

2008 Presidential Medal for Global and Visionary Leadership, Montana State University, Bozeman, Mont., USA

2008 Prix de la Fondation Prince Albert II de Monaco, presented to David Lefranc by Prince Albert II of Monaco

2008 Prize for Sustainable Community Development, Weidemann Foundation, Calif., USA

2008 State of Rhode Island and Providence Plantations Citation, R.I., USA

2008 Eurogroup Award, Brussels, Belgium

2008 Courage of Conscience Award, The Peace Abbey, Sherborn, Mass., USA

2008 Environmental Education Award of Hebei University of Science and Technology, China

2008 L.S.B Leakey Foundation Prize for Multidisciplinary Research on Ape and Human Evolution (Leakey Prize), USA

2009 United States Department of the Interior, The Secretary's Lifetime Achievement Award, presented by Mr. Ken Salazar, USA

2009 Minerva Award, USA

2010 Association of American Geographers Atlas Award, USA

2010 International Golden Doves for Peace Award, Italy

2010 Peace Hero, Kids for Peace, USA

2010 BAMBI Award, Germany

2010 NEA Award for Outstanding Service to Public Education, NEA Foundation, Washington, D.C., USA

2011 Order of Merit of the Italian Republic, Italy

2011 Mayor's Medallion, Lincoln, Neb., USA

- 2011 Heart of Green Award for Lifetime Achievement, TheDailyGreen.com, USA
- 2011 Focus magazine's Greatest Personality of Planete Doc Film Festival, Poland
- 2011 Honorary International Ranger Award, The Thin Green Line Foundation and International Ranger Federation, Australia
- 2011 Inspirational International Award, The Inspiration Awards for Women, USA
- 2011 Grand Officer of the Order of Merit of the Italian Republic, presented by the President of the Republic's Counselor Magistrate Dr. Elio Berarducci
- 2012 Lifetime Achievement Award, The Observer Ethical Awards, UK
- 2012 Outstanding Harmony Award in Rio+20, World Harmony Foundation, Australia
- 2012 Anne Marrow Lindberg Award for Living with Grace and Distinction, Huffington Center for Aging, USA
- 2012 Il Monito del Giardino international award, Italy
- 2012 AARP Inspire Award, USA
- 2013 Varner Vitality Lecture, Oakland University, Michigan, USA
- 2013 WildCare Environmental Award, California, USA
- 2013, Wyland Icon Award, USA
- 2014 Better Malaysia Foundation (BMF) Person of the Year Award, Kuala Lumpur, Malaysia
- 2014 Animal Defence and Anti-Vivisection Society, Person of the Year Award, British Columbia, Canada
- 2014 Distinguished Lecturer, the University of Iowa Lecture Committee, Iowa, USA
- 2014 Invercargill Vegan Society Award, Dunedin, New Zealand
- 2014 BAUM Award, Germany
- 2014 Look! World Achievement Award
- 2014 Green Prize Award, Santa Monica Public Library
- 2014, Recognition of lifelong contributions to wildlife protection from MOTC, Taiwan

2014, World Technology Network (WTN) Award for Use of Technology in Policy, New York, USA

2014, President's Medal from the British Academy, London, UK

2014, Captain Planet Foundation Exemplar Award, Atlanta, GA USA

2015, Asia Pacific Brand Foundation, The BrandLaureate Legendary Award, Malaysia

2015, Premi Internacional Catalunya Prize, Catalonia, Spain

2015, The Perfect World Foundation, Conservationist of the Year 2015, Stockholm, Sweden

2015, the Orang Utan Republik Foundation, Pongo Environmental Award, Beverly Hills, CA USA

Publications

Books

1967 My Friends the Wild Chimpanzees. Washington, D.C.: National Geographic Society

1971 Innocent Killers (with H. van Lawick). Boston: Houghton Mifflin; London: Collins.

1971 In the Shadow of Man. Boston: Houghton Mifflin; London: Collins.
Published in 48 languages.

1986 The Chimpanzees of Gombe: Patterns of Behavior. Boston: Bellknap Press of the Harvard University Press. Published also in Japanese and Russian.

R.R. Hawkins Award for the Outstanding Technical, Scientific or Medical book of 1986, to Bellknap Press of Harvard University Press, Boston.

The Wildlife Society (USA) Award for "Outstanding Publication in Wildlife Ecology and Management."

1990 Through a Window: My Thirty Years with the Chimpanzees of Gombe. London: Weidenfeld & Nicolson; Boston: Houghton Mifflin.
Translated into more than 15 languages.

1991 Penguin edition, UK. American Library Association "Best" list among Nine Notable Books (Nonfiction) for 1991.

1993 Visions of Caliban (co-authored with Dale Peterson, Ph.D.). Boston: Houghton Mifflin.

New York Times "Notable Book" for 1993.

Library Journal "Best Sci-Tech Book" for 1993.

1999 Brutal Kinship (with Michael Nichols). New York: Aperture Foundation.

1999 Reason For Hope: A Spiritual Journey (with Phillip Berman). New York: Warner Books, Inc. Translated into more than 13 languages.

1999 40 Years At Gombe. New York: Stewart, Tabori, and Chang.

2000 Africa In My Blood (edited by Dale Peterson). New York: Houghton Mifflin Company.

2001 Beyond Innocence: An Autobiography in Letters, The Later Years (edited by Dale Peterson). New York: Houghton Mifflin Company.

2002 The Ten Trusts: What We Must Do To Care for the Animals We Love (with Marc Bekoff). San Francisco: Harper San Francisco.

2005 Harvest for Hope: A Guide to Mindful Eating (with Gary McAyoy and Gail Hudson). New York: Warner Books.

2009 Hope for Animals and Their World: How Endangered Species Are Being Rescued from the Brink (with Thane Maynard and Gail Hudson). New York: Grand Central Publishing.

2010 50 Years at Gombe. New York: Stewart, Tabori, and Chang.

2014 Seeds of Hope: Wisdom and Wonder from the World of Plants (with Gail Hudson). New York: Grand Central Publishing.

Children's Books

1972 Grub: The Bush Baby (with H. van Lawick). Boston: Houghton Mifflin.

1988 My Life with the Chimpanzees. New York: Byron Preiss Visual Publications, Inc. Translated into French, Japanese and Chinese.

Parenting's Reading-Magic Award for "Outstanding Book for Children," 1989.

1989 The Chimpanzee Family Book. Saxonville, MA: Picture Book Studio; Munich: Neugebauer Press; London: Picture Book Studio.

Translated into more than 15 languages, including Japanese and Kiswahili.

The UNICEF Award for the best children's book of 1989.

Austrian state prize for best children's book of 1990.

1989 Jane Goodall's Animal World: Chimps. New York: Macmillan.

1989 Animal Family Series: Chimpanzee Family; Lion Family; Elephant Family; Zebra Family; Giraffe Family; Baboon Family; Hyena Family; Wildebeest Family. Toronto: Madison Marketing Ltd.

1994 With Love (illustrated by Alan Marks). New York / London: North-South Books. Translated into German, French, Italian, and Japanese.

1999 Dr. White (illustrated by Julie Litty). New York: North-South Books.

2000 The Eagle & the Wren (illustrated by Alexander Reichstein). New York: North-South Books.

2001 Chimpanzees I Love: Saving Their World and Ours. New York: Scholastic Press.

2004 Rickie and Henri: A True Story (with Alan Marks) New York: Penguin Young Readers Group.

2013 Dr. White (illustrated by Julie Litty) gift book size. Hong Kong: minedition

2014 The Eagle & the Wren (illustrated by Alexander Reichstein) gift book size. Hong Kong: minedition

2014 With Love (illustrated by Alan Marks) gift book size. Hong Kong: minedition

2014 Jane Goodall The Chimpanzee Children of Gombe (with Michael Neugebauer). Hong Kong: minedition

2015 Prayer for World Peace (with Michael Neugebauer). Hong Kong: minedition

Films

1963 Miss Goodall and the Wild Chimpanzees, National Geographic Society.

1984 Among the Wild Chimpanzees, National Geographic Special.

1988 People of the Forest, with Hugo van Lawick.

1990 Chimpanzee Alert, in the Nature Watch Series, Central Television.

1990 Chimps, So Like Us, HBO film nominated for 1990 Academy Award.

1990 The Life and Legend of Jane Goodall, National Geographic Society.

1990 The Gombe Chimpanzees, Bavarian Television.

1995 Fifi's Boys, for the Natural World series for the BBC.

1995 My Life with the Wild Chimpanzees, National Geographic.

Chimpanzee Diary for BBC2 Animal Zone.

Animal Minds for BBC.

1999 Jane Goodall: Reason For Hope, PBS special produced by KTCA.

2001 Chimps R Us PBS special Scientific Frontiers.

2002 Jane Goodall's Wild Chimpanzees, in collaboration with Science North and Science Museum of Minnesota.

2004 Jane Goodall's Return to Gombe, produced by Tigress Productions for Animal Planet/Discovery Communications.

2004 Jane Goodall's State of the Great Ape, produced by Tigress Productions for Animal Planet/Discovery Communications.

2005 Jane Goodall - When Animals Talk, produced by Tigress Productions for Animal Planet/Discovery Communications.

2006 Jane Goodall's Heroes, produced by Creative Differences for Animal Planet/Discovery Communications.

2007 Almost Human, produced by Creative Differences for Animal Planet/ Discovery Communications

2010 Jane's Journey, produced by Animal Planet, CC Medien, NEOS Film and Sphinx Media

2014 Jane and Payne, produced by Boy Olmi and LSD Live (Dylan Williams),

Articles

1962 Nest building in a group of free-ranging chimpanzees. Ann. N.Y. Acad. Sci. 102: 455-467.

1963 Feeding behaviour of wild chimpanzees: a preliminary report. Symp. Zool. Soc. Lond. 10: 39-48.

- 1963 My life with the wild chimpanzees. *National Geographic* 124 (2):272-308.
- 1964 Tool-using and aimed throwing in a community of free-living chimpanzees. *Nature* 201: 1264-1266.
- 1965 Chimpanzees of the Gombe Stream Reserve. In: I. DeVore (Ed). *Primate Behaviour*. New York: Holt, Rinehart and Winston.
- 1965 New discoveries among Africa's chimpanzees. *National Geographic* 128 (6): 802-831.
- 1965 Infancy, childhood and adolescence in a group of wild chimpanzees. *Proc. Roy. Inst. Lond.*
- 1966 (with H. van Lawick). Use of tools by the Egyptian Vulture, *Neophron porenoptemus*. *Nature*. 212: 1468-1469.
- 1967 Mother-offspring relationships in chimpanzees. In: D. Morris (Ed). *Primate Ethology*. London: Weidenfeld & Nicolson. pp. 287-345.
- 1967 (with H. van Lawick). Tool-using bird, the Egyptian Vulture. *National Geographic* 133 (5): 631-651.
- 1968 Behaviour of free-living chimpanzees of the Gombe Stream Area. In: J.M. Cullen and C.G. Beer (Eds). *Anim. Behav. Monog. Vol. 1, Part 3*. London: Bailliere, Tindail, and Casell. pp. 165-311.
- 1968 Expressive movements and communication in free-ranging chimpanzees: a preliminary report. In: P. Jay (Ed). *Primates: Studies in Adaptation and Variability*. New York: Hold, Rinehart and Winston. pp. 313-374.
- 1969 Some aspects of reproductive behaviour in free-living chimpanzees. *Journ. Reprod. Fert.*
- 1970 Some aspects of mother-infant behaviour in wild chimpanzees. In: R. Schaffer (Ed). *Determinants of Infant Behaviour*. New York: John Wiley and Sons.
- 1970 The scratching rocks clan. *Animals* 13: 401-407.
- 1970 Tool-using in Primates and other Vertebrates. In: D.S. Lehrman, R.A. Hinde, and E. Shaw (Eds). *Advances in the Study of Behaviour*, Vol. 3. New York and London: Academic Press. pp. 195-249.
- 1971 Some aspects of aggressive behaviour in a group of free-living chimpanzees. *Int. Soc. Sci. Journ.* 23 (1): 89-97.

1973 Baboons too use tools. *Science News* 103: 71-72.

1973 The behaviour of chimpanzees in their natural habitat. *Am. J. Psychiatry*. 130 (1): 1-12.

1973 (with H. van Lawick and C. Packer). Use of objects as tools in free-living baboons in the Gombe National Park, Tanzania. *Nature* 24: 212-213.

1973 Cultural elements in a chimpanzee community. In: W.W. Menzel (Ed). *Precultural Primate Behaviour*, Vol I. Karger: Fourth IPV Symposium Proceedings.

1975 Chimpanzees of Gombe National Park: 13 years of research. In: I. Eibesfeldt (Ed). *Hominisation und Verhalten*. Stuttgart: Gustav Fischer Verlag. pp. 74-136.

1975 The chimpanzee: a model for the behaviour of early man? In: V. Goodall (Ed). *Quest for Man*. London: Pail Mall Press. pp. 130-169.

1975 On the contribution of chimpanzee studies to understanding human origins. In: S.L. Isaac (Ed). *Perspectives on Human Evolution*, Vol. 3: Essays on East Africa and Human Origins--a tribute to the life's work of the late Louis Leakey.

1976 (with D.A. Hamburg). New evidence on the origins of human behaviour. In: D. Hamburg and K. Brodie (Eds). *American Handbook of Psychiatry*, Vol. 6, New Frontiers. New York: Basic Books.

1976 Continuities between chimpanzee and human behaviour. In: G.L. Isaac and E.R. McGown, (Eds). *Human Origins: Louis Leakey and the East African Evidence*. California: W.J. Benjamin Inc.

1976 (with D. Riss). Sleeping behaviour and associations in a group of captive chimpanzees. *Folia Primatol.* 25: 1-11.

1977 Infant-killing and cannibalism in free-living chimpanzees. In: *Folia Primatol.* 28: 59-282.

1977 (with K. Morris). Competition for meat between chimpanzees and baboons of the Gombe National Park. *Folia Primatol.* 28: 109-121.

1977 (with D. Riss). The recent rise to the alpha rank in a population of free-living chimpanzees. *Folia Primatol.* 27: 134-151.

1978 Chimp Killings: Is it the Man in them? *Sci News* 113: 276.

1979 (with A. Bandora, E. Bergmann, C. Busse, H. Matama, E. Mpongo, A. Pierce, D. Riss). Inter-community interactions in the chimpanzee population of the Gombe National

Park. In: D.A. Hamburg and E.R. McGown (Eds). *The Great Apes*. Menlo Park, California: Benjamin/Cummings. pp. 13-53.

1979 Life and Death at Gombe. *National Geographic* 155 (5): 592-621.

1980 (with J. Athumani). An observed birth in a free-living chimpanzee in Gombe National Park, Tanzania. *Primates*. 21 (4): 545-549.

1982 Order without law. *Journal of Social and Biological Structures* 5: 353-360.

1983 Population dynamics during a 15 year period in one community of free-living chimpanzees in the Gombe National Park, Tanzania. *Zeitschrift für Tierpsychologie* 61: 1-60.

1983 (with T. Nishida, R.W. Wrangham, and S. Uehara.) Local differences in plant-feeding habits of chimpanzees between the Mahale Mountains and Gombe National Park, Tanzania. *J. Human Evol.* 12: 467-480.

1984 (with D.A. Collins, C.D. Busse and J. Goodall. 1984. Infanticide in two populations of Savanna Baboons. In: G. Hausfater and S.B. Hrdy (Eds). *Infanticide: Comparative and Evolutionary Perspectives*. New York: Aldine Publishing Company. pp. 193-216.

1984 The nature of the mother-child bond and the influence of family on the social development of free-living chimpanzees. In: N. Kobayashi and T.B. Brazelton (Eds). *The Growing Child in Family and Society*. Tokyo: University of Tokyo Press. pp. 47-66.

1985 Chapter. In: P.L. Berman (Ed). *The Courage of Conviction*. New York: Ballantine Books.

1985 (with H. Kummer, H). Conditions of innovative behaviour in primates. *Phil. Trans. R. Soc. Lond.* 308: 205-214.

1986 Mountain Warrior. *Omni*. May 1986, 132-143.

1986 Social rejection, exclusion, and shunning among the Gombe chimpanzees. Special issue: Ostracism: A social and biological phenomenon. *Eth. and Sociobiol.* 17 (3-4): 227-236.

1987 A Plea for the Chimps. *The New York Sunday Times Magazine*. May 17, 1987. pp. 108-110.

1987 A Plea for the Chimpanzees. *Am. Sci.* 75 (6): 574-577.

1988 Ethical concerns in the use of animals as donors. *Xenograft* 25: Proceedings of the International Congress, *Xenograft* 25. Elsevier Science Publishers. pp. 335-349.

1988 (with A. Prince, J. Moor-Jankowski, J. Eichberg, H. Schellekens, R. Mauler, and M. Girard) Chimpanzees and AIDS research. *Nature*. 333 (9): 513.

1989 The Chimpanzee: Man's closest relative in danger. In: Kakakuona, the magazine of the Tanzania Wildlife Protection Fund. 1 (1): 5-9.

1989 (with A. Prince, B. Brotman, H. Dienske, H. Schellekens, and J. Eichberg). Appropriate conditions for maintenance of chimpanzees in studies with blood-borne viruses: an epidemiologic and psychosocial perspective. *J. Med. Primatol.* 18: 27-42.

1989 (with R.W. Wrangham). Chimpanzee use of medicinal leaves. In P. Heltne and L. Marquardt (Eds) *Understanding Chimpanzees*, pp. 22-37. Cambridge: Harvard University Press.

1990 (with A.L. Zihlman, and M.E. Morbeck). Skeletal biology and individual life history of Gombe chimpanzees. *J. Zool., London* 221: 37-61.

1990 Gombe: Highlights and Current Research. In: P.G. Heltne and L.A. Marquardt (Eds). *Understanding Chimpanzees*. Boston: Harvard University Press. pp. 2-21.

1990 ChimpanZoo. In: P.G. Heltne and L.A. Marquardt (Eds). *Understanding Chimpanzees*. Boston: Harvard University Press. pp. 148-150.

1990 Area Status Report: Tanzania. In: P.G. Heltne and L.A. Marquardt (Eds). *Understanding Chimpanzees*. Boston: Harvard University Press. pp. 360-361.

1990 Respect for Life. In: C. Fadiman (Ed). *Living Philosophies*. New York: Doubleday. pp. 81-88.

1992 Psychosocial needs of laboratory chimpanzees. *Proceedings of the Symposium on Biomedical Research on Primates*.

1993 Unusual violence surrounding the rise to alpha rank in the Gombe chimpanzee community. In: *Proc. XIIIth Cong. IPS*.

1993 (with J. Wallis). Anogenital swelling in pregnant chimpanzees of Gombe National Park. *Am. J. Primatol.* 31(2): 89-98.

1994 (with P.A. Morin, J.J. Moore, R. Chakraborty, L. Jin, and D.S. Woodruff). Kin selection, social structure, gene flow and the evolution of chimpanzees. *Science* 265: 1193-1201.

1994 (with C.B. Stanford, Wallis, J., Matama, H.) Patterns of Predation by chimpanzees on red colobus monkeys in Gombe National Park, 1982-1991. *American Journal of Physical Anthropology*, 94 (2) 213-228.

1994 (with C.B. Stanford, Wallis, J., Mpongo, E) Hunting decisions in wild chimpanzees. *Behaviour*, 131, 1-18.

1995 (with C. Packer, D.A. Collins, and A. Sindimwo). Reproductive constraints on aggressive competition in female baboons. *Nature* 373: 60-63.

1995 Why is it unethical to use chimpanzees in the laboratory? *ATLA*. 23: 615-620.

1995 Chimpanzees and others at play. *ReVision* 17 (4): 14-20.

1997 (with A. Pusey and J. Williams). The influence of dominance rank on the reproductive success of female chimpanzees. *Science*. 277: 828-831.

1999 (with A. Whiten, McGew, W.C., Nishida, T., Reynolds, V., Sugiyama, Y. Tutin, C.E.G., Wrangham, R.W., Boesch, C.) Cultures in chimpanzees. *Nature* 399, 682-5.

2001 (with Marc Bekoff). *Primate Origins of Human Cognition and Behavior*, edited by Tetsuro Matsuzawa. (Book review). *Science*. 411: 995-996.

2001 (with Bekoff, M.). The view from Japan. *Nature* 411, 995-996.

2001 (with Mario L. Santiago, Cynthia M. Rodenburg, Shadrack Kamenya et. al.) Noninvasive Detection and Molecular Identification of Simian Immunodeficiency Virus in Wild-living Chimpanzees. *Nature*.

2001 (with A. Whiten, McGew, W.C., Nishida, T., Reynolds, V., Sugiyama, Y. Tutin, C.E.G., Wrangham, R.W., Boesch, C.) Charting cultural variation in chimpanzees. *Behavior* 138, 1489-1525.

2001 (with Constable, J., Ashley, M., & Pusey, A.) Noninvasive paternity assignment in Gombe chimpanzees. *Molecular Ecology*, 10:1279-1300.

2001 (with Hill, K., Goodall, J, Pusey, A., Williams, J., Boesch, C., Boesch, H., & Wrangham, R.W.) Chimpanzee mortality in the wild. *Journal of Human Evolution*. 40:437-450.

2002 (with RW Wrangham and D. Pilbeam). Apes as time machines. In BMF Galdikas, N Briggs, LK Sheeran, GL Shapiro, and J Goodall eds, *All Apes Great and Small Volume 1: Chimpanzees, Bonobos, and Gorillas*. Plenum/Kluwer Publication

2002 (with Anne Pusey, Shadrack Kamenya, Anthony Collins, Richard Wrangham, Beatrice H. Hahn et. al.) SIV cpz in Wild Chimpanzees. *Science*.

2002 (with Lonsdorf, E. V.) Cultures in chimpanzees. *Encyclopedia of Evolution*. Oxford UK, Oxford University Press.

2002 (with Santiago, M.L., Rodenburg, C.M., Kamenya, S., Bibollet-Ruche, F., Gao, F., Bailes, E., Meth, S., Soong, S.-J., Kilby, J.M., Moldoveanu, Z., Fahey, B., Muller, M.N., Ayoub, A., Nerrienet, E., McClure, H.M., Heeny, J.L., Pusey, A.E., Collins, D.A., Boesch, C., Wrangham, R.W., Goodall, J., Sharp, P.M., Shaw, G.M. & Hahn, B.H.) SIVcpz in wild chimpanzees. *Science* 295:465.

2002 (with Williams, J.M., Pusey, A.E., Carlis, J.V., & Farm, B.) Female competition and male territorial behaviour influence female chimpanzees' ranging patterns. *Animal Behaviour*. 63:347-360.

2003 (with Santiago, M.L., Bibollet-Ruche, F., Bailes, E., Kamenya, S., Muller, M.N., Lukasik, M., Pusey, A.E., Collins, D.A., Wrangham, R.W., Shaw, G.M., Sharp, P.M. & Hahn, B.) Amplification of a complete simian immunodeficiency virus genome from fecal RNA of a wild chimpanzee. *Journal of Virology*, 77:2233-2242.

2003 (with Santiago, M.L., Lukasik, M., Kamenya, S., Yingying, L., Bibollet-Ruche, F., Bailes, E., Muller, M.N., Emery, M., Goldenberg, D.A., Lwanga, J., Ayoub, A., Nerrienet, E., McClure, H.M., Heeney, J.L., Watts, D.P., Pusey, A.E., Collins, D.A., Wrangham, R.W., Brookfield, J.F.Y., Sharp, P.M., Shaw, G.M., & Hahn, B.H.) Endemic foci of simian immunodeficiency virus infection in wild-living eastern chimpanzees (*Pan troglodytes schweinfurthii*). *Journal of Virology*. 77: 7545-7562.

2003 Fifi fights back. *National Geographic* 203 (4): 76-89.

2004 (with Lodwick, J.L., Borries, C., Pusey, A.E., & McGrew, W.C.) From nest to nest - influence of ecology and reproduction on the active period of adult Gombe chimpanzees. *American Journal of Primatology* 64:249-260.

2005 (with Pusey, A.E., Oehlert, G.W., & Williams, J.M.) The influence of ecological and social factors on body mass of wild chimpanzees. *International Journal of Primatology*, 26: 3-31.

2006 (with Lonsdorf, E.V., Travis, D., & Pusey, A. E.). Using retrospective health data from the Gombe chimpanzee study to inform future monitoring efforts. *American Journal of Primatology*, 68: 897-908.

2007 (with M Emery Thompson, JH Jones, AE Pusey, S Brewer-Marsden, D Marsden, T Matsuzawa, T Nishida, V Reynolds, Y Sugiyama, RW Wrangham). Aging and fertility patterns in wild chimpanzees provide insights into the evolution of menopause.. *Current biology*: CB 17: 2150-6

2007 (with Pusey, A.E., Pintea, L., Wilson, M.W. & Kamenya, S.). The contribution of long-term research at Gombe National Park to chimpanzee conservation. *Conservation Biology* 21: 623-634.

2008 (with Ross, S.R., Lukas, K.E., Lonsdorf, K.V., Stoinski, T.S., Hare, B., Shumaker, R). Inappropriate Use and Portrayal of Chimpanzees. *Science* 319: 1487.

2008 (with Williams, J.M., Lonsdorf, E.V., Wilson, M.L., Schumacher-Stankey, J., Pusey, A. E.). Causes of death in the Kasekela chimpanzees of Gombe National Park, Tanzania. *American Journal of Primatology*. 70: 745-750.

2008 (with AE Pusey, CM Murray, W Wallauer, ML Wilson, & E Wroblewski). Severe Aggression among Female Pan troglodytes schweinfurthii at Gombe National Park, Tanzania. *International Journal of Primatology* 29: 949-973

2009 (with Keele, B.F, Jones, J.H. , Terio, K.A., Estes, J.D., Rudicell, R.S., Wilson, M.L., Li, Y., Learn, G.H., Beasley, T.M., Schumacher-Stankey, J., Wroblewski, E., Mosser, A., Raphael, J., Kamenya, S., Lonsdorf, E.V., Travis, D.A., Mlengeya, T., Kinsel, M.J., Else, J.G., Silvestri, G., Sharp, P.M., Shaw, G.M., Pusey, A.E., Hahn, B.H.). Increased Mortality and AIDS-like Immunopathology in Wild Chimpanzees Infected with SIVcpz. *Nature* 460: 515-519.

2010 (with Rudicell, R. S., Jones, J.H., Wroblewski, E.E, Learn, G. H., Li, Y., Robertson, J., Greengrass, E., Grossmann, F., Kamenya, S., Pintea, L., Mjungu, D.C., Lonsdorf, E.V., Mosser, A., Lehman, C., Collins, D.A., Keele, B.F., Pusey, A.E., Hahn, B., Wilson, M.L.). Impact of Simian Immunodeficiency Virus Infection on chimpanzee population dynamics. *PLoS Pathogens*. 6(9): e1001116

2011 (with Lonsdorf, E.V., Murray, C.M., Travis, D.A, Gilby, I.C., Chosy, J., Pusey A.E.). A retrospective analysis of factors correlated to chimpanzee (*Pan troglodytes schweinfurthii*) respiratory health at Gombe National Park. *Ecohealth*. DOI: 10.1007/s10393-011-0683-0.

2012 (with Pintea L, Pusey AE, Wilson ML, Gilby IC, Collins DA, Kamenya S). Long-term changes in the ecological factors surrounding the chimpanzees of Gombe National Park.

2012 (with Degnan, P. H., Pusey, A.E., Lonsdorf, E.V., Wilson, M.L., Wroblewski, E.E., Rudicell, R., Hahn, B.H., & Ochman, H.). Factors responsible for the diversification of the gut microbial communities within chimpanzees from Gombe National Park. *Proceedings of the National Academy of Arts and Sciences* 109: 13034-13039.

2013 (with Gilby IC, Brent L.N, Wroblewski EE, Rudicell RS, Hahn BH, Pusey AE.). Fitness benefits of coalitionary aggression in male chimpanzees. *Behavioral Ecology & Sociobiology* 67: 373-381

2014 (with Stanton, M.A, Lonsdorf, E.V., Pusey, A.E., Murray, C.M.). Maternal behavior by birth order in wild chimpanzees (*Pan troglodytes*): increased investment by first-time mothers. *Current Anthropology* 55: 483-489.

2014 (with Lonsdorf, E.V., Markham, A.C., Ciuk, D.J., Heintz, M.R., Anderson, K.E., Murrar, C.M.) Sex Differences in Wild Chimpanzee Behavior Emerge during Infancy. PLoS ONE 9(6): e99099.

2014 (with Lonsdorf, E.V., K.E. Anderson, M.A. Stanton, M.Shender, M.R. Heintz, and C.M. Murray. "Boys will be boys: Sex differences in wild infant chimpanzee social interactions," *Animal Behaviour* 88: 79-83.

Supplemental Affidavit of Mary Lee Jensvold, sworn to September 29, 2015
[pp. 607 - 612]

FILED: NEW YORK COUNTY CLERK 12/02/2015 05:12 PM

NYSCEF DOC. NO. 39

INDEX NO. 162358/2015

RECEIVED NYSCEF: 12/02/2015

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF NEW YORK

In the Matter of a Proceeding under Article 70 of the
CPLR for a Writ of Habeas Corpus,

THE NONHUMAN RIGHTS PROJECT, INC., on
behalf of TOMMY,

Petitioner,

-against-

**SUPPLEMENTAL
AFFIDAVIT OF MARY
LEE JENSVOLD, Ph.D**

Index No.

PATRICK C. LAVERY, individually and as an officer of
Circle L Trailer Sales, Inc., DIANE LAVERY, and
CIRCLE L TRAILER SALES, INC.,

Respondents.

STATE OF _____)
) ss:
COUNTY OF _____)

Mary Lee Jensvold being duly sworn, deposes and says:

Introduction and Qualifications

1. My name is Mary Lee Jensvold. I reside and work in Ellensburg, Washington. I hold a Ph.D. in Experimental Psychology from the University of Nevada, Reno, which I received in 1996.

2. I submit this Affidavit in support of Petitioner, The Nonhuman Rights Project, Inc.'s ("NhRP"), petition for a writ of habeas corpus brought on behalf of Tommy. I am a non-party to this proceeding.

3. I am currently Associate Professor in the Department of Anthropology and Museum Studies and former Director of the Chimpanzee and Human Communication Institute at

Central Washington University. I am also faculty in Primate Behavior and Ecology Program, at Central Washington University. I have taught the following courses at Central Washington University: Primate Social Behavior, Chimpanzee Culture and Communication, Introduction to Primate Laboratory Experience, Laboratory Work in Primatology, Primate Culture and Cognition, Introduction to Psychology, Psychology of Thought and Language, and Nonverbal Behavior, among others.

4. I have been a member of the Board of Directors of the Animal Welfare Institute since 2007 and Friends of Washoe³ (a nonprofit organization dedicated to the welfare of chimpanzees) since 1999, and have been on the Advisory Board of the Fauna Foundation (a chimpanzee sanctuary in Quebec, Canada) since 1999. From 1997 – 2000, I served on the Scientific Advisory Board for the National Chimpanzee Sanctuary. I have held positions as a chimpanzee behaviour consultant at Fauna Foundation, a Principal Investigator for “Caring for Chimpanzees” Earthwatch Program at Central Washington University, and have been a research assistant for sign language studies of chimpanzees at the University of Nevada, Reno. I was recently awarded the Sigma Xi Distinguished Lecturer Award for 2013 – 2015.

5. My research specialization is in gestural communication and use of American Sign Language in chimpanzees. Additionally, I research play behaviour, imagination, culture and intelligence, as well as husbandry, welfare and environmental enrichment in captive chimpanzees. I have over twenty-seven years of experience working with and studying chimpanzees and daily firsthand experience interacting with them. As such, I possess both a theoretical and applied understanding of chimpanzee behaviour.

6. I have published 29 peer-reviewed articles, book chapters and encyclopedia entries on gestural communication, use of American Sign Language, the evolution of social

communication, as well as environmental enrichment, effects of enclosures and social interactions, in chimpanzees. My papers have appeared in some of the most prestigious journals in the area of animal behaviour, including *Animal Cognition*, *American Journal of Primatology*, *Journal of Applied Animal Welfare Science*, *Human Evolution*, and *Journal of Sociolinguistics*.

7. I have given 91 presentations at professional conferences throughout the United States and have also given 13 invited addresses at professional research conferences and at various universities throughout the United States. These presentations have covered the following relevant topics: gestures and signing, cultural transmission, laughter and play, vocabulary development (American Sign Language), conversational use of sign language, evaluation of enriched captive environments and neuroscientific models of continuity across ape and human communication systems.

8. My Curriculum Vitae sets forth my educational background and experience and is annexed to my original Affidavit, filed herewith.

Basis for Opinions

9. The opinions I state in this Affidavit are based on my professional knowledge, education, training, and 27 years of research with chimpanzees, as well as my review of peer-reviewed literature about primatology published in the world's most respected journals, periodicals and books that are generally accepted as authoritative in the field of primatology, many of which were written by myself and colleagues with whom I have worked for many years and whose research and field work I am personally familiar with. A full reference list of peer-reviewed literature cited herein is annexed hereto.

Opinions

10. Chimpanzees can bear duties and responsibilities. One way this is demonstrated is by their social dynamics. Their communities are embedded in male hierarchy. Usually there is a single dominant male but often he only holds that position by the support of other males. In these cases these dominant males demonstrate a sense of duty to their supporters. For example, the dominant male will provide grooming, access to females, and perhaps access to meat to his primary supporter. This is well described by Nishida (1983). Chimpanzees are also highly protective of their communities, and will go to great lengths to defend them. This involves their shouldering responsibility.

11. I worked with five chimpanzees over nearly three decades studying how they use American Sign Language to communicate with humans and each other (Gardner, Gardner, & Van Cantfort, 1989; Fouts & Mills, 1997; Jensvold, Wilding, & Schulze, 2014; Jensvold, 2014; Leeds & Jensvold, 2013; Leitten, Jensvold, Fouts, & Wallin, 2012; Jensvold & Gardner, 2000). For decades, the daily routine at the Central Washington University laboratory in Ellensburg, Washington, involved the chimpanzees participating in numerous activities with caregivers. These included husbandry duties.

12. In the mornings, the chimpanzees helped clean enclosures by returning their blankets from the night before. The chimpanzees all participated; it was the duty that we placed upon them. When new caregivers appeared, the chimpanzees sometimes made an attempt at ditching their duties, but eventually they bore the responsibility of returning blankets and other objects in the enclosure to the caregiver. This was done without bribery.

13. At lunchtime, all of the chimpanzees were served a course of soup followed by a course of fresh vegetables that was offered only if all of the chimpanzees ate their soup. If one of

the chimpanzees refused to eat their soup, the others put pressure on the noneater by offering her the soup and a spoon. The noneater nearly always capitulated and ate the soup. This individual behavior that affected the group demonstrated their sense of responsibility and duty.


14. Maternal behavior is another clear indicator of responsibility. The signing chimpanzee Washoe adopted a 10-month-old chimpanzee named Loulis. While they bore no genetic relationship, Washoe was a very protective adopted mother. When I first met Loulis he was eight-years-old. Even at his late childhood age, Washoe was still very protective of him. Graduate assistants such as myself lived in fear of Loulis' screams, whether warranted or not, as they would bring Washoe down upon us in an instant. Washoe would then immediately display aggressive behaviors to the caregiver in defense of her son.

15. Chimpanzees have duties to each other. Their relationships to each other are even more supportive of each other than to a caregiver, no matter their level of fondness for the human. If a chimpanzee gives an aggressive display of behavior or indicator of being hurt or offended, the other chimpanzees always come to that chimpanzee's support by making aggressive barks at the human. Again this is regardless of the individual relationship with the human. Their first duty is to the other chimpanzees.

16. Moral behavior can be demonstrated in the chimpanzees' use of the sign SORRY, which they acquired while reared as deaf human children. If they did something aggressive to a human, the chimpanzees often responded with SORRY. These apologies go with morals and a sense of right and wrong. When the Central Washington University facility closed, the two remaining sign-language-using chimpanzees in the group, Tatu and Loulis, moved to a sanctuary with 11 other chimpanzees, none of whom knew sign language. Tatu sometimes antagonized her new neighbors by poking sticks at them through the fencing. That often elicited aggressive

behavioral displays, to which Tatu would sometimes respond by signing SORRY to the offended chimpanzee.

17. Based upon my research and expertise in this field, I support the NhRP's petition for a writ of habeas corpus on behalf of Tommy and the application of common law personhood to chimpanzees.


 Mary Lee Jensvold, Ph.D

Sworn to before me
 this 24th day of September, 2015


 Notary Public

DEVYNN HOPE
 Notary Public, Vermont
 My Commission Expires 02/10/19

Exhibit A to Jensvold Supplemental Affidavit -

References

[pp. 613 - 614]

REFERENCES

- Fouts, R., & Mills, S. T. (1997). *Next of kin: What chimpanzees have taught me about who we are*. William Morrow & Co.
- Gardner, R. A., Gardner, B. T., & Van Cantfort, T. E. (Eds.). (1989). *Teaching sign language to chimpanzees*. Suny Press.
- Jensvold, M.L. (2014). Experimental Conversations: Sign Language Studies with Chimpanzees. In N. Gontier & O. Pombo (Eds.), *The evolution of social communication in primates – a multidisciplinary approach* (pp. 63-82). Springer.
- Jensvold, M.L.A., & Gardner, R.A. (2000). Interactive use of sign language by cross-fostered chimpanzees. *Journal of Comparative Psychology*, 114, 335-346.
- Jensvold, M.L., Wilding, L., Schulze, S.M. (2014). Signs of Communication in Chimpanzees. In G. Witzany (Ed.), *Biocommunication of animals* (pp. 7-19). Dordrecht: Springer.
- Leeds, C.A. & Jensvold, M.L (2013). The communicative functions of five signing chimpanzees (*Pan troglodytes*). *Pragmatics & Cognition* 21:1, 224-247.
- Leitten, L., Jensvold, M.L., Fouts, R., & Wallin, J. (2012). Contingency in requests of signing chimpanzees (*Pan troglodytes*). *Interaction Studies*, 13, 147-164.
- Nishida, T. (1983). Alpha status and agonistic alliance in wild chimpanzees (*Pan troglodytes schwinfurthii*). *Primates*, 24, 318-336.

FILED: NEW YORK COUNTY CLERK 12/02/2015 05:12 PM

INDEX NO. 162358/2015

NYSCEF DOC. NO. 40

RECEIVED NYSCEF: 12/02/2015



PETER C FLETCHER
Notary Public

27 Pretoria Road
Cambridge
CB4 1HD

Tel. 01223 314061

Mob. 07775 923892

Email. petercfletcher@cambridgenotary.org

Website. www.cambridgenotary.org

Certificate of Conformity

I, Peter Coleman Fletcher of Cambridge, England, Notary Public duly authorised admitted and sworn, and practising within the United Kingdom and Northern Ireland do hereby certify and affirm under penalty of perjury that I witnessed the signature of Professor William C. McGrew as applied to the Affidavit attached to this Certificate, which was signed and dated on 9th October 2015

I confirm that the manner in which the Certificate was signed was, and is, in accordance with, and conforms to, the Laws for taking oaths and acknowledgements in England.

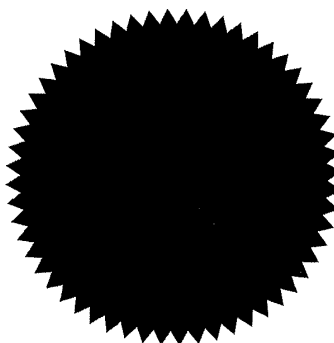
A handwritten signature in black ink that reads "Peter Coleman Fletcher".

Peter Coleman Fletcher

Notary Public

09 OCT 2015

PETER C. FLETCHER
 Notary Public
 27 Pretoria Road
 Cambridge CB4 1HD
 My commission is for life



Supplemental Affidavit of William C. McGrew, sworn to October 9, 2015
[pp. 615 - 625]

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF NEW YORK

In the Matter of a Proceeding under Article 70 of the
CPLR for a Writ of Habeas Corpus,

THE NONHUMAN RIGHTS PROJECT, INC., on
behalf of TOMMY,

Petitioner,

-against-

PATRICK C. LAVERY, individually and as an officer of
Circle L Trailer Sales, Inc., DIANE LAVERY, and
CIRCLE L TRAILER SALES, INC.,

Respondents.

**SUPPLEMENTAL
AFFIDAVIT OF
WILLIAM C. MCGREW,
Ph.D**

Index No.

UNITED KINGDOM)
)
COUNTRY OF ENGLAND) ss:
)
CITY OF Cambridge)

William C. McGrew being duly sworn, deposes and says:

Introduction and Qualifications

1. My name is William C. McGrew. I reside and work in Cambridge, England. I was awarded a D.Phil. in Psychology from the University of Oxford in 1970, a Ph.D. from in Social Anthropology from the University of Stirling (Scotland) in 1990, and a Ph.D in Biological Anthropology from the University of Cambridge in 2009.

2. I submit this affidavit in support of Petitioner, The Nonhuman Rights Project, Inc. ("NhRP"), on behalf of Tommy, for a writ of habeas corpus. I am a non-party to this proceeding.

3. I am currently Emeritus Professor of Evolutionary Primatology in the Division of Biological Anthropology, Department of Archaeology and Anthropology, University of Cambridge. Since 1972 I have taught the following courses (in reverse chronological order): Cultural Primatology, Apes as Models for Human Evolution, Primate Socio-Ecology at the University of Cambridge; Behavioral Ecology and Conservation Biology, Human Evolutionary Ecology, Mammalogy, Origins of Human Material Culture, and Socio-Ecology of Primates at Miami University (Ohio), Socio-Ecology of Primates at Earlham College (Indiana), Animal Behaviour, Behavioral Primatology, and Developmental Psychology at University of Stirling.

4. I was elected a Fellow of the Royal Society of Edinburgh in 2003 and the American Association for the Advancement of Science in 2005. I am a recipient of the Howells Prize (American Anthropological Association), Prix Delwart (Royal Academy of Sciences, Belgium), and Osman Hill Medal (Primate Society of Great Britain). I have held visiting appointments at the University of California-Berkeley, University of New Mexico, University of North Carolina-Charlotte, Tulane University, as well as the Collegium Budapest (Hungary), College de France (Paris), and Hanse-Wissenschaftskolleg (Delmenhorst, Germany).

5. I have served on the IUCN-SSC Primate Specialist Group, Africa and Great Apes since 2004 and on the Scientific Board, International Primate Protection League since 1977. I served on the Board of Directors of Chimp Haven, Inc. from 1999-2005 and the Council and Executive Committee of the Royal Zoological Society of Scotland in 1975. I have served on the editorial boards of the following scientific journals: *American Journal of Primatology* (1991 - 1999), *Folia Primatologica* (1989 -2009), the *International Journal of Primatology* (1995 - 2000) and *Primates* (1985 - present).

6. My specialization is in the great apes, and especially the study of the behaviour and ecology of chimpanzees. I have done field research on chimpanzees and bonobos from 1972-2012, in six African countries. These studies have spanned the species' range from West Africa (Senegal and Guinea) to Central Africa (Gabon and Congo-Kinshasa) to East Africa (Tanzania and Uganda). I have collected data on wild chimpanzees at more research sites than any other scientist. I have done behavioural research on captive chimpanzees in laboratories, sanctuaries, wildlife parks, and zoological gardens.

7. I have written or co-edited 10 books, seven of which are relevant here, including: *Chimpanzee Material Culture* (1992, Cambridge University Press); *Topics in Primatology. Vol.1. Human Origins* (1992, University of Tokyo Press); *Chimpanzee Cultures* (1994, Harvard University Press); *Great Ape Societies* (1996, Cambridge University Press); *The Cultured Chimpanzee* (2004, Cambridge University Press), *Chimpanzee Behavior in the Wild* (2010, Springer); *The Evolution of Human Handedness* (2013, Wiley). Some have been translated into such languages as Italian, Japanese, and Slovenian.

8. I have published 162 articles and book chapters on the behaviour, ecology, welfare, or conservation of monkeys and apes, including more than 100 peer-reviewed articles in the world's most-cited scientific journals: *Nature*, *Science*, *Proceedings of the National Academy of Sciences USA*, *Proceedings of the Royal Society*, *Philosophical Transactions of the Royal Society*, *Evolutionary Anthropology*, *American Journal of Physical Anthropology*, *Animal Behaviour*, *Animal Cognition*, *Current Anthropology*, *Current Biology*, *Trends in Cognitive Science*, *Trends in Ecology and Evolution*, as well as more specialised academic periodicals, 44 chapters in edited book volumes, and the rest in the popular press. These publications have covered 15 species of non-human primates, from common marmoset to chimpanzee and gorilla.

Specific topics of these publications include: culture, tool-use, diet, sexual behaviour, sex differences, birth, predation, parasites, social organisation, ranging, kinship, parental behaviour, environmental enrichment, rehabilitation, food-sharing, mating systems, handedness, seasonality, genetics, bipedality, activity budgets, skeletal structure, psycho-pathology, vegetation ecology, archaeology, alcohol ingestion, and insectivory.

9. I regularly give invited lectures and take part in international symposia in primatology. Over the last 40 years, such speaking engagements have averaged about 4 per year. This does not count many more research talks given at universities or at regional, national or international conferences. These lectures and symposia have taken place in: Austria, Belgium, Canada, England, France, Germany, Guinea, Indonesia, Italy, Japan, Mexico, Portugal, Romania, Russia, Scotland, Singapore, South Africa, Spain, Switzerland, and USA.

10. My Curriculum Vitae sets forth my educational background and experience and is annexed to my original Affidavit, filed herewith.

Basis for Opinions

11. The opinions I state in this Affidavit are based on my professional knowledge, education, training, and 40 years of research and field work with chimpanzees, as well as my knowledge of peer-reviewed literature about primatology published in the world's most respected journals, periodicals and books that are generally accepted as authoritative in the field of primatology, many of which were written by myself and colleagues with whom I have worked for many years and with whose research and field work I am personally familiar. A full reference list of peer-reviewed literature cited herein is annexed hereto.

Opinions

12. Among its various definitions for ‘duty’, the *Oxford English Dictionary* gives “behaviour due to a superior”, “deference”, “obligation”, and “the binding force of what is morally right”. Similarly, for ‘responsibility’, the *OED* gives “a charge, trust, or duty, for which one is responsible”. It defines ‘responsible’ as “accountable for one’s actions”, “having authority or control”, and “capable of rational conduct... of fulfilling an obligation or trust”.

13. Chimpanzees assume duties and responsibilities. In providing some of the evidence of this, I will concentrate on my speciality, field studies of wild chimpanzees, leaving findings from captive chimpanzees for others to recount.

14. Chimpanzee mothers show a “duty of care” to their offspring that rivals that of humans. As single mothers, they feed, protect, carry, shelter, and train their infants, for an average of 5.5 years, from birth until weaning (Clark 1977). Without this succour, infant chimpanzees die (unless adopted, see below). After weaning, chimpanzee mothers continue to groom, support and cooperate with their offspring for the rest of their lives, even into the adulthood of their offspring and the old age of the mothers (Goodall 1986b).

15. Chimpanzee mothers may continue this care, even after the death of an infant. They may carry and safeguard the infant’s corpse for days, or even weeks, until it has perished to the point of disintegration (Biro et al., 2010). Moreover, young female chimpanzees practice their future maternal behaviour by using sticks as ‘dolls’, while young males do not, in a form of symbolic play. (Kahlenberg and Wrangham 2010).

16. Such familial duties are not restricted just to mothers, however. Maternal siblings of both sexes also supplement the mother with similar care-giving behaviours (except for suckling). This preferential treatment endures throughout their lives, for example, adult brothers

may work together in alliance to strive to rise in the community's dominance hierarchy (Riss and Goodall 1977). The two highest-ranking female kinship lineages (matrilines) at Gombe, the longest-studied population of wild chimpanzees, in western Tanzania, are the F and G families. In these families, patterns of familial duties have extended through three generations, that is, grandmothers also participate in the upbringing of their grandchildren. These families also show the highest reproductive success, in terms of offspring survival.

17. Such duties of care extend beyond shared genes (kinship). A chimpanzee infant orphaned by the death of the mother may be adopted by others to whom it is not related. Moreover, these foster parents need not be female, nor even adult. Adopted orphans are more likely to survive, while unadopted orphans below the age of weaning almost always perish (Boesch et al. 2010). Such bonds may last a lifetime, even between unrelated males in adulthood, as expressed in the 'currency' of chimpanzee social life, grooming (Mitani 2009).

18. Duties and responsibilities beyond the family (or lineage) cross over into the realm of the community (or unit-group), which is the basic social unit of chimpanzees. A simple example is territorial defense. Chimpanzee territories are defended collectively, unlike the individual territories of most animals; they must work together (see below) to defend themselves and their resources against their neighbours. Relations with neighbouring communities are hostile, so that stronger communities may displace weaker ones, resulting in loss of resources or reproductive partners (Mitani et al. 2010). Such extreme competition can enact a fatal toll: A single male caught in the border zone by the neighbours may be killed; a single female with infant similarly caught may have her baby killed and eaten by them (Wilson et al. 2014). Xenophobia exacts a cost on outsiders.

19. To maintain territorial integrity, males cooperate regularly to patrol the boundaries of the community's territory (Wilson et al. 2014). If their territory is invaded, they display together against the intruders, or if necessary, attack them. This is a necessary chore. Numbers count, so any individual shirking responsibility lets down the group, in effect. In a border skirmish, a male deserted by comrades may perish. On the other hand, a united group may prevail and win rewards. Such patrols are conducted cautiously and silently; a male who makes noise may give away his colleagues. Even a snapped twig leads to apparently disapproving glances from the others. (I know this because I have unwittingly been guilty of such a misstep, and been on the receiving end of this silent reproach.) What makes this shared responsibility so impressive is that the same males whose lives depend on one another in the patrol will later compete robustly with one another over (e.g.) access to a receptive female. Somehow, they can resolve the contradictions involved in having conflicting interests in different contexts (Goodall 1986b). This implies mutual recognition of shared responsibilities.

20. Another chimpanzee universal that necessarily entails duties and responsibilities is participation in a hierarchy of social dominance. Male chimpanzees rank-order themselves from alpha (top) to omega (bottom) in linear fashion (Goodall 1986b). The advantages of high rank and the disadvantages of low rank are obvious: More dominant individuals win more resources and mates. So, why do low-rankers take part in the system at all? Why not just withdraw? Two reasons stand out: It is better to be low-ranking in a group than to be unranked in solitude. And, there are costs as well as benefits to being high-ranking, which low-rankers avoid.

21. One of the costs of alpha status is the duty to exercise 'policing' powers in the community (Goodall 1982). The alpha male's role includes a variety of time- and energy-sapping activities, such as intervening in quarrels or fights between other community members, thus

maintaining community integrity and preventing injury. He oversees the distribution of valuable resources, such as meat, after a successful hunt. (This is not to say that such activities are altruistic, and some males may be less responsible than others, or more self-serving, but these activities do help to maintain the common good.) Finally, there are other, less obvious ‘chores’ associated with high rank: When crossing roads, high-ranking males lead the way, being vigilant for traffic, and bring up the rear, making sure that others are not left behind (Hockings et al. 2006).

22. Perhaps the most impressive example of collective community action is what sometimes occurs after the death of a community member (Anderson 2011). Others may perform what amounts to a funeral ceremony, or at least a wake. They congregate around the corpse, groom and test it for viability, seeming to seek to arouse it. Then, as if accepting that death has occurred, they maintain a silent vigil that may last for hours. This collective action occurs both in nature (Piel and Stewart in press) and in captivity (Anderson et al. 2010). This appears to involve the exercise of duty or responsibility as there is no obvious material pay-off to the individuals who join in.

23. Chimpanzees show behaviour that seems lawful and rule-governed. Goodall (1982) cited multiple examples of behavioural regularity that reflected the maintenance of social order: adult males being protective of infants, dominant individuals breaking up fights (policing), incest avoidance between adult kin, possessiveness of other individuals’ objects, etc. (Goodall 1986a). Sometimes this takes the form of specific, targeted ostracism of individuals who violate norms, such as a young adult male who disrespected higher-ranking males, who was fatally punished (Nishida et al. 1995).

24. Another indicator of rule-governed social interaction within a group is systematic, long-term reciprocity of favours or benefits among its members. That is, ‘you scratch my back, I scratch yours’. A simple form is literally this, that is, like-for-like social grooming, but a more complex form is the exchange of differing goods or services, for example, if I provision you with prized food, such as meat, then at a later point, you will favour me as a mate (Gomes and Boesch 2009). Or, if you support me in my aggressive attempts to rise in dominance, then I will allow you access to females for mating (Duffy et al. 2007). Such arrangements only work in the long term (i.e. over years) if participants assume and carry out obligations offered and accepted.

Ape and Human

25. I know of few cross-species examples of duty and responsibility in nature, that is, examples of chimpanzees showing this to humans, although many examples can be found in relationships between captive chimpanzees and humans. Perhaps the best example in the wild is the simplest one: Researchers at Gombe National Park in Tanzania have studied wild chimpanzees for more than 55 years. Tens of thousands of observation hours at close quarters have accumulated over these decades. Most of the chimpanzees studied have spent time with researchers from birth onwards, their whole lives, on a daily basis. Chimpanzees have impressive slashing canine teeth, such that a single bite to a human could cause serious injury, even death. *Yet, not a single instance has occurred of a chimpanzee biting a researcher.* However many times researchers have inadvertently interfered with or frightened a Gombe chimpanzee, through ignorance or by accident, no chimpanzee has ever retaliated in the ultimate way. This is very impressive. At the very least, it shows remarkable tolerance by the apes, or more likely they see the long-established relationship with these familiar humans as something they are duty-bound to uphold.

26. When chimpanzees and local humans live at close quarters, especially in unprotected areas, outside of national parks or reserves, both parties must adjust to one another (Hockings et al. 2012). Each impinges on the other, sometimes negatively (crop-raiding by apes; deforestation by humans), sometimes positively (each tolerates disturbance of their preferred daily routines). Humans who tap wild palm trees for sap, which ferments into ‘palm wine’, allow chimpanzees to pilfer this beverage from their containers (Hockings et al. 2015). Sometimes these interactions go beyond the mundane, into matters of life and death. At Fongoli, a wild chimpanzee research site in Senegal, poachers captured a wild chimpanzee infant. Researchers tracked them down in a nearby town and reclaimed the infant. They then returned to the site, and when the context was right, restored the infant to its mother, and the two live on (Pruetz and Kante 2010). Each party respected the duty of care involved in parenthood.

27. Given all of the above, and my experience of forty years observing chimpanzees in the wild, it is my opinion that chimpanzees understand and carry out duties and responsibilities, that they knowingly assume obligations and honour them. Most importantly, such behaviour is essential for the maintenance of chimpanzee society, and it can be extended to human beings when necessary. The evidence presented passes the ‘as if’ test, that is, when we see such behaviour shown by humans, we credit it, and we should do the same with chimpanzees.

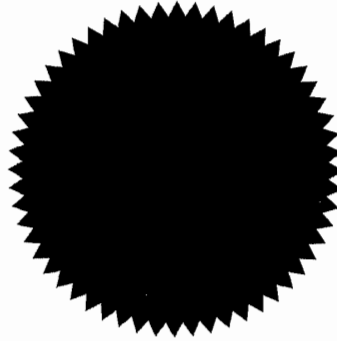
28. Based upon my research and expertise in this field, I support the NhRP’s petition for a writ of habeas corpus on behalf of Tommy and the application of common law personhood to chimpanzees.

William C. McGrew
William C. McGrew, Ph.D

Sworn to before me
this 9th day of October, 2015

P. Fletcher
Notary Public

PETER C. FLETCHER
Notary Public
27 Pretoria Road
Cambridge CB4 1HD
My commission is for life



**Exhibit A to McGrew Supplemental Affidavit -
References
[pp. 626 - 627]**

REFERENCES

- Anderson, J.R. (2011) A primatological perspective on death. *American Journal of Primatology* 73:410-414.
- Anderson, J.R. et al. (2010) Pan thanatology. *Current Biology* 20(8):R349-351.
- Biro, D. et al. (2010) Chimpanzee mothers at Bossou, Guinea carry the mummified remains of their dead infants. *Current Biology*, 20(8):R351-352.
- Boesch, C. et al. (2010) Altruism in forest chimpanzees: the case of adoption. *PLoS One* 5(1):e8901.
- Clark, C.B. (1977) A preliminary report on weaning among chimpanzees of the Gombe National, Tanzania. In: Chevalier-Skolnikoff, S. & Poirier, F.E. (ds.), *Primate Bio-Social Development*. New York: Garland, pp. 235-260.
- Duffy, K.G. et al. (2007) Male chimpanzees exchange political support for mating opportunities. *Current Biology* 17(15): R586-587.
- Goodall, J. (1982) Order without law. *Journal of Social and Biological Structures* 5: 353-360.
- Goodall, J. (1986a) Social rejection and shunning among the Gombe chimpanzees. *Ethology and Sociobiology* 7: 227-239.
- Goodall, J. (1986b) *The Chimpanzees of Gombe*. Cambridge, MA: Harvard University Press.
- Gomes, C.M. and Boesch, C. (2009) Wild chimpanzees exchange meat for sex on a long-term basis. *PLoS One*, 4(4):35116.
- Hockings, K. J et al. (2012) Socioecological adaptations by chimpanzees, *Pan troglodytes verus*, inhabiting an anthropogenically impacted habitat. *Animal Behaviour* 83:801-810.
- Hockings, K.J. et al. (2006) Road crossing in chimpanzees: a risky business. *Current Biology* 16(17): R668-670.
- Hockings, K.J. et al. (2015) Tools to tipple: ethanol ingestion by wild chimpanzees using leaf-sponges. *Royal Society Open Science* 2: 150150.
- Hockings, K.J. et al. (2015) Apes in the Anthropocene: flexibility and survival. *Trends in Ecology and Evolution*, Vol. 30(4)
- Kahlenberg, S.M and Wrangham, R.W. (2010) Sex differences in chimpanzees' use of sticks as play objects resemble those of children. *Current Biology* 20(24):R1067-1068.

- Mitani, J. (2009) Male chimpanzees form enduring and equitable social bonds. *Animal Behaviour* 77:633-640.
- Mitani, J. et al. (2010) Lethal intergroup aggression leads to territorial expansion in wild chimpanzees. *Current Biology* 20: R507-508.
- Nishida, T. et al. (1995) A within-group gang attack on a young adult male chimpanzee: ostracism of an ill-mannered member? *Primates* 36: 207-211.
- Piel, A.K. and Stewart, F.A. (in press) Non-human animal responses towards the dead and death: a comparative approach to understanding the evolution of human mortuary practices. In: *Death Shall Have No Dominion: The Archaeology of Mortality and Immortality*, Renfrew, C. et al. (eds.), Cambridge University Press.
- Pruetz, J.D. and Kante, D. (2010) Successful return of a wild infant chimpanzee (*Pan troglodytes verus*) to its natal group after capture by poachers. *African Primates* 7:35-41.
- Riss, D.C. and Goodall, J. (1977) The recent rise to the alpha rank in a population of free-living chimpanzees. *Folia Primatologica* 27: 134-151.
- Wilson, M.L. et al. (2014) Lethal aggression in *Pan* is better explained by adaptive strategies than human impacts. *Nature* 513:414-417.

Supplemental Affidavit of Emily Sue Savage-Rumbaugh, sworn to December 1, 2015
[pp. 628 - 652]

FILED: NEW YORK COUNTY CLERK 12/02/2015 05:12 PM

NYSCEF DOC. NO. 41

INDEX NO. 162358/2015

RECEIVED NYSCEF: 12/02/2015

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF NEW YORK

In the Matter of a Proceeding under Article 70 of the
CPLR for a Writ of Habeas Corpus,

THE NONHUMAN RIGHTS PROJECT, INC., on behalf
of TOMMY,

Petitioner,

-against-

**SUPPLEMENTAL
AFFIDAVIT OF EMILY SUE
SAVAGE-RUMBAUGH**

PATRICK C. LAVERY, individually and as an officer of
Circle L Trailer Sales, Inc., DIANE LAVERY, and
CIRCLE L TRAILER SALES, INC.,

Index No.

Respondents.

STATE OF _____)
) ss:
COUNTY OF _____)

Emily Sue Savage-Rumbaugh, being duly sworn, deposes and says:

Introduction and Qualifications

1. My name is Emily Sue Savage-Rumbaugh. I received a B.A. in Psychology from Southwest Missouri University in 1970, a M.S. in Psychology from University of Oklahoma in 1975, and a Ph.D. in Psychology from the University of Oklahoma in 1975. I have been awarded honorary Ph.Ds by the University of Chicago in 1997 and Missouri State University in 2008. I work and reside in Des Moines, Iowa.

2. I submit this affidavit in support of Petitioner, The Nonhuman Rights Project, Inc. ("NhRP"), on behalf of Tommy, for a writ of habeas corpus. I am a non-party to this proceeding.

3. I am currently the President of Bonobo Hope and Co-Director of the Panbanisha Chimpanzee and Bonobo Sanctuary. I previously served as (in reverse chronological order): (1) an Affiliate Professor at Iowa State University, Simpson college for seven years; (2) a Professor, an Associate, and an Adjunct Professor in the Department of Biology & Psychology at Georgia State University over the course of twenty-five years; and (3) an Associate Research Professor, Assistant Research Professor, and Research Associate at the Yerkes Primate Research Center at Emory University over a twelve year period. I have regularly taught classes in primate behavior, evolution of innate behaviors, evolution of learned behavior, learning theory, developmental psychology, biology, psycho-biology of language, socio-biology, and introductory ethology.

4. During my career I have received sixteen awards from a variety of academic, research, nongovernment, media, and professional organizations. Some of the more notable include: (1) one of the most 100 influential scientists in the world by *Time Magazine* in 2010; (2) selection by the Millennium Project for inclusion on the 100 most influential works in cognitive science in the 20th century for my book titled, "Language comprehension in ape and child," (1993, Monographs of the Society for Research in Child Development); (3) a Fellow at the American Psychological Association; and (4) a Woodrow Wilson Fellow (1970-1975). I have also received funding support from, the University of Oklahoma, National Control Devices, The Templeton Foundation, The Townsend Foundation, The Milt Harris Foundation for the study of intelligence, language and social behaviour in chimpanzees, beginning in 1972 and continuing to date.

5. I am affiliated with a number of professional organizations including the International Primatological Society and the American Psychological Association. During the course of my career, I have also received numerous research grants including grants from: (1)

National Institute of Child Health and Human Development; (2) Biomedical Research Support Grant, Emory University; (3) World Wildlife Fund; and (4) The Templeton Foundation.

6. My research specialization is in the study of the language learning and cognition of chimpanzees and bonobos. I began studying the cognitive processes and linguistic behavior in captive chimpanzees in 1971. From 1972 to 1975, I conducted captive studies of mother-infant groups of chimpanzees. From 1975 to 1976, I studied the social behavioral of *Pan paniscus* and *Pan troglodytes*. Following that, I spent thirteen years (between 1976-1989) conducting studies of symbolic and cognitive processes in *Pan paniscus*, *Pan troglodytes*, and ailinguistic *Homo sapiens*. In 1993, I spent a year studying free-ranging bonobos. From 1989 until present, I have studied the lexical and vocal linguistic ability, musical ability, tool manufacturing ability and general cognitive development of apes, with a specific focus on bonobos.

7. I have written or co-authored seven books, the most relevant include: (1) *Ape Language: From Conditioned Response to Symbol* (1986, New York: Columbia University Press); (2) *Kanzi: A Most Improbable Ape* (1993, NHK Publishing Co: Tokyo, JAPAN); (3) *Kanzi: The Ape at the Brink of the Human Mind* (1994, New York: John Wiley Publishers); (4) *Apes, Language, and the Human Mind* (1998, New York, NY: Oxford University Press); and (5) *Kanzi's Primal Language: The cultural initiation of apes into language* (2005, London: Palgrave/Macmillan). I have also appeared in five films on chimpanzees and apes, three NHK network (Japan) specials and one BBC special.

8. I have published 183 articles on the learning capability, behaviour, ecology, welfare, or conservation of chimpanzees, monkeys, and baboons. These articles are published in many of the world's most-cited peer-reviewed scientific journals, including: *Science*, *American Journal of Primatology*, *Folia Primatologica* (the official journal of the European Federation for

Primateology), *International Journal of Primatology*, *Journal of Comparative Psychology*, *Journal of Human Evolution*, *Behavioral and Brain Sciences*, and *Journal of Experimental Psychology*, *Journal of Biology and Philosophy*. I have also published in *Proceedings of the Fifth International Congress of Primatology*, *Proceedings of the Sixth International Congress of Primatology*, *Contemporary Primatology*, *Encyclopedia Americana*, *Collier's Encyclopaedia*, *Encyclopaedia Britannica Yearbook*, *The Cambridge encyclopaedia of human evolution* and *Encyclopaedia of Neuroscience*. Specific topics of these publications include: the use of symbolization and language by chimpanzees, group formation among captive mother-infant chimpanzees, human-oriented courtship behavior in a human-reared chimpanzee, mothering behavior towards a kitten by a chimpanzee, play and socio-sexual behaviour in chimpanzees, chimpanzee communication, chimpanzee tool use, chimpanzee cognition, chimpanzees and protolanguage, primate intelligence, chimpanzee counting, communicative intentionality in the chimpanzee, the relationship between language in apes and human beings, summation in the chimpanzee, care of captive chimpanzees, imitation by an ape, grammatical development by an ape, the invention of protogrammar by an ape, imitative learning in chimpanzees, delay of gratification in chimpanzees, spontaneous logicomathematical constructions by chimpanzees, primate geometry, and ape consciousness.

9. I regularly give invited lectures and take part in international symposia on primatology, which I have done since 1978. In the United States, I have given lectures at Columbia University, Emory University, Princeton University and the University of Chicago, among many other notable educational institutions. I have also given lectures and presentations on primates in other countries including: England, Japan, Canada, Germany, Australia, Portugal, France, Mexico, Sweden and Berlin.

10. My Curriculum Vitae sets forth my educational background and experience and is annexed to my original Affidavit, filed herewith.

Basis for Opinions

11. The opinions I state in this affidavit are based on my professional knowledge, education, training, research and fieldwork, as well as my review of peer-reviewed literature. A full reference list of peer-reviewed literature cited herein is annexed hereto.

12. In addition, the opinions set forth herein are based on many years of collaboration and research with my colleague, Duane Rumbaugh. Professor Rumbaugh and I have designed and implemented research experiments together in a joint laboratory and have co-authored numerous peer-reviewed articles.

Opinions

13. Chimpanzees and bonobos who acquire language are often asked to carry out duties and responsibilities and succeed. (Savage-Rumbaugh, Rumbaugh and Boysen, 1978a, Savage-Rumbaugh, 1986; Savage Rumbaugh, 1993). They enter into contractual agreements (such as “If you do X, I’ll do Y.”) They evidence an understanding of their duties and responsibilities both in their interactions with human beings and in their interactions with each other. (Savage-Rumbaugh, 1986a; Segerdahl, Fields and Savage-Rumbaugh, 2005). For example, one chimpanzee will remind another of the task at hand, if the attention wanders. (Savage-Rumbaugh, Rumbaugh and Boysen, 1978b). Bonobos in the wild have duties to see that all members of the group have access to food, that all group members arrive at a feeding source together, and that all group members have access to that source in a manner that benefits the entire group. This requires cognitive concentration, social rules and a greater sense of social responsibility for the ‘good’ of the group than for fulfilling one’s individual desires. (NHK

Video, archive footage, Savage-Rumbaugh, in preparation; Savage-Rumbaugh, Williams, Furuichi and Kano, 1994; Kano, 1992). Chimpanzees inhabit sparser environments and therefore travel in smaller parties and generally feed at separate locations. However the larger “unit group” does travel together, though out of sight of one another. Individuals sleep separately, but in vocal contact with each other. The distances between a travelling group of chimpanzees make it mandatory for them to share similar information with one another. It appears that long distance vocalizations are employed to announce arrival at large food patches, and other information regarding food and planned travel patterns are shared among group members (Pruetz, archive video, Goodall, 1986; Boesch, 2012).

14. In the case of chimpanzees and bonobos whom I study in a cross-cultural linguistic (*Pan/Homo*) world, duties and responsibilities (and the moral imperatives they necessarily entail) are simply a part of everyday life.

15. The focus of the research is upon determining the degree to which both species of apes are capable of human language and human culture. Because human children acquire these abilities by being reared in families and villages where such capacities are naturally expected to emerge in their children, bonobos and chimpanzees were reared in a similar manner and with similar expectancies in order to equate the cultural and environmental experiences of both species. (The psychological literature is replete with findings that “expectancies” during rearing are a central component in establishing the capabilities that human children display). It is noteworthy that these chimpanzees and bonobos were never treated as pets. They were *expected*, at all times, to behave as the self-conscious beings that apes are.

16. There are two critical capacities that allow for the emergence of symbolic thought and language, and thus the emergence of a self-conscious understanding of one’s duties and

responsibilities to the group, or the capacity to see one-self as others see them. The first is the capacity to cognitively step outside the “flow” of life and reflect upon it. Chimpanzees and bonobos reared in a language world clearly display this capacity. They recognize their shadows; they recognize themselves in mirrors; they apply bodily decorations; they intend beyond the immediacy of the current social situations in which they are engaged; they signal intent by means other than through the use of incipient actions; and they prevent their offspring from engaging in behaviors that could be dangerous, long before danger actually arises. “Danger” is thus “cognitively defined” rather than simply perceived. The second is the awakening of the ape child’s desire to adopt and to accept duties and responsibilities. This awakening resides in the emotional cross-cultural attachments between group members. Both humans and apes engaged in this research display a degree of mutual trust and cooperation otherwise found only *within* a species, in a cross-cultural bi-species world.

17. The focus of ape language and cultural studies has been to determine the extent to which apes have the capacity for human forms of culture and language. Duties and responsibilities are a natural extension of both human language and human culture, though their documentation has not often been the focus of inquiry. As with many things, duties and responsibilities simply fall naturally out of the appearance of human language and culture. Therefore, documentation of these abilities listed here is to be found in visual material and descriptive accounts along with allusions to such abilities in studies dedicated to other topics. For this reason, a general list of applicable references are provided as an addendum to this affidavit in place of a particular citation for each capacity reported herein.

18. Individual chimpanzees and bonobos vary widely in their interests and in the particular capacities they seek to master, as do human children. Often if one chimpanzee or

bonobo excels in some skill, those close in age seek to excel in other skills. For example, Kanzi views himself as the expert stone tool maker and the expert fire maker in the group. He behaves as though it is his responsibility to demonstrate these skills, and to practice them. He clearly does not appreciate it if Panbanisha takes this role, or if she is asked to take this role by humans in the name of research. Panbanisha is the artist and story manufacturer, Elykia is the translator between human and bonobo languages, Teco is the one who found a way to cheer up the group when their spirits are low, Matata teaches the skills of the forest, Nathan was the mediator between the worlds, P-Suke was the sex symbol, Panzee was the puzzle solver, Maisha is the show-off, Sherman is the leader, Lana is the critic and Austin was the careful one. Each of these apes recognized the roles of the others and “stood down” when the recognized expert set about to demonstrate their capacities for human visitors.

19. Capacities indicative of the chimpanzees’ ability to assume duties and responsibilities and to make contractual agreements in the groups with which I worked included:

- a. A conscious awareness of the fundamental importance of fire, accompanied by an understanding that fire is produced by a variety of different kinds of activities.
 - 1) A conscious awareness of the need to responsibly practice this skill and to demonstrate it to human beings who place great value on it.
 - 2) A conscious awareness of all the component skills required (finding dry twigs and leaves, placing them in a pile, lighting them, adding additional larger pieces of wood as fuel, not adding too much fuel and the need to keep the fire contained, the need to

take to avoid being burned, and the need to put the fire out, lest it spread).

- 3) A conscious awareness of the way in which fire alters the texture, taste, and desirability of various foods, making some better and others worse.
 - 4) A conscious awareness of the properties and material required to start fire, i.e., small dry sticks, paper, etc.
- b. A conscious awareness of how to cook a meal as a human would, accompanied by an understanding of the responsibility to practice this and to demonstrate to human beings this ability. Within activities that dealt with cooking, they were many sub-components they were willing to demonstrate, including:
- 1) Obtaining pots and pans
 - 2) Obtaining foods
 - 3) Chopping foods
 - 4) Mixing and stirring foods
 - 5) Heating foods
 - 6) Serving foods
 - 7) Extracting juices
 - 8) Crushing seeds
 - 9) Blending foods as they processed them through different stages of heat
- c. Within their own social group they assumed responsibilities listed below:

- 1) Teaching younger group members rules about food sharing
- 2) Teaching younger group members rules for how to interact with human beings
- 3) Teaching younger group members about dangerous animals
- 4) Protecting younger group members from dangerous animals
- 5) Teaching younger group members about dangerous objects and/or locations in the environment
- 6) Protecting younger group members from dangerous objects and/or locations in the environment
- 7) Conveying vital information to other group members about the actions of humans as well as other group members that were out of site
- 8) Teaching those members of the bonobo group who had little human contact how to employ lexical symbols in communicative exchanges with human
- 9) Teaching those group members who had little human contact how to employ vocal symbols in exchanges with humans
- 10) Informing group members of any unusual or suspicious actions on the part of humans
- 11) Informing group members of any unusual or suspicious actions on the part of animals

- 12) Those who could comprehend spoken English assuming the responsibility to translate for other members that were unable to comprehend spoken English
- 13) Taking into account which members were not receiving sufficient food from human caretakers who made their own rules about how much food various bonobos were allowed and flaunting human rules by hiding food for those members who were being underfed
- 14) Protecting young humans and young apes from falling or engaging in activities that could lead to harm
- 15) Seeing that needed items, such as blankets were distributed among the group in a responsible manner
- 16) Conveying to human beings whom they trusted, information regarding deceitful actions of other human beings
- 17) Conveying to human beings whom they trusted, information regarding physical harm done to them by human beings who tried to intimidate and frighten the bonobos by violent means
- 18) Reminding human beings of promises that had been made to themselves or to other members of their own social group
- 19) Taking responsibility for care of dogs and making certain that dogs were properly treated
- 20) Taking responsibility for care of orangutans and making requests for their needs when the orangutans were unable to do so for themselves

- d. A conscious awareness of the importance painting and writing serve as symbolic modes of expression. An understanding of the need to paint in a manner that is interpretable by human beings, and an ability to so do.
- e. A conscious awareness of the importance of making and understanding contractual agreements and promises (“If you do X I will do Y”, or “I do Y, will you promise to do X?”) and to keep them. These agreements are made linguistically and cover all manner of situations with both humans and other chimpanzees. Examples include:
 - 1) “If you promise to stay with me, we will go outdoors.”
 - 2) “If you will watch Teco for me, while I go get tea, I will bring you some.”
 - 3) “If you want some Austin’s Cheerios, please give some of your peanuts to him.”
 - 4) “If you promise not the tear up this computer, you may use it.”
 - 5) “If you will show the visitors how to use the keyboard now, we will go outdoors and make a fire later.”
 - 6) “If you will promise to take care of the dog, I will let it play with you.”
 - 7) “If you will translate what Matata is saying, I will take you for a car ride.”
 - 8) “If you leave a written note in the sand, X will read it on another day and leave here what you request.”

- 9) "If you are good and help me while the visitors are here they will bring you a surprise."
 - 10) "If you are quiet, no one will know we are here and we can listen to what they are saying."
- f. A conscious awareness that humans are expected to uphold their end of contractual agreements and promises which they make to apes as well as to one another.
 - g. A conscious awareness of the importance humans attach to being able to tie knots and to link things together through this method.
 - h. A conscious awareness of the need to keep blankets and other nest-building materials laundered and folded and an awareness of the need to utilize clean blankets on the top side of the nest.
 - i. A conscious awareness of the importance humans place on the apes' capacity to make stone tools, bone tools, and stick tools.
 - 1) A conscious awareness of the requirements of the various properties of these different classes of tools (i.e. stick tools can be fashioned with hands and teeth, stone tools must be fashioned with other stone, bones can be split lengthwise in a manner that stone and wood cannot, etc.).
 - 2) A conscious awareness of the uses to which tools of different shapes can be addressed.
 - j. A conscious awareness of the need for child-care. This includes a great sensitivity to the needs of infants, both those belonging to self and those

belonging to others. It includes a conscious monitoring of what the infant can and cannot do, as well as what an infant can and cannot understand. It demands a conscious understanding of the kinds of things that must be done to ensure an infant's safety. This includes an understanding that the needs of human infants and bonobos differ considerably. (This skill was not highly developed in Matata; however Panbanisha's monitoring of infants and their requirements was essentially at the human level). This care and caution is not only exhibited when the infant is in clear and present danger (as is the case with most animal.). The care and caution is exerted long before the infant becomes endangered.

- k. A conscious awareness of the need to keep the living facility clean according to human standards and to remove what humans designate as trash. Also a conscious awareness of what USDA inspectors search as demonstrated by helping to prepare for inspections (by hiding items they might asked to be removed from the enclosures, etc.).
- l. A conscious awareness of the importance of sharing food among group members in an appropriate manner according to bonobo food rules as taught by Matata who was wild-reared.
- m. A conscious awareness that most human beings neither understand, nor respect their capacity to employ symbols creatively and in contextually appropriate novel manners. They attempt to meet such persons more than halfway, because they are keenly aware and understand that humans fail to grasp that any kind of symbolic system except their own could be

symbolic or complex. Bonobos will go to great lengths to teach human words, preferring to do so only in contextually appropriate meaningful communicative contexts; because humans cannot grasp symbol meanings devoid of context.

- n. A conscious awareness that many humans fail to grasp that they understand spoken words and sentences at a high level. They will take great care to try and demonstrate this to humans in novel socially appropriate contexts. They have learned that responding in “test” situations, when humans repeat trials over and over, does little to convey their actual abilities and desire to avoid these settings. Some apes completely refuse them.
- o. A conscious awareness of numerosity, which gives them a grasp of numbers to twelve or more without actually counting. This can become accompanied by an awareness of the human desire for counting, and some apes have demonstrated behaviors that are true counting and reading.
- p. A conscious awareness of, and interest in, similar to that of human children, pretend play. This can be accompanied by a fascination with that play. This can take the form of object play, as when figures (toys representing apes) are engaged in actions of pretend attack. It can also take the form of pretending to do things to others such as pretending to be afraid, pretending to be angry, pretending to be asleep, pretending to hide, pretending to be another entity (as in wearing a mask), or pretending not to hear or see something obvious. This fascination can extend to pretending

to do things to other chimpanzee and/or bonobos to determine if they understand the pretense; for example whether other bonobos or chimpanzees understand that a plastic snake is not real, or that a person in a gorilla suit is not a gorilla.

- q. A conscious awareness of the power of deceit. This includes knowledge of “good” and “bad” and the capacity to label one’s own actions as belonging to one or the other of these categories.
- r. A conscious awareness of their ability to plan and co-ordinate group actions. This can be as simple as making a plan to make a fire and being sure that the needed items are packed, or as complex as making a plan to attack human beings who are perceived as deceitful or devious. Such plans are exchanged vocally and coordinated across space and time.
- s. A conscious awareness of the need to attempt to form connections with human beings on levels that human beings can understand. As experience with a variety of humans began to take place, the apes recognized that they needed to stretch their communicative competencies to try and enable human beings to understand their communications, their rules, and their view of what moral treatment entailed.

20. Bonobos and chimpanzees have a clear understanding of their strength relative to that of humans (much greater) and their speed and agility (far greater). They demonstrate that they understand the need to treat humans with care, whether the interactions be grooming, play, tree climbing, etc. They slow down their pace, they exert exact control over their bodies and their teeth, with exceeding care and precision.

21. Bonobos and chimpanzees who have acquired language recognize the need to inform others of important information. They understand the circumstances that cause others to lack information they themselves have (often termed “Theory of Mind”). For example, they inform others of things that have led to danger, such as potential fires, wild dog packs nearby, branches on trees that are unstable, foods that are poisonous, location of hidden objects, causes of death of other group members, mistreatment of group members, deceit on the part of others, etc.

22. Bonobos and chimpanzees understand that they must remain in certain areas and that they must not harm or scare human beings who are visitors or who do not know them. Frequently, when doors are left open they refuse to go into areas where they are not allowed. If humans whom they do not know inadvertently enter their areas, they avoid those human beings, in recognition that interaction with them is prohibited by rules of the facility, unless they feel threatened.

23. Having acquired language, if bonobos or chimpanzees harmed human beings, it was inevitably the case that they perceived those human beings as either having broken rules of conduct, having said something insulting (often out of another’s persons earshot) or having threatened them or persons they trust.

24. Having acquired language, bonobos and chimpanzees become increasingly trustworthy and responsible as they pass out of adolescence and into adulthood. They assume roles of group monitoring and teaching of children.

25. Having acquired language, bonobos and chimpanzees presume that humans will explain their intentions and that they are to do likewise. Every interaction becomes a

linguistically negotiated contract. These contracts can be applied to time periods that are days, weeks and even years ahead and will be remembered and enacted at the appropriate time.

26. Whenever there exists a disagreement between a human and a chimpanzee or bonobo who has acquired language, the disagreement can be solved by explaining the reasons for the action. For example, if a bonobo does not wish a person to leave and stands in front of the door, repeatedly insisting they remain in the cage; this behavior can be negotiated by an explanation of the reason for leaving - such as dentist appointment, etc.

27. Bonobo and chimpanzees keep promises and secrets. In the wild, adult males use this capacity to stealthily approach other groups for purposes of surprise attack. In captivity, having acquired a human language, they remind others of events such as birthdays, days visitors are expected, etc. They remind caretakers of trash that has not been carried out, drains that are clogged, computer programs that are mis-performing, etc. If Panbanisha requested foods that she was not allowed to have while on a diet, she would indicate to her caretakers to keep it a "secret." Other "secrets" were certain kinds of knowledge, shared with only the most trusted, such as if an important object had been hidden for emergency use.

28. When apes are taken out of doors on leads they are asked to promise to be good, not to harm anyone and to return when asked. If they promise these things they keep their promise. Should they decide they are not going to keep such a promise, reminding them of the promise, the need for and the reason for it, has always been sufficient to reinstate the promise. If they are not capable of understanding language at that level, they do not make and/or keep promises except for the immediate future (five minutes), and cannot be taken outdoors on leads. But language extends the time of promise keeping to years, thus serving as an extremely power

mechanism for the development of very complex group networks of social obligations, responsibilities and duties.

29. Ape children acquire the moral sense and duties of both cultures and the languages of both cultures. Self-aware beings cognizant of their own identity, they come to desire to engage in mutually responsible moral actions. They come to display a sense of loyalty, duty, honor, and mutual respect which takes cognizance of the individuality and free-will of other self-aware beings. However, they extend this to human beings only as long as they are, in turn, treated similarly.

30. Adult chimpanzees and bonobos, when reared in the proper manner, also become capable of duties and responsibilities that are “self-assigned.” They also acquire an understanding of how to behave in a manner that they begin to perceive as culturally appropriate for humans. As this occurred, they began to demonstrate a sense of responsibility to help the human members of their *Pan/Homo* world attempt to show visitors how to begin to cross the species boundary. Additionally some *Pan* members, as they entered their decade of life, began to study this problem themselves and reflect upon it. This surprising event occurred when the *Pan/Homo* group found themselves relocated to a new facility where they had to cope with large numbers of people who viewed the *Pan* members as basically nonsentient, nonknowing, nonself-reflective beings.

31. In response to the highly distressing event of relocation to facility where they were all were treated very differently than had been the case at the Language Research Center where they were reared, Kanzi, Panbanisha and Nyota each began to try to find their own ways to help shoulder the new responsibilities imposed upon this *Pan/Homo* group. They started to assist those that the outsiders viewed as their “experimenters.” Panbanisha began to repeatedly

watch and comment on documentaries about human/ape differences. The earliest that caught her attention was “Harry and the Hendersons,” which she watched over and over as child. As an adult, she studied the specials on PBS and the Discovery Channel. She also began to translate Kanzi’s vocal utterances onto the keyboard. Elykia began to understand some English and started to offer running translations of what humans were saying for her mother Matata, and her brother Maisha, knowing that they could not understand human language. Kanzi began to pose for photographers, doing precisely as they asked, so the photographers did not have to watch and “wait” for their shot. He began to carry out scenes for videographers precisely as they asked. Kanzi also taught Elykia (his mother Matata's fourth daughter) how to smile for the camera, and for visitors. Panbanisha began teaching Matata how to use the symbol board filled with lexigrams, which she had acquired spontaneously as an infant, even before she began to speak “bonobo.”

32. Maturation in the Pan/Homo world began to reflect back upon the wild caught bonobo matriarch of the group Matata. She had *refused* for decades to view the keyboard as a linguistic device. Once her children, Kanzi and Panbanisha, grew up and were regularly employing it to communicate with humans, each other, and their offspring, Matata started to show a greater interest in the potential of this device. Also at this point, her children began to be able to vocally translate lexigrams into bonobo speech for her. As she began to grasp the true function of the keyboard, she started to study it for hours at a time; but always hid it, if caught doing so. She continued to act as though she did not know lexigrams, but when the situation was urgent or critical, she could produce fully complete appropriate sentences; for example, one day when she became ill, she requested, “Give green medicine.”

33. It was in the conscious awareness of the bonobos and chimpanzees of the implicit agendas and external goals of their *Pan/Homo* group that one could most clearly discern the emergence of their capacity to assume duties and responsibilities in a human-like manner. They understood not only what they were doing, but why they were doing it. As is the case with humans, their understanding increased with age and experience. Similarly their recognition of the degree to which persons who were outside their immediate *Pan/Homo* family *misunderstood* them increased. They became highly creative in trying to reach across the divide to even the most incredulous human beings. They slowed down their actions and sounds, they exaggerated them, they repeated them, they blended sounds, gestures and lexigrams and they waited till they noted that the humans were observing or their cameras were turned off before they engaged them. While these were skills that the human members of the group could model, they could never have been taught. Close observation of the behavior of others, while reflecting on the intent of others, requires the knowledge that the “other” has a mind, that the contents of two minds are not always the same, and that one must pay attention to the “attention” of the other if one wishes to successfully redirect their perspectives, ideas, views, etc.

34. Both species in a *Pan/Homo* world become intensely aware of their differences and their similarities and engage in real and mutual trust and cooperation. Both species understand the magnitude of this event and that it requires far more than simple friendship. All sentient self-knowing entities, such as chimpanzees and bonobos, endowed with a sense of “I am” manifest the self-understanding, self-knowledge and self-choice that enable them to recognize, respect and acknowledge *the existence of a similar capacity* in the other species. In this regard it is noteworthy, that while both apes and humans can love, rear, care for and interact with canids, adults of both species recognize that canids are incapable of the kind of self-

knowledge that adult humans and adults apes possess. Therefore, neither species holds dogs responsible for "intentional actions" in the same way that hold other adult humans and/or apes responsible for such actions. Apes did however, display far less patience with misbehavior on the part of dogs than the human members of their *Pan/Homo* culture. In part this was because when dogs attached themselves and their allegiance to particular apes and not others, this proved unsettling to the group.

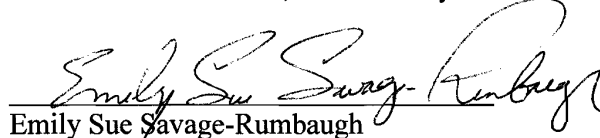
Wild Chimpanzees and Bonobos

35. In essence the species-boundary that normally separates *Pan* and *Homo* can become extremely permeable, allowing cultural process to become cleanly separated from that which we normally think of as "species-specific" behaviors. Any human-like behaviors that appeared in this work demonstrate these capacities of apes and are likely to exist in wild apes, albeit in a different cultural form and possibly not yet understood.

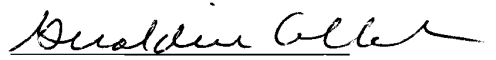
36. Wild bonobos and chimpanzees demonstrate the ability to harvest a constantly changing forest. Their mental mapping is extremely fluid, rapid and highly accurate. Chimpanzees and bonobos obtain food without weapons and hunting is more of luxury than common event. Meat is the only food reportedly shared by chimpanzees, who inhabit sparser environments and who are thus moving farther toward the lifestyles of human beings. Bonobos share all foods in their diet. For bonobos to harvest their territories without the swidden agricultural practices- employed by human beings living in the same areas requires considerable planning, group communication, group co-ordination and cooperation. Everyone must fulfill his or her responsibilities for it to succeed. The group must agree to travel together long distances each day - without food - in order to arrive a particular food resource together. The resource the group agrees to harvest one day will determine the options for travel that it will encounter the following day. Incorrect choices will lead to hunger for the entire group as the forest is a

plentiful larder, but only if it is well known, well predicted and the entire group, infants, juveniles, pregnant females and the elderly are able to travel, as a group, the long distances required for harvesting. The planning required to make those critical decisions must be agreed to by the entire group and communicated, for the groups split up during travel, but arrive together a common feeding resource. The mapping problem for traveling through a forest that is ripening in a very complex and somewhat variable manner is similar to the traveling salesman problem. This not only requires advance planning but constantly updated information as well in order maximize options for scheduling, sequencing, resource allocation and time investment planning.

37. Advance planning and sharing of information is a duty and responsibility that lies at the heart of bonobo and chimpanzee survival in the wild. No bonobo or chimpanzee group could survive if its members failed to carry out these assigned duties and responsibilities to the group. They would cease to locate sufficient food, their youngsters would become easy prey, or they would have to try to make it on their own, which would be dangerous. Chimpanzees and bonobos place great emphasis on activities that are devoted to monitoring one another and to the deep insults, threats, fears and angers that are generated when the actions of any group member threaten the unity and cohesion of the group. Chimpanzees and bonobos take immediate insult and vociferous exception to all such actions. They monitor themselves and their rivals and react to any disturbances in what they perceived as a change in the group balance of power, distribution of resources, or inappropriate behaviors and/or alliances, even friendly alliances.


Emily Sue Savage-Rumbaugh

Sworn to before me
this 15 day of December, 2015


Geraldine Callahan
Attorney at Law of the State of New Jersey 23

Notary Public

STATE OF _____)
) ss:
 COUNTY OF _____)

On the 15th day of December in the year 2015 before me, the undersigned, a notary public in and for said state, personally appeared Emily Sue Savage-Rumbaugh personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her capacity, and that by his/her signature on the instrument, the individual, or the person upon behalf of which the individual(s) acted, executed the instrument, and that such individual made such appearance before me the undersigned in the County of Middlesex and the State of New Jersey.

Geraldine Callahan
 Notary Public Geraldine Callahan
 Attorney at Law of the State of
 My Commission Expires: _____ New Jersey

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF NEW YORK

In the Matter of a Proceeding under Article 70 of the
CPLR for a Writ of Habeas Corpus,

THE NONHUMAN RIGHTS PROJECT, INC., on behalf
of TOMMY,

**CERTIFICATE OF
CONFORMITY**

Petitioner,

-against-

PATRICK C. LAVERY, individually and as an officer of
Circle L Trailer Sales, Inc., DIANE LAVERY, and
CIRCLE L TRAILER SALES, INC.,

Index No.

Respondents.

STATE OF New Jersey)
COUNTY OF Middlesex) ss:

1. This Certificate of Conformity is submitted pursuant to New York CPLR 2309(c)
and New York Real Property Law § 299-a.

2. I am an attorney duly licensed to practice law in New Jersey

3. I certify that the Affidavit of Emily Sue Savage-Rumbaugh, signed and dated on
December 1, 2015 was taken in the manner prescribed by the laws of New Jersey

Dated: December 1, 2015

Donald Allen

Exhibit A to Savage-Rumbaugh Supplemental Affidavit -

References

[pp. 653 - 666]

REFERENCES

Visual examples of these capacities are available from the following audio-visual resources.

- Savage-Rumbaugh, E. S. Documentary film depicting symbol use and testing in the pygmy chimpanzee. National Geographic Special, February 23, 1986.
- Savage-Rumbaugh, E. S. Ape language: From conditioned response to symbol. (1986). Distributed by Psychological Cinema Registrar, Pennsylvania State University. (Edited 2-hour tape).
- Rumbaugh, D. M., Hopkins, W. D., Washburn, D. A., Savage-Rumbaugh, E. S. & Runfeldt, S. (1989). Lana chimpanzee learns to count by "Numath". Psychological Cinema Register, Pennsylvania State University, University Park, PA.
- Greenfield, P. M. & Savage-Rumbaugh. (1990). Ape language work featured in the Psychology Telecourse Language Program. Coastline Community College and KOCE-TV (Prod.), Huntington Beach, California.
- Savage-Rumbaugh, Murphy, Sevcik, Williams, & Rumbaugh (1994). Family history of Language Research Center Bonobos detailing how each was raised and the resulting differences in language ability. Includes data base and segments of published research filmed by NHK of Japan. Bonobo People
- NHK Special Feature: Kanzi: An Ape of Genius (1994).
- BBC Special Feature: Chimptalk (1994).
- NHK Special Feature: Kanzi II (2000).
- NHK Special Feature: Kanzi III (2002).
- Savage-Rumbaugh video archives - Located in the Rare Book Collection of Cornell. A large segment of the collection is annotated.
- General discussions of the abilities of apes that lead to duties and responsibilities take place in the following books:**
- Savage-Rumbaugh, E. S. (1986). Ape Language: From Conditioned Response to Symbol. New York: Columbia University Press.
- Savage-Rumbaugh, E. S. (1993). Kanzi: A Most Improbable Ape. NHK Publishing Co: Tokyo, JAPAN.
- Savage-Rumbaugh, S., & Lewin, R. (1994). Kanzi: The Ape at the Brink of the Human Mind.

New York: John Wiley Publishers. (Translated in German and Japanese)

Savage-Rumbaugh, S., & Lewin, R. (1995). Kanzi: der sprechende Schimpanse: Was den tierischen vom menschlichen Verstand unterscheidet. [Kanzi: The Ape at the Brink of the Human Mind]. Munchen: Droemer Knauer.

Savage-Rumbaugh, E. S., Shanker, S., & Taylor, T. J. (1998). Apes, Language and the Human Mind. New York, NY: Oxford University Press.

Benson, J., Greaves, W., Savage-Rumbaugh, S., Taglialatela, J., & Thibault, P. (2005) "The thin end of the wedge: grammar and discourse in the evolution of language." In J. D. Benson & W. S. Greaves (Eds.) Functional Dimensions of Ape-Human Discourse, Equinox Press.

Segerdahl, P., Fields, W.M., & Savage-Rumbaugh, E.S. (2005) *Kanzi's Primal Language: The cultural initiation of apes into language*. London: Palgrave/Macmillan.

References

Altenmüller, E., Schmidt, S. & Zimmermann, E. (2013). *Evolution of Emotional Communication: From Sounds in Nonhuman Mammals to Speech and Music in Man*. Oxford: Oxford University Press. Astington, J., Harris, P., & Olson, D. (Eds.). (1988). *Developing Theories of Mind*. Cambridge: Cambridge University Press. □ Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood

Boesch, Christophe, (2012). *Wild Cultures: A Comparison between Chimpanzee and Human Cultures*. Cambridge University Press.

Bradshaw, G.A., Capaldo, T., Lindner, L., & Grow, G. (2009). Developmental Context Effects on Bi- Cultural Post-Trauma Self Repair in Chimpanzees. *Developmental Psychology*, 45 (5):1376-1388. Bruner, J.S., Oliver, R.R., & Greenfield, P.M. (1967). *Studies in Cognitive Growth*. New York: Wiley.

Brakke, K. E., & Savage-Rumbaugh, E. S. (1995). The development of language skills in bonobos and chimpanzees: I. Comprehension. *Language and Communication*, 15,(2), 121-148.

Brakke, K. E. & Savage-Rumbaugh, E. S. (1996). The development of language skills in Pan: II. Production. *Language and Communication*, 16(4), 361-380.

Byrne, R.W. (1998). The Early Evolution of Creative Thinking: Evidence from Monkeys and Apes. In S. Mithen (Ed.), *Creativity in Human Evolution and Prehistory* (pp. 110-124). London: Routledge.

Burrows, A.M., Waller, B.M., Parr, L.A., & Bonar, C.J. (2006). Muscles of Facial Expression in

the Chimpanzee (*Pan troglodytes*): Descriptive, Comparative and Phylogenetic Contexts. *J. Anat.*, 208:153-167.

Chiarelli, B. 1986. Vocalization in Non Human Primates and Descent of Human Language. In *Problemi Attuali di Scienza e di Cultura* (pp. 217-225), Quaderno 259, Proc. Intern. Meeting on Variability and Behavioral Evolution (23-26 November 1983). University of Rome 'La Sapienza' and Accad. Nazion. Lincei. Rome, Italy

Corballis, M.C. (2002). *From Hand to Mouth. The Origins of Language*. Princeton: Princeton University Press.

Crockford, C., & Boesch, C. (2005). Call Combinations in Wild Chimpanzees. *Behaviour*, 142: 397– 421.

Crockford, C., Herbinger, I., Vigilant, L., & Boesch, C. (2004). Wild Chimpanzees Produce Group-Specific Calls: A Case for Vocal Learning? *Ethology*, 110: 221-243.

Fields, W.M., Segerdahl, P., & Savage-Rumbaugh, E.S. (2007) "The Material Practices of Ape Language." In J. Valsiner (Ed.) *The Cambridge Handbook of SocioCultural Psychology*.

Kano, T. (1992). *The Last Ape: Pygmy Chimpanzee: Behavior and Ecology*. Stanford, CA: Stanford University.

□Kendon, A. (1988). How Gestures Can Become Like Words. In F. Poyatos (Ed.), *Cross-Cultural Perspectives in Nonverbal Communication* (pp.131-141). Toronto,

Goodall, J. (1986). *The Chimpanzees of Gombe: Patterns of Behavior* Cambridge University Press, Cambridge.

Goodman, M., Grossman, L.I., & Wildman, D.E. (2005). Moving Primate Genomics Beyond the Chimpanzee Genome. *TIG*, 9 :511-517. □Herbinger, I., Papworth, S., Boesch, C., & Zuberbühler K. (2009). Vocal, Gestural, and Locomotor

Greenfield, P. M. & Savage-Rumbaugh, E. S. (1984). Perceived variability and symbol use: A common language-cognition interface in children and chimpanzees. *Journal of Comparative Psychology*, 98, 201-218.

Greenfield, P. M., & Savage-Rumbaugh, E. S. (1990). Grammatical combination in *Pan paniscus*: Processes of learning and invention in the evolution and development of language. In S. Parker & K. Gibson (Eds.), *Comparative developmental psychology of language and intelligence in primates* (pp. 540-578). New York, Cambridge University Press.

Greenfield, P. M., & Savage-Rumbaugh, E. S. (1991). Imitation, grammatical development, and the invention of protogrammar by an ape. In N. Krasnegor, D. M. Rumbaugh, M. Studdert-Kennedy, & R. L. Schiefelbusch, (Eds.), *Biological and Behavioral Determinants of Language Development* (pp. 235-258). Hillsdale, NJ: Lawrence Erlbaum.

Greenfield, P. M., & Savage-Rumbaugh, S. (1992). Comparing the ontogeny of symbol use in

Pan paniscus and *Homo sapiens*. Bulletin of the Chicago Academy of Sciences, 15(1), 26. (Abstract).

Greenfield, P. M., & Savage-Rumbaugh, E. S. (1993). Comparing communicative competence in child and chimp: The pragmatics of repetition. Journal of Child Language, 20, 1-26.

Hopkins, W. D., & Savage-Rumbaugh, E. S. (1991). Vocal communication as a function of differential rearing experiences in *Pan paniscus*: A preliminary report. International Journal of Primatology, 12(6), 559-583.

Hopkins, W. D., Morris, R. D., & Savage-Rumbaugh, E. S. (1991). Evidence for asymmetrical hemispheric priming using known and unknown warning stimuli in two language-trained chimpanzees (*Pan troglodytes*). Journal of Experimental Psychology: General, 120(1), 46-56.

Hochberg, Z. (2011). Developmental Plasticity in Child Growth and Maturation. *Front Endocrinol*.

Hogrefe & Huber. □ Kendon, A. (1991). Some Considerations for a Theory of Language Origins. *Man* (N.S.), 26:199-221.

Kingdon, J. (1993). *Self-Made Man: Evolution from Eden*. New York: Wiley. □ Knight, C. (1996). Darwinism and Collective Representations. In J. Steele and S. Shennan (Eds.), *The Archaeology of Human Ancestry* (pp. 331-346). London: Routledge. □

Kurjak, A., Stanojevic, M., Andonotopo, W., Salihagic-Kadic, A., Carrera, J.M., & Azumendi, G. (2004). Behavioral Pattern Continuity from Prenatal to Postnatal Life: A Study by Four-Dimensional (4D) Ultrasonography. *J. Perinat. Med.*, 32:346-353. □ Lazarus, R.S. (1963). *Personality and Adjustment*. Englewood Cliffs, NJ: Prentice-Hall.

Lemmon, W. B., Temerlin, J. W., & Savage, E. S. (1975). The development of human-oriented courtship behavior in a human-reared chimpanzee (*Pan troglodytes*). In S. Kondo, M. Kawai, & A. Ehara (Eds.), Proceedings of the Fifth International Congress of Primatology, Contemporary Primatology (pp. 292-294), Karger: Basel.

Lock, A.J. (1981). Universals in Human Conception. In P.L.F. Heelas and A.J. Lock (Eds.), *Indigenous Psychologies* (pp. 19-36). New York: Academic Press. □

Lyn, H., Savage-Rumbaugh, E. S., & Rumbaugh, D. (1998). Observational word learning in bonobos (*Pan paniscus*). American Journal of Primatology, 45(2), 193. (Abstract).

Menzel, E., Savage-Rumbaugh, E. S., & Lawson, J. (1985). Chimpanzee (*Pan troglodytes*) spatial problem solving with the use of mirrors and televised equivalents of mirrors. Journal of Comparative Psychology, 99(2), 211-217.

Marchant, L., & Nishida, T. (1996). *Great Ape Societies*. Cambridge: Cambridge University Press. □

Mithen, S. (1998). A Creative Explosion? Theory of Mind, Language, and the Disembodied Mind of the Upper Palaeolithic. In S. Mithen (Ed.), *Creativity in Human Evolution and Prehistory* (pp. 165-191). London: Routledge. □ Morecraft

Ragir, S. and Savage-Rumbaugh, E. S. (2009) Playing with meaning: normative function and structure in play. In R. Botha and C. Knight, *The Prehistory of Language: Studies in the Evolution of Language*. Oxford University Press. (pp. 122-141).

Roffman, I. (2008). *Are Bicultural Bonobos Able to Recognize Iconic Representations and Produce Referential Signs in Human Cultural Terms?* [Masters thesis]. Ames, Iowa: Iowa State University.

Roffman, I., & Nevo, E. (2010). Can Chimpanzee Biology Highlight Human Origin and Evolution? *Rambam Maimonides Med. J.*, 1:1. doi:10.5041/RMMJ.10009

Roffman, I., Savage-Rumbaugh, S., Rubert-Pugh, E., Ronen, A., & Nevo, E. (2012). Stone Tool Production and Utilization by Bonobo-Chimpanzees (*Pan paniscus*) *Proc. Natl. Acad. Sci.*, 109 (36): 14500-14503.

Roffman, I., Savage-Rumbaugh, S., Rubert-Pugh, E., Stadler, A., Ronen, A., & Nevo, E. (2015). Preparation and Use of Varied Natural Tools for Extractive Foraging by Bonobos (*Pan paniscus*). *American Journal of Physical Anthropology*, In press.

Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1980). A response to Herbert Terrace's article "Linguistic apes: What are they saying?" New York University Education Quarterly, Winter, p.33.

Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1983). Apes and language research. In H. B. Miller & W. H. Williams (Eds.), Ethics and animals. (pp. 207-217) Clifton, NJ: Humana Press.

Rumbaugh, D. M., Savage-Rumbaugh, E. S., & Scanlon, J. L. (1982). The relationship between language in apes and human beings. In J. L. Fobes, & J. E. King (Eds.), Primate Behavior. (pp. 361-385) New York: Academic Press.

Rumbaugh, D. M., Washburn, D., & Savage-Rumbaugh, E. S. (1989). On the care of captive chimpanzees: Methods of animal enrichment. In E. Segal (Ed.), Housing, Care, and Psychological Well-being of Captive and Laboratory Primates (pp. 357-375). Hillsdale, NJ: Lawrence Erlbaum.

Rumbaugh, D. M., Hopkins, W. D., Washburn, D. A., Savage-Rumbaugh, E. S. (1989). Lana chimpanzee learns to count by "Numath": A summary of a videotaped experimental report. The Psychological Record, 39, 459-470.

Rumbaugh, D. M., Washburn, D. A., Savage-Rumbaugh, E. S. & Hopkins, W. D. (1990). The Language Research Center's Computerized Test System (LRC-CTS): Video-formatted tasks for

primates. (Abstract) Proceedings and Abstracts of the Annual Meeting of the Eastern Psychological Association, 61.

Rumbaugh, D. M. & Savage-Rumbaugh, E. S. (1990). Chimpanzees: Competencies for language and numbers. In W. C. Stebbins & M. A. Berkley (Eds.), Comparative perception-Volume II: Complex signals (pp. 409-441.) John Wiley & Sons.

Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1992). Cognitive competencies: Products of genes, experience, and technology. In T. Nishida, W. C. McGrew, P. Marler, M. Pickford, & Frans B. M. de Waal (Eds.), Topics in primatology, Vol. 1, Human origins (pp. 293-304). Tokyo, Japan: University of Tokyo Press.

Rumbaugh, D. M., & Savage-Rumbaugh, E. S. (1986). Reasoning and language in chimpanzees. In R. J. Hoage & L. Goldman (Eds.), Animal intelligence: Insights into the animal mind (pp. 57-75). Washington, DC: Smithsonian Institution Press.

Rumbaugh, D. M., Savage-Rumbaugh, E. S., & Hegel, M. (1987). Summation in the chimpanzee (Pan troglodytes). Journal of Experimental Psychology: Animal Behavior Processes, 13, 107-115.

Rumbaugh, D. M., Hopkins, W. D., Washburn, D. A. & Savage-Rumbaugh, E. S. (1993). Chimpanzee competence for counting in a video-formatted task situation. In H. Roitblat, L. M. Herman, & P. E. Nachtigall (Eds.), Language and communication: Comparative perspectives (pp. 329-346). Hillsdale, NJ: Lawrence Erlbaum.

Rumbaugh, D. M., Washburn, D. A., Savage-Rumbaugh, E. S., Hopkins, W. D., & Richardson, W. K. (1991). Language Research Center's Computerized Test System (LRC-CTS): Video-formatted tasks for comparative primate research. Primate Today, 325-328. Elsevier Science Publishers.

Russon, A.E., & Andrews, K. (2011). Pantomime in Great Apes: Evidence and Implications. Communicative & Integrative Biology, 4(3) 315-317.

Savage, E. S., Temerlin, J. W., & Lemmon, W. B. (1973). Group formation among captive mother-infant chimpanzees (Pan troglodytes). Folia Primatologica, 20, 453-473.

Savage, E. S., Temerlin, J. W., & Lemmon, W. B. (1975). The appearance of mothering behavior toward a kitten by a human-reared chimpanzee. In S. Kondo, M. Kawai, & A. Ehara (Eds.), Proceedings of the Fifth International Congress of Primatology, Contemporary Primatology (pp. 287-291). Karger: Basel.

Savage, S. (1976). Pygmy chimpanzees: Update. Yerkes Newsletter, 13, 25-26.

Savage, E. S., & Malick, C. (1977). Play and socio-sexual behaviour in a captive chimpanzee (Pan troglodytes) group. Behaviour, 60, 179-194.

Savage, E. S., & Rumbaugh, D. M. (1977). Communication, language, and Lana: A perspective.

In D. M. Rumbaugh (Ed.), Language learning by a chimpanzee: The LANA project (pp. 287-309). New York: Academic Press.

Savage-Rumbaugh, E. S., Wilkerson, B. J., & Bakeman, R. (1977). Spontaneous gestural communication among conspecifics in the pygmy chimpanzee (*Pan paniscus*). In G. H. Bourne (Ed.), Progress in ape research (pp. 97-116). New York: Academic Press.

Savage, E. S., & Bakeman, R. (1978). Sexual morphology and behavior in *Pan paniscus*. Proceedings of the Sixth International Congress of Primatology (pp. 613-616). New York: Academic Press.

Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1978). Symbolization, language and chimpanzees: A theoretical reevaluation based on initial language acquisition processes in four young *Pan troglodytes*. Brain and Language, 6, 265-300.

Savage-Rumbaugh, E. S., & Wilkerson, B. J. (1978). Socio-sexual behavior in *Pan paniscus* and *Pan troglodytes*: A comparative study. Journal of Human Evolution, 7, 327-344.

Savage-Rumbaugh, E. S., Rumbaugh, D. M., & Boysen, S. (1978). Symbolic communication between two chimpanzees (*Pan troglodytes*). Science, 201, 641-644.

Savage-Rumbaugh, E. S., Rumbaugh, D. M., & Boysen, S. (1978). Linguistically mediated tool use and exchange by chimpanzees (*Pan troglodytes*). Behavioral and Brain Sciences, 4, 539-554.

Savage-Rumbaugh, E. S., Rumbaugh, D. M., & Boysen, S. (1978). Sarah's problems of comprehension. Behavioral and Brain Sciences, 4, 555-557.

Savage-Rumbaugh, E. S., Rumbaugh, D. M., & Boysen, S. (1978). Describing chimpanzee communication: A communication problem. Behavioral and Brain Sciences, 4, 614-616.

Savage-Rumbaugh, E. S. (1979). Symbolic communication - its origins and early development in the chimpanzee. New Directions for Child Development, 3, 1-15.

Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1979). Chimpanzee problem comprehension: Insufficient evidence. Science, 206, 1201-1202.

Savage-Rumbaugh, E. S., Rumbaugh, D. M., & Boysen, S. (1979). Chimpanzees and protolanguage. The Behavioral and Brain Sciences, 2, 396-397.

Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1979). Initial acquisition of symbolic skills via the Yerkes computerized language analog system. In R. L. Schiefelbusch & J. R. Hollis (Eds.), Language intervention from ape to child (pp. 277-294). Baltimore: University Park Press.

Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1980). Language analogue project, phase II: Theory and tactics. In K. E. Nelson (Ed.), Children's language (Vol. II, pp. 267-307). New York: Gardner Press.

Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1980). Requisites of Symbolic Communication--or are words for birds? The Psychological Record, 30, 305-315.

Savage-Rumbaugh, E. S., Scanlon, J., & Rumbaugh, D. M. (1980). Communicative intentionality in the chimpanzee. The Behavioral and Brain Sciences, 3, 620-623.

Savage-Rumbaugh, E. S., Rumbaugh, D. M., Smith, S. T., & Lawson, J. (1980). Reference: The linguistic essential. Science, 210, 922-925.

Savage-Rumbaugh, E. S. (1981). Can apes use symbols to represent their world? In T. A. Sebeok & R. Rosenthal (Eds.), The clever Hans phenomenon: Communication with horses, whales, apes, and people, Vol. 364, (pp. 35-59). New York Academy of Sciences.

Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1982). Ape language research is alive and well: A reply. Anthropos, 77, 568-573.

Savage-Rumbaugh, E. S. (1982). A pragmatic approach to chimpanzee language studies. In H. E. Fitzgerald, J. A. Mullins, & P. Gage (Eds.), Child nurturance, Vol. 3 (pp. 137-157). New York: Plenum.

Savage-Rumbaugh, E. S., Pate, J. L., Lawson, J., Smith, S. T., & Rosenbaum, S. (1983). Can a chimpanzee make a statement? Journal of Experimental Psychology: General, 112, 457-492.

Savage-Rumbaugh, E. S., Ronski, M. A., Sevcik, R., & Pate, J. L. (1983). Assessing symbol usage versus symbol competency. Journal of Experimental Psychology: General, 112, 508-512.

Savage-Rumbaugh, E. S. (1984). Review of: Primate Communication, Charles T. Snowdon, Charles H. Brown, Michael R. Petersen (Eds.), Cambridge University Press (1982). American Scientist, 72, 286-288.

Savage-Rumbaugh, E. S. (1984). Verbal behavior at a procedural level in the chimpanzee. Journal of the Experimental Analysis of Behavior, 41(2), 223-250.

Savage-Rumbaugh, E. S. (1984). Acquisition of functional symbol usage in apes and children. In H. L. Roitblat, T. G. Bever, & H. S. Terrace (Eds.), Animal cognition (pp. 291-310). Hillsdale, NJ: Lawrence Erlbaum Associates.

Savage-Rumbaugh, E. S., & Sevcik, R. (1984). Levels of communicative competency in the chimpanzee: Pre-representational and representational. In G. Greenberg & E. Tobach (Eds.), Behavioral evolution and integrative levels (pp. 197-219). Hillsdale, NJ: Lawrence Erlbaum Associates.

Savage-Rumbaugh, E. S. (1984). Pan paniscus and Pan troglodytes: Contrasts in preverbal communicative competence. In R. L. Susman (Ed.), The pygmy chimpanzee (pp. 395-413). New York: Plenum.

Savage-Rumbaugh, E. S., Sevcik, R. A., Rumbaugh, D. M. & E. Rubert. (1985). The capacity of animals to acquire language: Do species differences have anything to say to us? Philosophical Transactions of the Royal Society, B308, 177-185.

Savage-Rumbaugh, E. S., Rumbaugh, D. M., & McDonald, K. (1985). Language learning in two species of apes. Neuroscience and Biobehavioral Reviews, 9, 653-665.

Savage-Rumbaugh, E. S., McDonald, K., Sevcik, R. A., Hopkins, W. D., & Rubert, E. (1986). Spontaneous symbol acquisition and communicative use by pygmy chimpanzees (*Pan paniscus*). Journal of Experimental Psychology: General, 115(3), 211-235.

Savage-Rumbaugh, E. S., & Hopkins, W. D. (1986). Awareness, intentionality, and acquired communicative behaviors: Dimensions of intelligence. In R. J. Schusterman, J. A. Thomas, & F. G. Wood (Eds.), Dolphin cognition and behavior: A comparative approach (pp. 303-313). Hillsdale, NJ: Lawrence Erlbaum Associates.

Savage-Rumbaugh, E. S., & Hopkins, W. D. (1986). The evolution of communicative capacities. In W. Bechtel (Ed.), Science and philosophy: Integrating scientific disciplines (pp. 243-262). Dordrecht, The Netherlands: Martinus Nijhoff.

Savage-Rumbaugh, E. S. (1987). Communication, symbolic communication, and language: A reply to Seidenberg and Petitto. Journal of Experimental Psychology: General, 116, 288-292.

Savage-Rumbaugh, E. S. (1988). A new look at ape language: Comprehension of vocal speech and syntax. In D. Leger (Ed.), Nebraska Symposium on Motivation, 35. Lincoln, NE: University of Nebraska Press.

Savage-Rumbaugh, E. S., Hopkins, W. D., & Sevcik, R. A. (1988). Symbolic cross-modal transfer in two species of chimpanzees (*Pan troglodytes* and *Pan paniscus*). Journal of Child Development, 59, 617-625.

Savage-Rumbaugh, E. S. (1988). [Review of Apes of the world: Their social behavior, communication, mentality, and ecology], American Anthropologist, 90, p. 479.

Savage-Rumbaugh, E. S. and McDonald, K. (1988). Deception and social manipulation in symbol using apes. In R. W. Byrne & A. Whiten (Eds.), Machiavellian Intelligence: Social Expertise and the Evolution of Intellect in Monkeys, Apes, and Humans (pp.224-237). London: Oxford University Press.

Savage-Rumbaugh, E. S. (1989). Mother-infant conflict: Distal or proximate causes: Comments on Plooi & van de Rijt-Plooi's paper. European Journal of Psychology of Education, 4, 193-194. (Invited commentary).

Savage-Rumbaugh, S. (1989) Chimpanzees in the wild. [Review of: East of the Mountains of the Moon], Contemporary Psychology, 34, 666-667.

Savage-Rumbaugh, E. S., Ronski, M. A., Hopkins, W. D., & Sevcik, R. A. (1989). Symbol acquisition and use by Pan troglodytes, Pan paniscus, and Homo sapiens. In P. G. Heltne and L. A. Marquardt (Eds.) Understanding Chimpanzees (pp. 266-295). Cambridge, MA and London, England: Harvard University Press.

Savage-Rumbaugh, E. S. (1990). Language acquisition in a nonhuman species: Implications for the innateness debate. Developmental Psychobiology, 23(7), 1-22.

Savage-Rumbaugh, E. S. (1990). Language as a cause-effect communication system. Philosophical Psychology, 3, 55-76.

Savage-Rumbaugh, E. S., Sevcik, R. A., Brakke, K. E., Rumbaugh, D. M. & Greenfield, P. M. (1990). Symbols: Their communicative use, combination, and comprehension by bonobos (Pan paniscus). In Lewis P. Lipsitt, & Carolyn Rovee-Collier (Eds.), Advances in infancy research, 6 (pp. 221-278). Norwood, NJ: Ablex Publishing Corp.

Savage-Rumbaugh, E. S., & Brakke, K. E. (1990). Animal Language: Methodological and Interpretive Issues. In M. Bekoff and D. Jamieson (Eds.), Interpretation and explanation in the study of behavior: Interpretation, intentionality, and communication, Vol. 1 (pp. 313-343). Boulder, CO: Westview Press.

Savage-Rumbaugh, E. S. (1991). Multi-tasking: the Pan-human rubicon. The Neurosciences, 3, pp. 417-422.

Savage-Rumbaugh, E. S. (1991). Language learning in the bonobo: How and why they learn. In N. Krasnegor, D. M. Rumbaugh, M. Studdert-Kennedy, & R. L. Schiefelbusch (Eds.), Biological and behavioral determinants of language development (pp. 209-233). Hillsdale, NJ: Lawrence Erlbaum.

Savage-Rumbaugh, E. S. (1992). Language training of apes. In S. Jones, R. Martin, & D. Pilbeam (Eds.), The Cambridge encyclopedia of human evolution (pp. 138-141). Hillsdale, NJ: Erlbaum.

Savage-Rumbaugh, E. S. (1992). Language from Pan to man. Bulletin of the Chicago Academy of Sciences 15(1): 23 (Abstract).

Savage-Rumbaugh, E. S., Brakke, K. E., & Hutchins, S. S. (1992). Linguistic development: Contrasts between co-reared *Pan troglodytes* and *Pan paniscus*. In T. Nishida, W. C. McGrew, P. Marler, M. Pickford, & F. B. M. deWaal (Eds.), Topics in primatology: Vol 1, Human origins (pp. 51-66). Tokyo, Japan: University of Tokyo Press.

Savage-Rumbaugh, E. S. & Rubert, E. (1992). Language comprehension in ape and child: Evolutionary implications. In Y. Christen & P. S. Churchland (Eds.), Neurophilosophy and Alzheimer's disease (pp. 30-48). Springer-Verlag, Berlin: Foundation Ipsen Pour la Recherche Scientifique.

Savage-Rumbaugh, E. S. (1993). Language learnability in man, ape, and dolphin. In H. Roitblat, L. M. Herman, & P. E. Nachtigall (Eds.), Language and communication: Comparative perspectives (pp. 457-484). Hillsdale, NJ: Lawrence Erlbaum.

Savage-Rumbaugh, E. S. (1993). How does evolution design a brain capable of learning language?: A Reply. Monographs of the Society for Research in Child Development, Serial No. 233, Vol. 58, 3-4, pgs. 243-252.

Savage-Rumbaugh, E. S., & Rumbaugh, D. M. (1993). The emergence of language. In K. R. Gibson & T. Ingold (Eds.), Tools, language and cognition in human evolution (pp. 86-108). Cambridge University Press.

Savage-Rumbaugh, E. S., Murphy, J., Sevcik, R. A., Rumbaugh, D. M., Brakke, K. E., & Williams, S. (1993). Language comprehension in ape and child. Monographs of the Society for Research in Child Development, Serial No. 233, Vol. 58, Nos. 3-4, pgs. 1-242.

Savage-Rumbaugh, E. S. (1994). Hominid evolution: Looking to modern apes for clues. In D. Quiatt and J. Itani (Eds), Hominid Culture in Primate Perspective (7-49). Niwot, CO: University Press of Colorado.

Savage-Rumbaugh, E. S. & Rumbaugh, D. M. (1996). Primate intelligence and language: Brain and environment [abstract]. XVIth Congress of the International Primatological Society and XIXth Conference of the American Society of Primatologists, No. 740.

Savage-Rumbaugh, E. S., Shanker, S., Taylor, T. J. (1996). Apes with language. Critical Quarterly, 38(3), 45-57.

Savage-Rumbaugh, E. S., Williams, S. L., Furuichi, T., Kano, T. (1996). Language perceived: Paniscus branches out. In W. C. McGrew, L. F. Marchant & T. Nishida (Eds), Great Ape Societies (pp. 173-184). New York, NY: Cambridge University Press.

Savage-Rumbaugh, S. (1997). P-Suke has become a father. Monkey, 41-4, No. 276, 14-17. Inuyama, Aichi, Japan: Japan Monkey Centre (Japanese).

Savage-Rumbaugh, S. (1997). Why are we afraid of apes with language? In A. B. Scheibel & J. W. Schopf (Eds.) The Origin and Evolution of Intelligence (pp. 43-69). Sudbury, MA: Jones and Bartlett.

Savage-Rumbaugh, E. S. (1997). [Review of the book Mutualities in Dialogue]. International Journal of Primatology, 18(5), 847-853.

Savage-Rumbaugh, E. S. (1998). Scientific schizophrenia with regard to the language act. In J. Langer and M. Killen (Eds.) Piaget, evolution and development (pp. 145-169). Hillsdale, N.J.: Lawrence Erlbaum and Associates.

Savage-Rumbaugh, E. S. and Fields, W. M. (1998). Language and Culture: A Trans-Generation Interweaving. Language Origins Society, 27, 19-41.

Savage-Rumbaugh, E. S. & Rumbaugh, D. M. (1998). Perspectives on consciousness, language, and other emergent processes in apes and humans. In S. J. Hameroff, A. W. Kaszniak, & A. C. Scott (Eds.) Toward a science of consciousness II: The second Tucson discussions and debates (pp. 533-549). Cambridge, MA: MIT Press.

Savage-Rumbaugh, E. S. (1999). Ape language: Between a rock and a hard place. In B. King (Ed), Origins of language: What nonhuman primates can tell us. Santa Fe, NM: School of American Research Press.

Savage-Rumbaugh, S., Fields, W. M., Taglialatela, J. P. (2001). Language, speech, tools and writing: A cultural imperative. Journal of Consciousness Studies, 8, Nos. 5-7, 273-92.

Savage-Rumbaugh, S., Fields, W. (2002). "Hacias el control denuevas realidades." Quark, 25, 20-26.

Savage-Rumbaugh, S., Fields, W.M., & Spircu, T. (2004). The Emergence of Knapping and Vocal Expression Embedded in a Pan/Homo Culture. Journal of Biology and Philosophy, 19(4), 541-575.

Savage-Rumbaugh, E.S, Segerdahl, P. and Fields, W. M. (2005) "Individual differences in language competencies in apes resulting from unique rearing conditions imposed by different first epistemologies." In L. L. Namy (Ed.) *Symbol Use and Symbolic Representation* (pp. 199-219). Mahwah, NJ: Lawrence Erlbaum Associates.

Savage-Rumbaugh, S., Fields, W.M., Segerdahl, P., & D.M. Rumbaugh. (2005) "Culture prefigures cognition in Pan/Homo Bonobos." *Theoria* 20(3).

Savage-Rumbaugh, E. S., Toth, N., Schick, K. (2005) Kanzi learns to knap stone tools. In *Emergents and Rational Behaviorism: Essays in Honor of D. M. Rumbaugh*. Ed. By David A. Washburn,

Savage-Rumbaugh, S., Rumbaugh, D.M. & W.M. Fields. (2006) "Language as a Window on the Cultural Mind." In S. Hurley (Ed.) *Rational Animals*, Oxford: Oxford University Press.

Savage-Rumbaugh, S. & Fields, W.M. (2007) "Rules and Tools: Beyond Anthropomorphism: A qualitative report on the stone tool manufacture and use by captive bonobos Kanzi and Panbanisha." In N. Toth's Craft Institute Oldowan Technologies 1(1).

Savage-Rumbaugh, E. S., Wamba, K., Wamba, P., and Wamba, N. (2007) Welfare of Apes in Captive Environments: Comments On, and By, a Specific Group of Apes. *Journal of Applied Animal Welfare Science*, V. 10, N.1., pp. 7-19.

Savage-Rumbaugh ES, Rumbaugh DM, & Fields WM. (2009) “Empirical Kanzi: The ape language debate revisited.” *The Skeptic* (15)1, 25-34.

Savage-Rumbaugh ES, & Fields WM. (2011) “The Evolution and the Rise of Human Language: carry the baby.” In Christopher S. Heshilwood & Francesco d’Errico (Eds.), *Homo Symbolicus: the dawn of language, imagination, and spirituality*. Netherlands:

Savage-Rumbaugh ES & Fields WM. (2013). “Human Uniqueness – Constructions of Ourselves and Our Silbling Species: *Pan troglodytes* and *Pan paniscus*.” In A. Wessel, R. Menzel, & G. Tembrock (Eds.) *Quo Vadis, Behavioral Biology? Past, Present, and Future of an Evolving Science*. Stuttgart: Nova Acta Leopoldina.

Slocombe, K.E., Kaller, T., Call, J., & Zuberbühler, K. (2010). Chimpanzees Extract Social Information from Agonistic Screams. *PLoS ONE*, 5: e11473.

Slocombe, K.E., Townsend, S.W., & Zuberbühler, K. (2009) Wild Chimpanzees (*Pan troglodytes schweinfurthii*) Distinguish between Different Scream Types: Evidence from a Playback Study. *Anim. Cogn.*, 12: 441-449.

Temerlin, M.K. (1975). *Lucy: Growing Up Human*. Palo Alto

Tomasello, M., & Call, J. (2007). Introduction: Intentional Communication in Nonhuman Primates. In J. Call and M. Tomasello (Eds.), *The Gestural Communication of Apes and Monkeys* (pp. 1-15). Mahwah, New Jersey: Lawrence Erlbaum Associated. □

Tomonaga, M., & Imura, T. (2015). Efficient Search for a Face by Chimpanzees (*Pan troglodytes*). *Scientific Reports*, 5: 11437. DOI: 10.1038/srep11437

Uddin, M., Wildman, D.E., Liu G., et al. (2004). Sister Grouping of Chimpanzees and Humans as Revealed by Genomic-Wide Phylogenetic Analysis of Brain Gene Expression Profiles. *Proc. Natl. Acad. Sci., USA*, 101: 2957-2962.

Van Hooff, J.A. (1972). Comparative Approach to the Phylogeny of Laughter and Smiling. In R.A. Hinde (Ed.), *Non-Verbal Communication* (pp. 209-241). Cambridge, UK: Cambridge University Press.

van Leeuwen, E.J., Cronin, K.A., & Haun, D.B. (2014). A Group-Specific Arbitrary Tradition in Chimpanzees (*Pan troglodytes*). *Anim. Cogn.*, 17(6):1421-1425.

Watson, S.K., Townsend, S.W., Schel, A.M., Wilke, C., Wallace, E.K., Cheng, L., West, V., & Slocombe, K.E. (2015). Vocal Learning in the Functionally Referential Food Grunts of Chimpanzees. *Current Biology*, 25(4), 495-499. □

Whiten, A. (2011). The Scope of Culture in Chimpanzees, Humans and Ancestral Apes. *Phil. Trans. R.Soc. B*, 366: 997-1007. □

Whiten, A., Goodall, J., McGrew, W.C., Nishida, T., Reynolds, V., Sugiyama, Y., Tutin, C.E.G., Wrangham, R., & Boesch, C. (1999). Cultures in Chimpanzees. *Nature*, 399:682-685. □

Whiten, A., Goodall, J., McGrew, W.C., Nishida, T., Reynolds, V., Sugiyama, Y., Tutin, C.E.G., Wrangham, R.W., & Boesch, C. (2001). Charting Cultural Variation in Chimpanzees. *Behaviour*, 138: 1481-1516. □

Whiten, A., Schick, K., & Toth, N. (2009). The Evolution and Cultural Transmission of Percussive Technology: Integrating Evidence from Paleoanthropology and Primatology. *J. Hum. Evol.*, 57:420-435. □

Wildman, D., Grossman, L.I., & Goodman, M. (2002). Functional DNA in Humans and Chimpanzees Shows They are More Similar to Each Other Than Either is to Apes. In M. Goodman and A.S. Morfitt (Eds.), *Probing Human Origins* (pp 1-10). Cambridge, MA: American Academy of Arts and Sciences.

Wildman, D., Uddin, M., Liu, G., Grossman, L.I., & Goodman, M. (2003). Implications of Natural Selection in Shaping 99.4% Nonsynonymous DNA Identity between Humans and Chimpanzees: Enlarging Genus *Homo*. *Proc. Natl. Acad. Sci. USA*, 100: 7181-7188.

Wrangham, R.W., McGrew, W.C., de Waal, F.B.M. & Heltne, P.G. (Eds.). (1994). *Chimpanzee Cultures*. Cambridge, MA: Harvard University Press.

Proposed Order to Show Cause
[pp. 667 - 668]

FILED: NEW YORK COUNTY CLERK 12/02/2015 05:12 PM

NYSCEF DOC. NO. 42

INDEX NO. 162358/2015

RECEIVED NYSCEF: 12/02/2015

At I.A.S Part _____ of the
Supreme Court of the State of
New York, held in and for the
County of New York, at the
Courthouse thereof, 80 Centre
Street, New York, NY, on the
_____ day of _____, 201_

PRESENT: HON. _____
Justice of the Supreme Court

SUPREME COURT OF THE STATE OF NEW YORK
COUNTY OF NEW YORK

-----X

In the Matter of a Proceeding under Article 70 of the CPLR
for a Writ of Habeas Corpus,

THE NONHUMAN RIGHTS PROJECT, INC., on
behalf of TOMMY,

Petitioner,

-against-

PATRICK C. LAVERY, individually and as an officer
of Circle L Trailer Sales, Inc., DIANE LAVERY and
CIRCLE L TRAILER SALES, INC.,

Respondents.

-----X

**ORDER TO SHOW CAUSE &
WRIT OF HABEAS CORPUS**

Index No.:

TO THE ABOVE NAMED RESPONDENTS:

PLEASE TAKE NOTICE, That upon the annexed Verified Petition of Elizabeth Stein,
Esq. and Steven M. Wise, Esq. (subject to *pro hac vice* admission), with Exhibits and
Memorandum of Law, dated December 2, 2015, and upon all pleadings and proceedings herein,
let the Respondents PATRICK C. LAVERY, individually and as an officer of Circle L Trailer
Sales, Inc., DIANE LAVERY and CIRCLE L TRAILER SALES, INC., or their attorneys,

SHOW CAUSE at I.A.S. Part _____, Room _____, of this Court to be held at the Courthouse located at 80 Centre Street, New York, New York 10013, on the _____ day of _____, 201_ at _____ o'clock in the _____ of that day, or as soon thereafter as counsel can be heard, why an Order should not be entered granting Petitioner, The Nonhuman Rights Project, Inc. ("NhRP"), the following relief:

- A. Upon a determination that Tommy is being unlawfully detained, ordering his immediate discharge and transfer forthwith to an appropriate primate sanctuary;
- B. Awarding the NhRP the costs and disbursements of this action; and
- C. Such other and further relief as this Court deems just and proper.

It is THEREFORE:

ORDERED THAT, Sufficient cause appearing therefore, let service of a copy of this Order and all other papers upon which it is granted upon PATRICK C. LAVERY, individually and as an officer of Circle L Trailer Sales, Inc., DIANE LAVERY and CIRCLE L TRAILER SALES, INC. and upon Arthur Carl Spring, Esq., attorney for Respondents, by personal delivery, on or before the _____ of _____, 201_, be deemed good and sufficient. An affidavit or other proof of service shall be presented to this Court on the return date fixed above.

IT IS FURTHER ORDERED, that answering affidavits, if any, must be received by Elizabeth Stein, Esq., 5 Dunhill Road, New Hyde Park, New York 11040, and electronically filed with the NYSCEF system, no later than the _____ of _____, 201_.

Dated: _____
New York, New York

Honorable

ENTER:

Memorandum of Law in Support of Petition for
Habeas Corpus, dated December 2, 2016
 [pp. 669 - 801]

FILED: NEW YORK COUNTY CLERK 12/02/2015 05:12 PM

NYSCEF DOC. NO. 43

INDEX NO. 162358/2015

RECEIVED NYSCEF: 12/02/2015

SUPREME COURT OF THE STATE OF NEW YORK
 COUNTY OF NEW YORK

In the Matter of a Proceeding under Article 70 of the CPLR
 for a Writ of Habeas Corpus,

THE NONHUMAN RIGHTS PROJECT, INC., on behalf of
 TOMMY,

Petitioner,

-against-

PATRICK C. LAVERY, individually and as an officer of
 Circle L Trailer Sales, Inc., DIANE LAVERY, and
 CIRCLE L TRAILER SALES, INC.,

Respondents.

**MEMORANDUM OF
 LAW IN SUPPORT OF
 PETITION FOR
 HABEAS CORPUS**

Index No.

**Elizabeth Stein, Esq.
 Attorney for Petitioner
 5 Dunhill Road
 New Hyde Park, NY 11040
 Phone (516) 747-4726**

**Steven M. Wise, Esq.
 Attorney for Petitioner
 5195 NW 112th Terrace
 Coral Springs, FL 33076
 Phone (954) 648-9864**

Elizabeth Stein, Esq.
 Steven M. Wise, Esq.
 Subject to *pro hac vice* admission
 December____, 2015

TABLE OF CONTENTS

	<u>Page</u>
TABLE OF AUTHORITIES	v
I. INTRODUCTION AND PROCEDURAL HISTORY	1
II. STATEMENT OF FACTS	8
A. CHIMPANZEE AUTONOMY	8
1. INTRODUCTION.	8
2. SIMILARITIES BETWEEN CHIMPANZEES AND HUMANS: PHYSIOLOGY, DNA, AND COGNITION	9
3. SIMILARITIES BETWEEN CHIMPANZEES AND HUMANS: BEHAVIOR, MENTAL AND EMOTIONAL PROCESSES.....	10
a. Self-recognition and self-awareness	11
b. Self-control and episodic memory	11
c. Language, communication, and intention.....	13
d. Imagination and humor.....	16
e. Theory of mind	17
f. Empathy.....	18
g. Awareness of death.....	19
h. Tool-making and chimpanzee culture	19
i. Imitation and emulation.....	21
4. SIMILARITIES BETWEEN CHIMPANZEES AND HUMANS: NUMEROSITY, SEQUENTIAL LEARNING AND MEMORY	23
B. CHIMPANZEES SHOULDER DUTIES AND RESPONSIBILITIES BOTH WITHIN CHIMPANZEE SOCIETIES AND WITHIN CHIMPANZEE/HUMAN SOCIETIES.	24
1. INTRODUCTION.	24

2. CHIMPANZEES ROUTINELY SHOULDER DUTIES AND RESPONSIBILITIES WITHIN WILD CHIMPANZEE SOCIETIES.	26
a. Familial duties and responsibilities.....	26
1) Maternal duties	26
2) Paternal duties	27
3) Sibling duties.....	28
b. Duties beyond kinship: adoption	29
c. Cooperation and group belonging: solidarity in between-group contexts	30
d. Social dynamics: male hierarchy	32
e. Lawful and rule-governed/policing within chimpanzee societies	33
f. Cooperation and group belonging: within-group solidarity	34
1) Help and tending of injured or vulnerable group members.....	34
2) Food sharing and hunting duties	35
3) Informing group members about danger	38
4) Death-related duties.....	39
3. CHIMPANZEES SHOULDER DUTIES AND RESPONSIBILITIES WITHIN CAPTIVE CHIMPANZEE SOCIETIES.	40
4. CHIMPANZEES SHOULDER DUTIES AND RESPONSIBILITIES WITHIN CHIMPANZEE/HUMAN SOCIETIES.....	41
a. Promise-keeping and fair exchanges in chimpanzee/human societies.....	41
b. Duties and responsibilities in interactions with humans.....	42
c. Language-trained chimpanzees exhibit an enhanced ability to shoulder duties and responsibilities.....	45
1) Chores.....	45

2) Moral behavior	46
3) Other “human-like” duties.....	49
C. NATIONAL INSTITUTION OF HEALTH STUDIES AND SAVE THE CHIMPS.	57
III. ARGUMENT.....	59
A. THE NhRP HAS STANDING TO BRING THIS HABEAS CORPUS PETITION	59
B. VENUE IS PROPER IN NEW YORK COUNTY	60
C. NEITHER RES JUDICATA NOR COLLATERAL ESTOPPEL BARS THE NhRP’S PETITION FOR A COMMON LAW WRIT OF HABEAS CORPUS AND ORDER TO SHOW CAUSE	62
D. A PERSON ILLEGALLY IMPRISONED IN NEW YORK IS ENTITLED TO A COMMON LAW WRIT OF HABEAS CORPUS	65
1. “Person” is not a synonym for “human being,” but designates an entity with the capacity for legal rights.....	66
2. The Third Department’s <i>Lavery</i> decision does not bind this Court.....	70
3. <i>Lavery</i> was wrongly decided	72
a. The ability to shoulder duties and responsibilities is not, and has never been, necessary for legal personhood, especially for the purpose of a common law writ of habeas corpus	72
b. The Third Department exceeded its authority by taking judicial notice, without notice to the parties, that chimpanzees lack the capacity to shoulder duties and responsibilities.....	82
c. If the capacity to shoulder duties and responsibilities is required for habeas corpus personhood, then the NhRP has demonstrated that Tommy possesses that capacity.....	85
4. As common law natural persons are presumed free, Respondents must prove they are not unlawfully imprisoning Tommy	86
5. Because Tommy is being unlawfully detained, is are entitled to immediate discharge	87

E. TOMMY IS A “PERSON” WITHIN THE MEANING OF THE COMMON LAW OF HABEAS CORPUS AND THEREFORE CPLR 7002(A).....	95
1. The term “person” in Article 70 refers to its meaning at common law	95
2. As Tommy is autonomous and self-determining, he is a common law “person” entitled to the common law right to bodily liberty that the common law of habeas corpus protects	100
3. Tommy is entitled to the common law equality right to bodily liberty that the common law of habeas corpus protects	102
4. The New York legislature has determined that some nonhuman animals are persons in the trust context.....	110
IV. CONCLUSION	113

TABLE OF AUTHORITIES**Cases**

<i>Addington v. State</i> , 199 Kan. 554 (1967).....	96
<i>Affronti v. Crosson</i> , 95 N.Y.2d 713 (2001).....	106
<i>Allen v. New York State Div. of Parole</i> , 252 A.D.2d 691 (3d Dept. 1998).....	64
<i>Am. Exp. Bank, FSB v. Bienenstock</i> , 17 N.Y.S.3d 381, 2015 N.Y. Misc. LEXIS 2116 (2d Dept. 2015)	84
<i>Application of Holbrook</i> , 220 N.Y.S.2d 382 (Sup. Ct. 1961).....	61
<i>Barnard v. Heydrick</i> , 1866 WL 5268 (N.Y. Sup. Ct. 1866).....	5
<i>Bd. of Educ. of City Sch. Dist. of City of New York v. Iannelli Const. Co., Inc.</i> , 906 N.Y.S.2d 778 (Sup. Ct. 2009).....	5
<i>Bellis v. United States</i> , 417 U.S. 85 (1974).	69
<i>Berrian v. Duncan</i> , 289 A.D.2d 655 (3d Dept. 2001)	92
<i>Bing v. Thunig</i> , 2 N.Y.2d 656 (1957)	99
<i>Brevorka ex rel. Wittle v. Schuse</i> , 227 A.D.2d 969 (4th Dept. 1996).....	88, 98
<i>Brooke Bond India, Ltd. v. Gel Spice Co., Inc.</i> , 192 A.D.2d 458 (1st Dept. 1993).....	5
<i>Brown v. Muniz</i> , 61 A.D.3d 526 (1st Dept. 2009)	84
<i>Brown v. State</i> , 89 N.Y.2d 172 (1996).....	103
<i>Byrn v. New York City Health & Hospitals Corp.</i> , 39 A.D.2d 600 (2d Dept. 1972).....	77
<i>Byrn v. New York City Health & Hospitals Corporation</i> , 31 N.Y.2d 194 (1972).....	4, 65, 66, 67, 68, 69, 70, 71, 77, 82, 110
<i>Caceci v. Do Canto, Const. Corp.</i> , 72 N.Y.2d 52 (1988).....	99
<i>Case of the Hottentot Venus</i> , 13 East 185, 104 Eng. Rep. 344 (K.B. 1810).....	59, 77
<i>Casto v. Casto</i> , 404 So. 2d 1046 (Fla. 1981)	96
<i>Cetacean Community v. Bush</i> , 386 F. 3d 1169 (9th Cir. 2004)	73
<i>Chasalow v. Bd. of Assessors</i> , 176 A.D.2d 800 (2d Dept. 1991)	84

<i>Citizens to End Animal Suffering & Exploitation, Inc. v. New England Aquarium</i> , 836 F. Supp. 45 (D. Mass. 1993).....	73
<i>Clark v. Scoville</i> , 198 N.Y. 279 (1910).....	64
<i>Cleburne v. Cleburne Living Center, Inc.</i> , 473 U.S. 432 (1985).....	105, 106
<i>Commonwealth v. Aves</i> , 35 Mass. 193 (1836).....	88
<i>Commonwealth v. Holloway</i> , 2 Serg. & Rawle 305 (Pa. 1816).....	88
<i>Commonwealth v. Taylor</i> , 44 Mass. 72 (1841).....	88
<i>Crater Club v. Adirondack Park Agency</i> , 86 A.D.2d 714 (3d Dept. 1982).....	84
<i>Delio v. Westchester County Medical Center</i> , 129 A.D.2d 1 (2d Dept. 1987).....	101
<i>Dollas v. W.R. Grace & Co.</i> , 225 A.D.2d 319 (1st Dept. 1996).....	82
<i>Drost v. Hookey</i> , 25 Misc. 3d 210 (Dist. Ct 2009)	96
<i>Ecco High Frequency Corp. v. Amtorg Trading Corp.</i> , 81 N.Y.S.2d 610 (N.Y. Sup. Ct. 1948).....	83
<i>Equal. Found. of Greater Cincinnati, Inc. v. City of Cincinnati</i> , 128 F.3d 289 (6th Cir. 1997)	106
<i>Ex parte D’Olivera</i> , 7 F. Cas. 853 (No. 3,967) (CC Mass. 1813)	77
<i>Feger v. Warwick Animal Shelter</i> , 59 A.D.3d 68 (2d Dept. 2008).....	111
<i>Fish v. Fisher</i> , 2 Johns. Cas. 89 (Sup. Ct. 1800)	86
<i>Flanagan v. Mount Eden General Hospital</i> , 24 N.Y. 2d 427 (1969)	98
<i>Forbes v. Cochran</i> , 107 Eng. Rep. 450 (K.B. 1824)	98
<i>Funk v. United States</i> , 290 U.S. 371 (1933)	99
<i>Gallagher v. St. Raymond’s R.C. Church</i> , 21 N.Y.2d 554 (1968).....	99
<i>Gilman v. McArdle</i> , 65 How. Pr. 330 (N.Y. Super. 1883).....	110
<i>Goodridge v. Department of Public Health</i> , 440 Mass. 309 (2003).....	106, 107
<i>Grace Plaza of Great Neck, Inc. v. Elbaum</i> , 82 N.Y.2d 10 (1993)	101
<i>Graham v. State of New York</i> , 25 A.D.2d 693 (3d Dept. 1966)	74
<i>Greenburg v. Lorenz</i> , 9 N.Y. 2d 195 (1961).....	99

<i>Hamilton v. Miller</i> , 23 N.Y.3d 592 (2014)	82, 83
<i>Harris v. McRea</i> , 448 U.S. 297 (1980)	81
<i>Harris v. Nelson</i> , 394 U.S. 286 (1969)	4
<i>Hernandez v. Robles</i> , 7 N.Y.3d 338 (2006)	105
<i>Hewitt v. New York, N.H. & H.R. Co.</i> , 284 N.Y. 117 (1940)	103
<i>Hoff v. State of New York</i> , 279 N.Y. 490 (1939)	97
<i>Hogan v. Culkin</i> , 18 N.Y.2d 330 (1966)	61, 62
<i>Holzer v. Deutsche Reichsbahn Gesellschaft</i> , 290 N.Y.S. 181 (Sup. Ct. 1936)	60
<i>In re Belt</i> , 2 Edm. Sel. Cas. 93 (Sup. 1848)	98
<i>In re Cindy R.</i> , 970 N.Y.S.2d 853 (Sup. Ct. 2012)	98
<i>In re DeSanto</i> , 898 N.Y.S.2d 787 (Sup. Ct. 2010)	87
<i>In re Estate of Howells</i> , 260 N.Y.S. 598 (Sur. Ct. 1932)	111
<i>In re Fouts</i> , 677 N.Y.S.2d 699 (Sur. Ct. 1998)	72, 111
<i>In re Gabr</i> , 39 Misc. 3d 746 (Sup. Ct. 2013)	100
<i>In re Goodell</i> , 39 Wis. 232 (1875)	69
<i>In re Kirk</i> , 1 Edm. Sel. Cas. 315 (N.Y. Sup. Ct. 1846)	60, 86, 98
<i>In re M'Dowle</i> , 8 Johns. 328 (Sup. Ct. 1811)	88, 98
<i>In re Mickel</i> , 14 Johns. 324 (N.Y. Sup. Ct. 1817)	68, 69
<i>In re Mills' Estate</i> , 111 N.Y.S.2d 622 (Sur. Ct. 1952)	111
<i>In re New York Presbyterian Hosp.</i> , 181 Misc. 2d 142 (Sup. Ct. 1999)	101
<i>In re Perra</i> , 827 N.Y.S.2d 587 (Sup. Ct. 2006)	83
<i>In re Quinn</i> , 2 A.D. 103 (2d Dept. 1896)	63
<i>In re Tom</i> , 5 Johns. 365 (N.Y. 1810)	7, 98
<i>In re Voorhis' Estate</i> , 27 N.Y.S.2d 818 (Sur. Ct. 1941)	111
<i>In re Young</i> , 211 N.Y.S. 2d 621 (Sup. Ct. 1961)	104

<i>Israel Women's Network v. Government</i> , HCJ 453/94. 454/94, ¶22 (Israel High Court of Justice 1994)	103
Jack B. Weinstein, Harold Korn & Arthur R. Miller, <i>New York Civil Practice</i> , § 4511.02 (2d Ed. 2005).	82
<i>Jack v. Martin</i> , 14 Wend. 507 (N.Y. 1835)	109
<i>Jackson v. Bulloch</i> , 12 Conn. 38 (1837)	77
<i>Jarman v. Patterson</i> , 23 Ky. 644 (1828)	68
<i>Jones v. People</i> , 79 N.Y. 45 (1879)	7
<i>Kerrigan v. Commissioner of Public Health</i> , 289 Conn. 135 (2008)	107
<i>Killeen v. Crosson</i> , 218 A.D. 2d 217 (4th Dept. 1996).....	70
<i>King v. Schiever</i> , 2 Burr. 765, 97 Eng. Rep. 551 (K.B.1759).....	76
<i>Lawrence v. Texas</i> , 539 U.S. 558 (2003).....	109
<i>Lemmon v. People</i> , 20 N.Y. 562 (1860)	59, 69, 75, 87, 98, 109
<i>Lenzner v. Falk</i> , 68 N.Y.S.2d 699 (Sup. Ct. 1947).....	110
<i>Lewis v. Burger King</i> , 344 Fed. Appx. 470 (10th Cir. 2009).....	72, 73
<i>Litz Enterprises, Inc. v. Stand. Steel Industries, Inc.</i> , 57 A.D.2d 34 (4th Dept. 1977).....	64
<i>Losaw v. Smith</i> , 109 A.D. 754 (3d Dept. 1905)	63
<i>Lough v. Outerbridge</i> , 143 N.Y. 271 (1894)	103
<i>Mabo v. Queensland</i> (no. 2), 175 CLR 1 F.C. 92-014, ¶29 (Australian Supreme Court 1992)	103
<i>MacPherson v. Buick Motor Company</i> , 217 N.Y. 382 (1916)	100
<i>Masjid Shahid Ganj & Ors. v. Shiromani Gurdwara Parbandhak Committee, Amritsar</i> , A.I.R 1938 369, para, 15 (Lahore High Court, Full Bench).....	69
<i>Mason v. Granholm</i> , 2007 WL 201008 (E.D. Mich. 2007).....	107
<i>Matter of Fosmire v. Nicoleau</i> , 75 N.Y.2d 218 (1990).....	101
<i>Matter of Gault</i> , 387 U.S. 1 (1967).....	75
<i>Matter of Kathleen K.</i> , 17 N.Y.3d 380 (2011).....	101

<i>Matter of M.B.</i> , 6 N.Y.3d 437 (2006)	101
<i>Matter of Mark C.H.</i> , 28 Misc. 3d 765 (Sur. Ct. 2010)	101
<i>Matter of MHLS v. Wack</i> , 75 N.Y.2d 751 (1989).....	3, 90
<i>Matter of Morhous v. Supreme Ct. of State of N.Y.</i> , 293 N.Y. 131 (1944).....	97
<i>Matter of Storar</i> , 52 N.Y.2d 363 (1981).....	101
<i>Matter of Westchester County Med. Ctr. (O'Connor)</i> , 72 N.Y.2d 517 (1988)	101
<i>Matthews v. Gilleran</i> , 12 N.Y.S. 74 (Gen. Term. 1890).....	5
<i>McAllister v. Div. of Parole of New York State</i> , 186 A.D.2d 326 (3d Dept. 1992).....	64
<i>McGraw v. Wack</i> , 220 A.D.2d 291 (1st Dept. 1995).....	3, 90
<i>Mental Hygiene Legal Services ex rel. Cruz v. Wack</i> , 75 N.Y.2d 751 (1989).....	90
<i>Miller v. Minister of Defence</i> , HCJ 4541/94, 49(4) P.D. 94, ¶6 (Israel High Court of Justice 1995)	103
<i>Millington v. Southeastern Elevator Co.</i> , 22 N.Y.2d 498 (1968)	99
<i>Montgomery v. Daniels</i> , 338 N.Y.2d 41 (1975)	7
<i>Moore v. MacDuff</i> , 309 N.Y. 35 (1955)	86
<i>Natanson v. Kline</i> , 186 Kan. 393 (1960)	100
<i>New York Tel. Co. v. Siegel-Cooper Co.</i> , 202 N.Y. 502 (1911)	103
<i>Nonhuman Rights Project, Inc., ex rel. Kiko v Presti</i> , 124 A.D.3d 1334 (4th Dept. 2015).....	2, 71, 80, 90
<i>Norway Plains Co. v. Boston and Maine Railroad</i> , 67 Mass (1 Gray) 263 (1854).....	67
<i>Oatfield v. Waring</i> , 14 Johns. 188 (Sup. Ct. 1817).....	86
<i>Obergefell v. Hodges</i> , 135 S.Ct. 2602 (2015).....	70
<i>P.F. Scheidelman & Sons, Inc. v Webster Basket Co.</i> , 257 N.Y.S. 552 (Sup. Ct. 1932).....	96
<i>Parker v. Mobil Oil Corp.</i> , 7 N.Y.3d 434 (2006)	83
<i>People ex re. Stabile v. Warden of City Prison</i> , 202 N.Y. 138 (1911).	87
<i>People ex re. Wilson v. Flynn</i> , 106 N.Y.S. 1141 (Sup. Ct. 1907).....	87

<i>People ex rel Lobenthal v. Koehler</i> , 129 A.D.2d 28 (1st Dept. 1987).....	3, 4
<i>People ex rel. Anderson v. Warden, New York City Correctional Instn. for Men</i> , 325 N.Y.S.2d 829 (Sup. Ct. 1971).....	63
<i>People ex rel. Ardito v. Trujillo</i> , 441 N.Y.S.2d 348 (Sup. Ct. 1981).....	89
<i>People ex rel. Berry v. McGrath</i> , 61 Misc. 2d 113 (N.Y. Sup. Ct. 1969)	93
<i>People ex rel. Brown v. Johnston</i> , 9 N.Y.2d 482 (1961)	89, 92, 98
<i>People ex rel. Bungart v. Wells</i> , 57 A.D. 140 (2d Dept. 1901)	97
<i>People ex rel. Butler v. McNeill</i> , 219 N.Y.S.2d 722 (Sup. Ct. 1961)	63
<i>People ex rel. Carollo v. Brophy</i> , 294 N.Y. 540 (1945).....	87
<i>People ex rel. Ceschini v. Warden</i> , 30 A.D.2d 649 (1st Dept. 1968)	93
<i>People ex rel. Cordero v. Thomas</i> , 329 N.Y.S.2d 131 (Sup. Ct. 1972).....	61
<i>People ex rel. Cronin v. Carpenter</i> , 25 Misc. 341 (N.Y. Sup. Ct. 1898)	88
<i>People ex rel. Dawson v. Smith</i> , 69 N.Y.2d 689 (1986).....	92
<i>People ex rel. Douglas v. Vincent</i> , 50 N.Y.2d 901 (1980)	91
<i>People ex rel. F. v. Hill</i> , 36 A.D.2d 42 (2d Dept. 1971).....	88
<i>People ex rel. Gonzalez v. Wayne County Sheriff</i> , 96 A.D.3d 1698 (4th Dept. 2012)	91
<i>People ex rel. Hall v. Rock</i> , 71 A.D.3d 1303 (3d Dept. 2010)	91
<i>People ex rel. Hubert v. Kaiser</i> , 150 A.D. 541 (1st Dept. 1912).....	60
<i>People ex rel. Intner on Behalf of Harris v. Surles</i> , 566 N.Y.S.2d 512 (Sup. Ct. 1991)	88
<i>People ex rel. Jenkins v. Kuhne</i> , 57 Misc. 30 (Sup. Ct. 1907).....	3
<i>People ex rel. Jesse F. v. Bennett</i> , 242 A.D.2d 342 (2d Dept. 1997)	90, 92, 98
<i>People ex rel. Kalikow on Behalf of Rosario v. Scully</i> , 198 A.D.2d 250 (2d Dept. 1993)	93
<i>People ex rel. Kaplan v. Commissioner of Correction</i> , 60 N.Y.2d 648 (1983).....	91
<i>People ex rel. Kaufmann v. Davis</i> , 57 A.D.2d 597 (2d Dept. 1977)	88
<i>People ex rel. Keitt v. McCann</i> , 18 N.Y.2d 257 (1966).....	4, 89, 98
<i>People ex rel. LaBelle v. Harriman</i> , 35 A.D.2d 13 (3d Dept. 1970)	89

<i>People ex rel. Lawrence v. Brady</i> , 56 N.Y. 182 (1874).....	62, 63
<i>People ex rel. Leonard HH v. Nixon</i> , 148 A.D.2d 75 (3d Dept. 1989).....	62
<i>People ex rel. Margolis v. Dunston</i> , 174 A.D.2d 516 (1st Dept. 1991).....	88
<i>People ex rel. McCallister v. McGinnis</i> , 251 A.D.2d 835 (3d Dept. 1998).....	92
<i>People ex rel. Meltsner v. Follette</i> , 32 A.D.2d 389 (2d Dept. 1969).....	89, 90
<i>People ex rel. Nonhuman Rights Project, Inc. v. Lavery</i> , 124 A.D.3d 148 (3d Dept. 2014).....	1, 70, 71, 72, 73, 74, 75, 79, 80, 82, 83, 85, 94
<i>People ex rel. Patrick v. Frost</i> , 133 A.D. 179 (2d Dept. 1909).....	3, 97
<i>People ex rel. Pruyne v. Walts</i> , 122 N.Y. 238 (1890).....	3
<i>People ex rel. Rao v. Warden of City Prison</i> , 11 N.Y.S.2d 63 (Sup. Ct. 1939)	60
<i>People ex rel. Richard S. v. Tekben</i> , 219 A.D.2d 609 (2d Dept. 1995)	90
<i>People ex rel. Rockey v. Krueger</i> , 306 N.Y.S.2d 359 (Sup. Ct. 1969)	93
<i>People ex rel. Rohrllich v. Follette</i> , 20 N.Y.2d 297 (1967).....	89
<i>People ex rel. Sabatino v. Jennings</i> , 221 A.D. 418 (4th Dept. 1927).....	62, 63
<i>People ex rel. Sabatino v. Jennings</i> , 246 N.Y. 258 (1927).....	97
<i>People ex rel. Saia v. Martin</i> , 289 N.Y. 471 (1943).....	89
<i>People ex rel. Shannon v. Khahaifa</i> , 74 A.D.3d 1867 (4th Dept. 2010)	91
<i>People ex rel. Sheldon v. Curtin</i> , 152 A.D. 364 (4th Dept. 1912).....	60
<i>People ex rel. Silbert v. Cohen</i> , 36 A.D.2d 331 (2d Dept. 1971)	88
<i>People ex rel. Slatzkata v. Baker</i> , 3 N.Y.S. 536, 539 (N.Y. Super. Ct. 1888).....	88
<i>People ex rel. Smith v. LaVallee</i> , 29 A.D.2d 248 (4th Dept. 1968).....	93
<i>People ex rel. Soffer v. Luger</i> , 347 N.Y.S. 2d 345 (N.Y. Sup. Ct. 1973)	88
<i>People ex rel. Tatra v. McNeill</i> , 19 A.D.2d 845 (2d Dept. 1963).....	74
<i>People ex rel. Turano v. Cunningham</i> , 57 A.D.2d 801 (1st Dept. 1977)	60
<i>People ex rel. Tweed v. Liscomb</i> , 60 N.Y. 559 (1875)	3, 5, 95, 96, 97
<i>People ex rel. Whitman v. Woodward</i> , 150 A.D. 770 (2d Dept. 1912)	97

<i>People ex. rel Caldwell v Kelly</i> , 35 Barb. 444 (Sup Ct. 1862)	86
<i>People v. Darby</i> , 263 A.D.2d 112 (1st Dept. 2000).....	82
<i>People v. Eulo</i> , 63 N.Y. 2d 341 (1984).....	101
<i>People v. Forbes</i> , 19 How. Pr. 457, 11 Abb.Pr. 52 (N.Y. Sup. Ct. 1860)	87
<i>People v. Hanna</i> , 3 How. Pr. 39 (N.Y. Sup. Ct. 1847).....	60, 88
<i>People v. Jones</i> , 73 N.Y.2d 427 (1989)	82
<i>People v. Jovanovic</i> , 263 A.D.2d 182 (1st Dept. 1999).....	82
<i>People v. Kennedy</i> , 68 N.Y.2d 569 (1986).	84
<i>People v. King</i> , 110 N.Y. 418 (1888)	104
<i>People v. McLeod</i> , 3 Hill 635 (N.Y. 1842).....	60
<i>People v. Rosen</i> , 81 N.Y. 2d 237 (1993)	100
<i>People v. Schildhaus</i> , 8 N.Y.2d 33 (1960).....	7
<i>People v. Scott</i> , 79 N.Y.2d 474 (1992)	4
<i>People v. Weissenbach</i> , 60 N.Y. 385 (1875)	98
<i>Post v. Lyford</i> , 285 A.D. 101 (3d Dept. 1954).....	63
<i>Pramath Nath Mullick v. Pradyunna Nath Mullick</i> , 52 Indian Appeals 245 (1925).	69
<i>R.M. v. Dr. R.</i> , 855 N.Y.S.2d 865, 866 (Sup. Ct. 2008)	5
<i>Rasul v. Bush</i> , 542 U.S. 466 (2004).....	76
<i>Rechler Eq. B-1, LLC v. AKR Corp.</i> , 98 A.D.3d 496 (2d Dept. 2012).....	5
<i>Rivers v. Katz</i> , 67 N.Y.2d 485 (1986).....	100, 101
<i>Robinson ex rel. Chapman v. Bartlett</i> , 95 A.D.3d 1531 (3d Dept. 2012).....	84
<i>Roe v. Wade</i> , 410 U.S. 113 (1973).....	68, 69
<i>Romer v. Evans</i> , 517 U.S. 620 (1996).....	105, 106, 107
<i>Root v. Long Island R. Co.</i> , 114 N.Y. 300 (1889)	103
<i>Rumsey v. New York and New England Railway Co.</i> , 133 N.Y. 79 (1892).....	100

<i>Sable v. Hitchcock</i> , 2 Johns. Cas. 79 (N.Y. Sup. Ct. 1800)	68, 69
<i>Samuels v. High Braes Refuge, Inc.</i> , 8 A.D.3d 1110 (4th Dept. 2004).....	70
<i>Sanders v. United States</i> , 373 U.S. 1 (1963).....	63
<i>Santa Clara County v. Southern Pacific Railroad</i> , 118 U.S. 394 (1996).....	68, 69
<i>Schloendorff v. Soc'y of New York Hosp.</i> , 211 N.Y. 125 (1914).	101
<i>Shiromani Gurdwara Parbandhak Committee Amritsar v. Som Nath Dass</i> , A.I.R. 2000 S.C. 421	68
<i>Silver v. Great American Ins. Co.</i> , 29 N.Y. 2d 356 (1972).....	100
<i>Sisquoc Ranch Co. v. Roth</i> , 153 F. 2d 437 (9th Cir. 1946).....	74
<i>Siveke v. Keena</i> , 441 N.Y.S. 2d 631 (Sup. Ct. 1981).....	88, 95
<i>Smith v. Hoff</i> , 1 Cow. 127 (N.Y. 1823).....	68, 69
<i>Somerset v. Stewart</i> , Lofft 1, 98 Eng. Rep. 499 (K.B. 1772).....	6, 59, 69, 75, 77, 87, 98
<i>State ex rel. Cox v. Appelton</i> , 309 N.Y.S.2d 290 (Sup. Ct. 1970)	61, 62
<i>State ex rel. Henry L. v. Hawes</i> , 667 N.Y.S.2d 212 (Co. Ct. 1997).....	90
<i>State v. A.M.R.</i> , 147 Wash. 2d 91 (2002).....	96
<i>State v. Connor</i> , 87 A.D.2d 511 (1st Dept. 1982).....	88
<i>State v. Lascaris</i> , 37 A.D.2d 128 (4th Dept. 1971).....	60
<i>State v. Moore</i> , 298 A.D. 2d 814 (3d Dept. 2002).....	70
<i>State v. Perry</i> , 610 So. 2d 746, 767 (La. 1992).....	100
<i>State v. Pitney</i> , 1 N.J.L. 165 (N.J. 1793).....	88
<i>States v. Lourdes Hosp.</i> , 100 N.Y.2d 208 (2003)	82
<i>Stuart v. Commissioner of Correction</i> , 266 Conn. 596 (2003)	107
<i>Superintendent of Belchertown State School v. Saikewicz</i> , 373 Mass. 728 (1977)	101
<i>Sweatt v. Painter</i> , 339 U.S. 629 (1950)	105

<i>The Nonhuman Rights Project ex rel. Hercules and Leo v. Stanley</i> , 16 N.Y.S.3d 898 (Sup. Ct. 2015)	3, 4, 5, 6, 7, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 80, 90, 92, 94, 97, 109, 110, 113
<i>The Nonhuman Rights Project, Inc. v. Stanley Jr., M.D.</i> , 2015 WL 1804007 (Sup. 2015).....	2
<i>The Nonhuman Rights Project, Inc. v. Stanley</i> , 2015 WL 1812988 (Sup. 2015).	2
<i>Tilikum ex rel. People for the Ethical Treatment of Animals, Inc. v. Sea World Parks & Entertainment</i> , 842 F. Supp.2d 1259 (S.D. Cal. 2012).....	73
<i>TOA Const. Co. v. Tsitsires</i> , 54 A.D.3d 109 (1st Dept. 2008).....	82, 84
<i>Trongett v. Byers</i> , 5 Cow. 480 (N.Y. Sup. Ct. 1826).....	68, 69
<i>Under 21, Catholic Home Bur. for Dependent Children v. City of New York</i> , 65 N.Y.2d 344 (1985).....	105
<i>Union P. R. Co. v. Botsford</i> , 141 U.S. 250 (1891).....	80, 100, 104
<i>United Australia, Ltd., v. Barclay's Bank, Ltd.</i> , (1941) A.C. 1, 29.....	99
<i>United States ex rel. Standing Bear v. Crook</i> , 25 F. Cas. 695 (D. Neb. 1879).....	69, 75
<i>United States v. Barona</i> , 56 F.3d 1087 (9th Cir. 1995)	75
<i>United States v. Mett</i> , 65 F. 3d 1531 (9th Cir. 1995).....	74
<i>United States v. Villato</i> , 2 Dall. 379 (CC Pa. 1797).....	77
<i>Varnum v. O'Brien</i> , 763 N.W. 2d 862 (Iowa 2009)	107, 110
<i>Vriend v. Alberta</i> , 1 R.C.S. 493 (Canadian Supreme Court 1998)	102
<i>W.J.F. Realty Corp. v. State</i> , 672 N.Y.S.2d 1007 (Sup. Ct. 1998)	98
<i>Wartelle v. Womens' & Children's Hospital</i> , 704 So. 2d 778 (La. 1997).....	67
<i>Waste Management of Wisconsin, Inc. v. Fokakis</i> , 614 F. 2d 138 (7th Cir. 1980).....	74
<i>Whitford v. Panama R. Co.</i> , 23 N.Y. 465 (1861).....	86
<i>Williams v. Dir. of Long Island Home, Ltd.</i> , 37 A.D.2d 568 (2d Dept. 1971).....	7
<i>Wilson v. Izard</i> , 30 F. Cas. 131 (No. 131 (No. 17, 810)	77
<i>Woods v. Lancet</i> , 303 N.Y. 349 (1951).....	98, 99

Statutes

CPLR 101	96
CPLR 102	96
CPLR 2101	5
CPLR 7001	4, 74
CPLR 7002	59, 60, 87
CPLR 7003	1, 6, 61, 62, 63, 87
CPLR 7004	61
CPLR 7006	87
CPLR 7010	87, 89
CPLR Article 105	95
EPTL 7-6.1	111
EPTL 7-8.1	66, 79, 81, 82, 110, 111, 113
N.Y. Stat. Law § 314 (McKinney)	87
SCPA 1750(2)	101

Other Authorities

“Companies with Invasive Chimpanzee Research Policies” (February 24, 2014)	109
“Free Willy – And His Pals,” <i>Scientific American</i> 10 (March 2014).	109
Advisory Committee Notes to CPLR 7003(b)	62
Vincent Alexander, <i>Practice Commentaries, Article 70 (Habeas Corpus), In General</i> (2013)	4
Francis Bacon, “The argument of Sir Francis Bacon, His Majesty’s Solicitor General, in the Case of the Post-Nati of Scotland,” in IV <i>The Works Of Francis Bacon, Baron of Verulam, Viscount St. Alban And Lord Chancellor</i> 345 (1845) (1608)	86
John Berkman, “Just Chimpanzees? – A Thomistic Perspective of Ethics in a Nonhuman Species,” in <i>Beastly Morality – Animals as Ethical Agents</i> 195, 202-219 (Jonathan K. Crane, ed. Columbia University Press 2016)	8
William Blackstone, <i>Commentaries on the Laws of England</i> (1765-1769).	66, 69

Benjamin N. Cardozo, <i>The Nature of the Judicial Process</i> 66 (Yale Univ. Press 1921) . 67, 70, 99	
<i>Chimpanzees in Biomedical and Behavioral Research - Assessing the Necessity</i> 27 (Bruce M. Altevogt, et. al, eds., The National Academies Press 2011).....	108
1 Sir Edward Coke, <i>The First Part of the Institutes of the Laws of England</i> sec. 193, at *124b (1628).....	86
David Brion Davis, <i>The Problem of Slavery in the Age of Emancipation</i> 23 (2014).	108
John F. Dillon, <i>The Laws and Jurisprudence of England and America</i> 18 (Little, Brown & Co. 1894)	67
Paul Finkleman, <i>Slavery in the Courtroom</i> 57 (1985).....	109
Sir John Fortescue, <i>De Laudibus Legum Angliae</i> 105 (S.B. Chrimes, trans. 1942 [1545])	86
Wolfgang Friedman, <i>Legal Theory</i> 521-523 (5 th ed. 1967).....	66
John Chipman Gray, <i>The Nature and Sources of the Law</i> , Chapter II (1909).....	66, 67, 78, 80
Wesley N. Hohfeld, <i>Some Fundamental Legal Conceptions as Applied in Judicial Reasoning</i> , 23 YALE L. J. 16 (1913).	79
Judith S. Kaye, <i>Forward: The Common Law and State Constitutional Law as Full Partners in the Protection of Individual Rights</i> , 23 RUTGERS L. J. 727 (1992).....	86, 99, 105
Hans Kelsen, <i>General Theory of Law and State</i> 93-109 (1945).....	66
1 <i>Kent's Commentaries</i> 477 (13 th edition 1884)	100
5 <i>Collected Works of Abraham Lincoln</i> 537 (Roy P. Basler, ed. 1953)	109
Saru M. Matambanadzo, <i>Embodying Vulnerability: A Feminist Theory of the Person</i> , 20 Duke J Gender L & Policy 45 [2012]	68
Mem. of Senate, NY Bill Jacket, 1996 S.B. 5207, Ch. 159.....	111
Note, <i>The Antidiscrimination principle in the Common Law</i> , 102 HARVARD L. REV. 1993 (1989).	104
Note, <i>What We Talk About When We Talk About Persons: The Language of a Legal Fiction</i> , 114 HARV. L. REV. 1745 (2001).	67
N.Y. Bill Jacket, 2010 A.B. 5985, Ch. 70 (2010).....	111
George Whitecross Paton, <i>A Textbook of Jurisprudence</i> 349-356 (4 th ed., G.W. Paton & David P. Derham eds. 1972).....	66, 78

George Whitecross Paton, <i>A Textbook of Jurisprudence</i> 393 (3 rd ed. 1964).....	67, 78
Pericles' Funeral Oration, Thucydides, <i>The Complete Writings of Thucydides - The Peloponnesian War</i> , sec. II. 37, at 104 (1951).....	86
Prince, Richardson On Evidence § 2–202 [Farrell 11th ed.]	84
IV Roscoe Pound, <i>Jurisprudence</i> 192-193 (1959)	6
Roscoe Pound, 27 HARVARD L. REV. 731, 722 (1914).....	67
Michael Rosen, <i>Dignity – Its History and Meaning</i> 4-5 (2012)	100
<i>Salmond on Jurisprudence</i> 305 (12 th ed. 1928)	66, 78
Thomas M. Scanlon, <i>What We Owe Each Other</i> 179, 183 (1998).	76
Robert J. Sharpe and Patricia I. McMahon, <i>The Persons Case – The Origins and Legacy of the Fight for Legal Personhood</i> (2007).	68
Richard Sorabji, <i>Animal Minds & Human Morals – The Origins of the Western Debate</i> 1-96 (1993).....	108
Sponsor’s Mem. NY Bill Jacket, 1996 S.B. 5207, Ch. 159.....	111
Cass R. Sunstein, <i>Sexual Orientation and the Constitution: A Note on the Relationship Between Due Process and Equal Protection</i> , 55 U. CHI. L.REV. 1161 (1988)	110
Laurence H. Tribe, <i>American Constitutional Law</i> 1440 (second ed. 1988)	106
Alexis de Toqueville, <i>Democracy in America</i> , Book II, Chapter 1, at 65 (Digireads.com Publishing 2007)	103
Margaret Turano, <i>Practice Commentaries</i> , N.Y. Est. Powers & Trusts Law 7-8.1 (2013).....	111
United States Declaration of Independence (July 4, 1776).....	103
<i>WHANGANUI IWI and THE CROWN</i> (August 30, 2012)	68
Steven M. Wise, “Hardly a Revolution – The Eligibility of Nonhuman Animals for Dignity-Rights in a Liberal Democracy,” 22 VERMONT L. REV. 807-810 (1998).	80
Steven M. Wise, <i>Rattling the Cage – Toward Legal Rights for Animals</i> 56-57 (Perseus Publishing 2000)	80
Constitutional Provisions	
N.Y. Const. § 35 (1777).....	7

N.Y. Const. Art. 1 § 11	102
N.Y. Const. Art. 1 § 4	95
N.Y. Const. Art. I, § 14.....	7

I. INTRODUCTION AND PROCEDURAL HISTORY

Chimpanzees are autonomous and self-determining beings capable of shouldering duties and responsibilities. They recall their past and anticipate their future, and when their future is incarceration, they suffer the pain of being unable to fulfill their life's goals or move about as they wish, much in the same way as human beings. In the last three years, Reba, Charlie, and Merlin, three of the seven of these extraordinarily intelligent, autonomous, self-determining beings imprisoned in the State of New York have died in captivity.

In December, 2013, the Petitioner, The Nonhuman Rights Project, Inc. ("NhRP") filed near-identical petitions for common law writs of habeas corpus and orders to show cause ("Petition") pursuant to New York Civil Practice Law and Rules ("CPLR") Article 70 in the Supreme Court in each of the three counties in which there was a surviving captive chimpanzee.¹ Specifically, a Petition was filed in the New York State Supreme Court: a) Fulton County on behalf of Tommy on December 2, 2013; b) Niagara County on behalf of Kiko on December 3, 2015; and c) Suffolk County on behalf of Hercules and Leo on December 5, 2013. Each Supreme Court refused to issue the requested order to show cause. (Petition for a Writ of Habeas Corpus and Order to Show Cause ("Habeas Petition") at ¶7). Each of the three intermediate appellate courts affirmed on a different ground and all without citing any of the previous decisions. (*Id.*).

The New York State Supreme Court Appellate Division, Third Judicial Department ("Third Department") affirmed the ruling of the Supreme Court, Fulton County, and held that, as chimpanzees are incapable of shouldering duties and responsibilities, they cannot be "persons" for the purpose of demanding a common law writ of habeas corpus. *People ex rel. Nonhuman Rights Project, Inc. v. Lavery*, 124 A.D.3d 148, 150-53 (3d Dept. 2014), *leave to appeal den.*, 26 N.Y.3d 902 (2015). The New York State Supreme Court Appellate Division, Fourth Judicial Department ("Fourth Department") affirmed the Niagara County Supreme Court's dismissal of the petition, finding, without reaching the issue of legal personhood, that the petition should have

¹ The NhRP asked the courts to issue orders to show cause pursuant to CPLR 7003(a), as the NhRP did not demand the production of the chimpanzees in court.

been dismissed on the ground that the NhRP did not seek Kiko's immediate release, but sought to have him placed in an appropriate primate sanctuary. *Nonhuman Rights Project, Inc., ex rel. Kiko v Presti*, 124 A.D.3d 1334 (4th Dept. 2015), *leave to appeal den.*, 126 A.D. 3d 1430 (4th Dept. 2015), *leave to appeal den.*, 2015 WL 5125507 (N.Y. Sept. 1, 2015).

The New York State Supreme Court Appellate Division, Second Judicial Department (“Second Department”) dismissed the NhRP’s timely appeal from the order of the Supreme Court, Suffolk County on procedural grounds. A true and complete copy of the Second Department’s order is attached to this Habeas Petition as Exhibit 8.

On March 19, 2015, the NhRP filed a near-identical second petition for a common law writ of habeas corpus and order to show cause on behalf of Hercules and Leo with this Court. On April 21, 2015, Justice Barbara Jaffe issued an amended order to show cause requiring the Respondents to appear before the Court to justify their imprisonment of Hercules and Leo. *See The Nonhuman Rights Project, Inc. v. Stanley Jr., M.D.*, 2015 WL 1804007 (Sup. 2015) *amended in part*, *The Nonhuman Rights Project, Inc. v. Stanley*, 2015 WL 1812988 (Sup. 2015). While Justice Jaffe ruled against the NhRP on the issue of personhood because she believed herself bound by the Third Department’s *Lavery* decision in which the court stated that chimpanzees are not “persons” for purposes of demanding a common law writ of habeas corpus because they are unable to shoulder duties and responsibilities, she suggested that the NhRP may ultimately prevail. *See The Nonhuman Rights Project ex rel. Hercules and Leo v. Stanley*, 16 N.Y.S.3d 898, 903 (Sup. Ct. 2015). The Justice rejected Respondents’ argument that, because the NhRP sought Hercules and Leo’s “transfer to a chimpanzee sanctuary, it has no legal recourse to habeas corpus,” as habeas corpus has been used to “secure [the] transfer of [a] mentally ill individual to another institution,” *id.* at 917 n.2, and refused to rely upon the Fourth Department’s ruling in *Presti*, 124 A.D.3d 1334. *See also Stanley*, 16 N.Y.S.3d at 901 (“The conditions under which Hercules and Leo are confined are not challenged by petitioner . . . and it advances no allegation that respondents are violating any federal, state or local laws by holding

Hercules and Leo.”). She also emphasized that “[t]he floodgates argument is not a cogent reason for denying relief.” *Id.* at 917 n.2.

The NhRP now brings this Habeas Petition, which is authorized by CPLR Article 70 and is not barred by res judicata or collateral estoppel, *infra*, seeking Tommy’s release from Respondents’ unlawful imprisonment, as the New York State Supreme Court Appellate Division, First Judicial Department (“First Department”), unlike the Fourth Department, acknowledges that the Great Writ may be used to transfer an imprisoned person from an unlawful place of custody to another lawful form of confinement. *See Stanley*, 16 N.Y.S.3d at 917 n.2 (citing *McGraw v. Wack*, 220 A.D.2d 291, 292 (1st Dept. 1995); *Matter of MHLS v. Wack*, 75 N.Y.2d 751 (1989)). Moreover, as shown below at Section III-D-3, this Court is not bound by the Third Department’s erroneous ruling that legal personhood is contingent upon the ability to shoulder duties and responsibilities, *infra*. However, if this Court determines it is so bound, the NhRP has attached affidavits from some of the world’s most renowned primatologists, including Jane Goodall, attesting to the fact that chimpanzees are indeed able to shoulder duties and responsibilities both within their own societies and within human/chimpanzee societies.

The New York “common-law writ of habeas corpus [is] a writ in behalf of liberty, and its purpose [is] to deliver a prisoner from unjust imprisonment and illegal and improper restraint.” *People ex rel. Pruyne v. Walts*, 122 N.Y. 238, 241-42 (1890). It “is not the creature of any statute . . . and exists as a part of the common law of the State.” *People ex rel. Tweed v. Liscomb*, 60 N.Y. 559, 565 (1875). *E.g.*, *People ex rel Lobenthal v. Koehler*, 129 A.D.2d 28, 30 (1st Dept. 1987) (“The ‘great writ’, although regulated procedurally by article 70 of the CPLR, is not a creature of statute, but a part of the common law of this State.”); *People ex rel. Patrick v. Frost*, 133 A.D. 179, 187-88 (2d Dept. 1909); *People ex rel. Jenkins v. Kuhne*, 57 Misc. 30, 40 (Sup. Ct. 1907) (“A writ of habeas corpus is a common law writ and not a statutory one. If every provision of statute respecting it were repealed, it would still exist and could be enforced.”), *aff’d*, 195 N.Y. 610 (1909). *See* Vincent Alexander, *Practice Commentaries, Article 70 (Habeas*

Corpus), *In General* (2013). Justice Jaffe agreed that the “writ ‘is a part of the common law of this State.’” *Stanley*, 16 N.Y.S.3d at 904 (citations omitted).

In New York, the common law writ of habeas corpus “lies in all cases of imprisonment by commitment, detention, confinement or restraint, for whatever cause, or under whatever pretence.” *People v. McLeod*, 3 Hill 635, 647 note j (N.Y. 1842). Its “scope and flexibility . . . its capacity to reach all manner of illegal detention - its ability to cut through barriers of form and procedural mazes-have always been emphasized and jealously guarded by courts and lawmakers.” *Harris v. Nelson*, 394 U.S. 286, 291 (1969). *See, e.g., People ex rel. Keitt v. McCann*, 18 N.Y.2d 257, 263 (1966).

The procedure for using the common law writ of habeas corpus is set forth in Article 70, CPLR 7001-7012.² However, “[t]he drafters of the CPLR made no attempt to specify the circumstances in which habeas corpus is a proper remedy. This was viewed as a matter of substantive law.” Vincent Alexander, *Practice Commentaries, Article 70 (Habeas Corpus)*, *In General* (2013). *E.g., Koehler*, 129 A.D.2d at 30.

“Legal person” has never been a synonym for “human being.” Instead, it designates Western law’s most fundamental category by identifying those entities capable of possessing a legal right. “Legal personhood” determines who counts, who lives, who dies, who is enslaved, and who is free. Chimpanzees such as Tommy, as autonomous and self-determining beings, should be recognized as common law “persons” in New York, entitled to the common law right to bodily liberty protected by the common law of habeas corpus.

Justice Jaffe noted that a chimpanzee’s right to invoke the writ of habeas corpus is best decided either by the legislature or the Court of Appeals, which is ““the state’s policy-making tribunal.”” *Stanley*, 16 N.Y.S.3d at 917 (citing *People v. Scott*, 79 N.Y.2d 474 (1992)).³ The Court in *Byrn v. New York City Health & Hosps. Corp.*, 31 N.Y.2d 194, 201 (1972), noted that

² CPLR 7001 provides in part: “the provisions of this article are applicable to common law or statutory writs of habeas corpus.”

³ The NhRP, of course, must begin its journey to the Court of Appeals by filing suit in the Supreme Court.

the issue of who is a person devolves on the legislature. But this is an observation about legal history, not jurisprudence. Nothing restricts the question of who is a person to the legislature, while the specific question of who is a common law person for the purpose of the common law writ of habeas corpus is *uniquely* a question for the courts of New York. This Justice Jaffe recognized by citing *Tweed*, 60 N.Y. at 566, for the notion that the writ of habeas corpus is “[s]afeguarded by the United States and New York Constitutions” and “cannot be abrogated, or its efficiency curtailed, by legislative action.” *Stanley*, 16 N.Y.S.3d at 904.

Nine prominent working primatologists from around the world have submitted affidavits (“Expert Affidavits”) demonstrating that chimpanzees such as Tommy possess the autonomy and self-determination that allows them to choose how they will live their emotionally, socially, and intellectually rich lives.⁴ Five of these primatologists have also submitted affidavits demonstrating that chimpanzees such as Tommy possess the capacity to shoulder duties and responsibilities (“Supplemental Affidavits”), as has Dr. Jane Goodall. Pursuant to a New York common law that keeps abreast of evolving standards of justice, morality, experience, and scientific discovery, New York common law liberty and equality mandate that such autonomous beings as chimpanzees be recognized as common law “persons” entitled to the common law right to bodily liberty protected by the common law of habeas corpus.

The New York common law of liberty begins, as does the common law of every American state, with the premise that autonomy is a supreme common law value that trumps even the State’s interest in life itself, and is therefore protected as a fundamental right that may be vindicated through a common law writ of habeas corpus.

⁴ The Expert Affidavits attached to this Habeas Petition are copies of the affidavits filed in the NhRP’s prior habeas corpus proceedings in the Fulton County and New York County Supreme Courts and are properly before the Court. CPLR 2101(e) (“copies, rather than originals, of all papers, including orders, affidavits and exhibits may be served or filed. Where it is required that the original be served or filed and the original is lost or withheld, the court may authorize a copy to be served or filed.”). See *Rechler Eq. B-I, LLC v. AKR Corp.*, 98 A.D.3d 496, 497 (2d Dept. 2012); see also *Brooke Bond India, Ltd. v. Gel Spice Co., Inc.*, 192 A.D.2d 458, 459-60 (1st Dept. 1993); *Bd. of Educ. of City Sch. Dist. of City of New York v. Iannelli Const. Co., Inc.*, 906 N.Y.S.2d 778 (Sup. Ct. 2009); *R.M. v. Dr. R.*, 855 N.Y.S.2d 865, 866 (Sup. Ct. 2008); *Matthews v. Gilleran*, 12 N.Y.S. 74, 78 (Gen. Term. 1890); *Barnard v. Heydrick*, 1866 WL 5268 (N.Y. Sup. Ct. 1866).

New York common law equality forbids discrimination founded upon unreasonable means or unjust ends, and protects Tommy's common law right to bodily liberty free from unjust discrimination. Tommy's common law classification as a "legal thing," rather than "legal person," rests upon the illegitimate end of enslaving him. Simultaneously, it classifies Tommy by the single trait of his being a chimpanzee, and then denies him the capacity to have a legal right. This discrimination is so fundamentally inequitable it violates basic common law equality. In fact, the New York legislature's recognition that some nonhuman animals, such as chimpanzees, are capable of having personhood rights by expressly allowing them to be trust "beneficiaries" pursuant to section 7-8.1 of the Estates, Powers and Trusts Law ("EPTL") affirms that personhood may apply to natural persons other than human beings.

The NhRP requests that this Court issue an Order to Show Cause pursuant to CPLR 7003(a), hold the required hearing, release Tommy from unlawful imprisonment, and then decide where best to place him. The NhRP strongly urges that Tommy be placed in the custody of Save the Chimps, a premier chimpanzee sanctuary located on 190 acres in Fort Pierce, Florida, where he will live out his life with numerous other chimpanzees in an environment as close to Africa as may be found in North America that allows him to freely exercise his autonomy.

This Court need **not** make a judicial determination at this time that Tommy is a "person" in order to issue the Order to Show Cause. Rather it should follow the laudatory procedure used by Justice Jaffe in *Stanley*. There Justice Jaffe properly assumed, without deciding, that Hercules and Leo were "persons" and "signed petitioner's order to show cause." *Stanley*, 16 N.Y.S.3d at 900; *see also id.* at 904-05 ("Petitioner invokes CPLR 7003(a). . . . That statute provides, . . . 'where the petitioner does not demand production of the person detained ... order the respondent to show cause why the person detained should not be released.' This proceeding thus commenced with the signing of an order to show cause."). This was the procedure used by Lord Mansfield in the famous common law habeas corpus case of *Somerset v. Stewart*, Lofft 1, 98 Eng. Rep. 499 (K.B. 1772), where the great Chief Justice assumed, without deciding, that the slave, James Somerset, could possibly possess the right to bodily liberty protected by the

common law of habeas corpus, and issued the writ that required the respondent to provide a legally sufficient reason for Somerset's detention, and by the Court for the Correction of Errors in *In re Tom*, 5 Johns. 365 (N.Y. 1810) (*per curiam*), which issued a writ of habeas corpus upon the petition of a slave who claimed he had been manumitted and was being unlawfully detained as property.⁵

The NhRP does not claim Respondents are violating any federal, state, or local animal welfare law in the manner in which they are detaining Tommy. The issue is not Tommy's welfare, any more than the issue is the welfare of a human detained against his will in a habeas corpus case. *See Stanley*, 16 N.Y.S.3d at 901 (recognizing that the Hercules and Leo habeas corpus case was not about "animal welfare"). The issue is whether Tommy, an autonomous and self-determining being, may be detained at all.⁶

In the following section, the NhRP sets out the facts that demonstrate chimpanzees such as Tommy possess the capacities for autonomy and self-determination sufficient for common law personhood and the possession of the common law right to bodily liberty protected by the common law of habeas corpus. These include possession of an autobiographical self, episodic memory, self-determination, self-consciousness, self-knowingness, self-agency, referential and intentional communication, empathy, a working memory, language, metacognition, numerosity, and material, social, and symbolic culture, their ability to plan, engage in mental time-travel, intentional action, sequential learning, mediational learning, mental state modeling, visual perspective-taking, cross-modal perception, the ability to understand cause-and-effect and the

⁵ New York's adoption of English common law as it existed prior to April 19, 1775, *Montgomery v. Daniels*, 338 N.Y.2d 41, 57 (1975); *Jones v. People*, 79 N.Y. 45, 48 (1879); N.Y. Const. Art. I, § 14; N.Y. Const. § 35 (1777), incorporated Lord Mansfield's common law habeas corpus ruling in *Somerset v. Stewart*. *See also Lemmon v. People*, 20 N.Y. 562 (1860).

⁶ Even if Respondents were violating animal welfare statutes, habeas corpus would still be available, as the courts have made clear that alternative remedies do not alter one's ability to bring the writ. *People v. Schildhaus*, 8 N.Y.2d 33, 36 (1960). *See also Williams v. Dir. of Long Island Home, Ltd.*, 37 A.D.2d 568, 570 (2d Dept. 1971) ("The fact that petitioner or the detainee may h[a]ve had an alternative avenue of relief by way of a statutory remedy in no way alters the right to broach the issue by way of habeas corpus."). Further, the remedy for a violation of an animal welfare statute does not necessarily entail the release of the animal, further rendering such a statute inapposite.

experiences of others, to imagine, imitate, engage in deferred imitation, emulate, to innovate and to use and make tools.

The NhRP also sets forth the facts that demonstrate that chimpanzees such as Tommy have the capacity to shoulder duties and responsibilities both within chimpanzee societies and human/chimpanzee societies. Among other abilities, chimpanzees understand and carry out duties and responsibilities while knowingly assuming obligations and then honoring them, behave in ways that seem both lawful and rule-governed, have moral inclinations and a level of moral agency, ostracize individuals who violate social norms, respond negatively to inequitable situations, have a social life that is cooperative and represents a purposeful and well-coordinated social system, routinely enter into contractual agreements, and show concern for others' welfare.⁷

II. STATEMENT OF FACTS

A. CHIMPANZEE AUTONOMY

1. INTRODUCTION

Chimpanzees, like humans, are “autonomous” (Affidavit of James King (“King Aff.”), at ¶11; Affidavit of Mathias Osvath (“Osvath Aff.”), at ¶11), which Professor James King defines as freely choosing, not acting on reflex, innate behavior, or through any conventional category of learning such as conditioning, discrimination learning, or concept formation, directing behavior based on internal cognitive processes. (King Aff. at ¶11). The simplest explanation for chimpanzees’ autonomous behavior is that it is based on similar human capacities. (*Id.* at ¶12). Chimpanzees possess the “self” that is integral to autonomy, being able to have goals and desires, intentionally act towards those goals, and understand whether they are satisfied. (Affidavit of Tetsuro Matsuzawa (“Matsuzawa Aff.”), at ¶15; Affidavit of James Anderson (“Anderson Aff.”) at ¶21).

⁷ Chimpanzees exhibit capacities for charity, fairness, reciprocity, compassion, empathy, peace-making, and impartial leadership, all of which lead to their sense of justice. John Berkman, “Just Chimpanzees? – A Thomistic Perspective of Ethics in a Nonhuman Species,” in *Beastly Morality – Animals as Ethical Agents* 195, 202-219 (Jonathan K. Crane, ed. Columbia University Press 2016)

2. SIMILARITIES BETWEEN CHIMPANZEES AND HUMANS: PHYSIOLOGY, DNA, AND COGNITION

Humans and chimpanzees share almost 99% of their DNA. (Matsuzawa Aff. at ¶10; Affidavit of Emily Sue Savage-Rumbaugh (“Savage-Rumbaugh Aff.”), at ¶11). Chimpanzees are more closely related to human beings than to gorillas. (Affidavit of William McGrew (“McGrew Aff.”), ¶11; King Aff. at ¶12; Osvath Aff. at ¶11). Both the brains and behavior of humans and chimpanzees are plastic, flexible, and heavily dependent upon learning. (Savage-Rumbaugh Aff. at ¶11a). Both possess the brain asymmetry associated with sophisticated communication and language-like capacities. (Matsuzawa Aff. at ¶12). Both share similar brain circuits involved in language and communication (Matsuzawa Aff. at ¶10), and have evolved the large frontal lobes involved in insight and foreplanning. (*Id.*). Broca’s Area and Wernicke’s Area, which enable human symbolic communication, have corresponding areas in chimpanzee brains. (Savage-Rumbaugh Aff. at ¶13).

Both share cell types involved in higher-order thinking, and functional characteristics related to sense of self. (Matsuzawa Aff. at ¶10; Affidavit of Jennifer M.B. Fugate (“Fugate Aff.”), at ¶14). Both brains possess spindle cells (or von Economo neurons) in the anterior cingulate cortex, involved in emotional learning, the processing of complex social information, decision-making, awareness, and, in humans, speech initiation. (Matsuzawa Aff. at ¶14). This strongly suggests they share many higher-order brain functions. (*Id.*). The chimpanzee brain is activated in the same areas and networks as the human brain during activities associated with planning, foresight, episodic memory, and memories of autobiographical events. (Osvath Aff. at ¶12, ¶¶15-16).

That their brains develop and mature in similar ways indicates that humans and chimpanzees pass through similar cognitive developmental stages. (Matsuzawa Aff. at ¶10). Brain developmental delay, which plays a role in the emergence of complex cognitive abilities, such as self-awareness, creativity, foreplanning, working memory, decision-making and social interaction, is a key feature of both chimpanzee and human prefrontal cortex brain evolution.

(Matsuzawa Aff. at ¶11; Savage-Rumbaugh Aff. at ¶11a, ¶12). Chimpanzee development of the use and understanding of sign language, along with their natural communicative gestures and vocalizations, parallels the development of language in children; this points to deep similarities in the cognitive processes that underlie communication in both species. (Affidavit of Mary Lee Jensvold (“Jensvold Aff”) Aff. at ¶9). Both develop increasing levels of consciousness, awareness, and self-understanding throughout adulthood, through culture and learning. (Savage-Rumbaugh Aff. at ¶11d).

Numerous parallels in the way their communication skills develop suggest a similar unfolding of cognitive processes and an underlying neurobiological continuity. (Jensvold Aff. at ¶10). The foundational stages of communication suggest striking similarities between human and chimpanzee cognition. (*Id.* at ¶¶10-11). Chimpanzees show some of the same early developmental tendencies and changes in their communication skills as children. (*Id.* at ¶10). Children and language-trained chimpanzees begin communicating using natural gestures before moving to more frequent use of symbols. (*Id.*). In both, the ratio of symbol to gestures increases with age, with the overwhelming majority of gestures serving a communicative purpose. (*Id.*). Both show a primacy of natural gestures in development over learning a symbolic system of communication. (*Id.* at ¶¶9-10).

3. SIMILARITIES BETWEEN CHIMPANZEES AND HUMANS: BEHAVIOR, MENTAL AND EMOTIONAL PROCESSES

The close evolutionary relationship between chimpanzees (and the closely related bonobos) and humans is evident not only in terms of physical structure but also in behaviour, emotional and mental processes. (Supplemental Affidavit of James Anderson (“Anderson Supp. Aff.”) at ¶14). Chimpanzees were the first nonhuman species shown to be capable of mirror-mediated self-recognition. (Anderson Supp. Aff. at ¶14). The developmental emergence of self-recognition in chimpanzees is similar to that in humans. (*Id.*). Furthermore, as in humans, self-recognition in adult chimpanzees is highly stable across time, with some decline in old age. (*Id.*).

a. Self-recognition and self-awareness

Chimpanzees and bonobos demonstrate they can step outside of themselves and look upon themselves apart from the actions in which they are engaging. (Supplemental Affidavit of Emily Sue Savage-Rumbaugh (“Savage-Rumbaugh Supp. Aff.”), at ¶16). They recognize their shadows; they recognize themselves in mirrors; they apply bodily decorations, they intend beyond the immediacy of the current social situations in which they are engaged; they signal intent by means other than through the use of incipient actions; and they prevent their offspring from engaging in behaviors that could be dangerous. (*Id.*).

That chimpanzees recognize themselves in mirrors (*id.* at ¶16) is a marker of self-awareness. (Anderson Aff. at ¶12; Savage-Rumbaugh Aff. at ¶16). They recognize themselves on television, in videos and photographs, and examine the interior of their mouths with flashlights. (Savage-Rumbaugh Aff. at ¶16). They recognize pictures of themselves, and others, when they were very young. (*Id.*). Self-recognition requires that one hold a mental representation of what one looks like from another perspective. (Anderson Aff. at ¶12). This capacity to reflect upon one’s behavior allows one to become the object of one’s own thought. (Savage-Rumbaugh Aff. at ¶16). Chimpanzees show such capacities that stem from self-awareness, as self-monitoring, self-reflection, and metacognition. (*Id.* at ¶15). They are aware of what they know and do not know. (*Id.*). “Self-agency,” a fundamental component of autonomy, allows one to distinguish one’s own actions and effects from external events. (Matsuzawa Aff. at ¶16). Both chimpanzees and humans share the fundamental cognitive processes underlying the sense of being an independent agent. (Matsuzawa Aff. at ¶16; Savage-Rumbaugh Aff. at ¶11e).

b. Self-control and episodic memory

Similar brain structures of humans and chimpanzees support the behavioral and cognitive evidence for both human and chimpanzee autobiographical selves. (Osvath Aff. at ¶15). Both are aware of their past and envision their future. (*Id.* at ¶16). Both share the sophisticated cognitive capacity necessary for the “mental time travel” the episodic system enables. (Osvath Aff. at ¶10, ¶12, ¶15; Jensvold Aff. at ¶10). Without understanding one is an individual who exists through

time, one cannot recollect past events in one's life and plan future events. (Osvath Aff. at ¶12). Autonoetic, or self-knowing, consciousness allows an autobiographical sense of a self with a past and future. (*Id.*).

Chimpanzees delay a strong current drive for a better future reward, generalize a novel tool for future use, and select objects for a much-delayed future task. (*Id.* at ¶14). They can remember the “what, where and when” of events years later. (*Id.* at ¶12). They can prepare themselves for such a future action as tool use a day in advance. (*Id.*). Wild chimpanzees demonstrate such long-term planning for tool use as transporting stones to locations to be later used later as hammers to crack nuts; a captive chimpanzee routinely collected, stockpiled, and concealed stones he would later hurl at visitors when he was agitated. (Osvath Aff. at ¶13; Anderson Aff. at ¶16). This ability to mentally construct a new situation to alter the future (in this case the behaviors of human zoo visitors) and plan for events where one is in a different psychological state signals the presence of an episodic system. (Osvath Aff. at ¶13).

Autonomous individuals possess a self-control that depends upon the episodic system. (*Id.* at ¶14). Chimpanzees, like humans, delay gratification for a future reward, indeed possess a high level of self-control under many circumstances. (*Id.*). Chimpanzees plan for future exchanges with humans. (*Id.*). They may use self-distraction (playing with toys) to cope with the impulse of grabbing immediate candies instead of waiting for more. (*Id.*).

Perceptual simulations enabled by episodic memory bring the future into the present by braking current drives in favor of delayed rewards, and is available only those who a sufficiently sophisticated sense of self and autobiographical memory. (*Id.*). Chimpanzees can disregard a small piece of food in favor of a tool that will allow them to obtain a larger piece of food later. (*Id.*). They can select a tool they have never seen, guess its function, and use it appropriately. (*Id.*). This would be impossible without being able to mentally represent the future event. (*Id.*).

Chimpanzees re-experience and anticipate pains and pleasures. (*Id.* at ¶16). Like humans, they experience pain around an anticipated future event. (*Id.*). Confining someone in a prison or cage loses its power as punishment if the individual had no self-concept, as each moment will be

a new with no conscious relation to any other. (*Id.*). As chimpanzees conceive a personal past and future, and suffer the pain of being unable to fulfill their goals or move about as they wish, like humans they experience the pain of anticipating a never-ending situation. (*Id.*).

c. Language, communication, and intention

Language, a volitional process that involves creating intentional sounds for the purpose of communication, reflects autonomous thinking and behavior. (Matsuzawa Aff. at ¶13). Chimpanzees exhibit referential and intentional communication. (Anderson Aff. at ¶15). They produce sounds to capture the attention of an inattentive audience. (*Id.*). The development of their use and understanding of sign language, along with their natural communicative gestures and vocalizations, parallels the development of language in children, which points to deep similarities in the cognitive processes that underlie communication in both. (Jensvold Aff. at ¶9). They point and vocalize when they want another to notice something and adjust their gesturing to insure they are noticed. (*Id.*). They intentionally and purposefully inform naïve chimpanzees about something. (*Id.*).

Chimpanzees demonstrate purposeful communication, conversation, understanding of symbols, perspective-taking, imagination, and humor. (Jensvold Aff. at ¶9; Savage-Rumbaugh Aff. at ¶¶14-15). They learn, and remember for decades, symbols for hundreds of items, events and locations; they learn new symbols just by observing others using them. (Savage-Rumbaugh Aff. at ¶20). They master syntax. (*Id.*). They understand such “if/then” clauses as, “if you share your cereal with Sherman, you can have some more.” (*Id.* at ¶21). They announce important social events, what they are about to do, where they are going, what assistance they want from others, and how they feel. (*Id.* at ¶25). They announce what they are going to retrieve from an array of objects they’ve seen in another room. (*Id.*). They recount what happened yesterday. (*Id.* at ¶27).

There is no essential difference between what words chimpanzees learn mean to them, and what words humans learn mean to them. (Savage-Rumbaugh Aff. at ¶20). They understand there is no one-to-one relationship between utterances and events, that there are infinite linguistic

ways of communicating the same or similar things. (*Id.* at ¶22). They use symbols to comment about other individuals as well as about past and future events. (Jensvold Aff. at ¶10). They purposefully create declarative sentences and combine gestures with pointing to refer to objects. (*Id.*).

Language-trained chimpanzees spontaneously use language to communicate with each other. (Jensvold Aff. at ¶12; Savage-Rumbaugh Aff. at ¶15). Those who understand spoken English answer “yes/no” questions about their thoughts, plans, feelings, intentions, dislikes, and likes. (Savage-Rumbaugh Aff. at ¶15). They answer questions about their companions’ likes and dislikes and tell researchers what other apes want. (*Id.*). They use symbols to express themselves and to state what they are going to do, in advance of acting, then carry out their action. (*Id.* at ¶17). An example is statements made by two language-trained chimpanzees trained with abstract computer symbols, Sherman and Austin, who told each other the foods they intended to share, and told experimenters which items they were going to give to them. (*Id.*). With the emergence of the ability to state their intentions, Sherman and Austin revealed that, not only did they recognize and understand differential knowledge states between themselves, but language allows beings to bring their different knowledge states into accord with their imminent intentions and to coordinate their actions. (*Id.* at ¶¶18-19).

Sherman and Austin would state “Go outdoors,” then head for the door, or “Apple refrigerator,” then take an apple from the refrigerator (rather than any of the other foods in the refrigerator). (*Id.* at ¶18). To produce statements about intended actions for the purpose of coordinating future actions with others, one must be able to form a thought and hold it until agreement is reached between two parties. (*Id.* at ¶20).

The chimpanzee Loulis was not raised with humans and was not taught American Sign Language (“ASL”) by humans. (Jensvold Aff. at ¶12). Nor did humans use ASL in his presence. (*Id.*). But he was the adopted son of Washoe, a signing chimpanzee. Loulis acquired signs from observing Washoe and other signing chimpanzees, as well as when Washoe molded his hands into the appropriate signs. (*Id.*). Not only did Washoe’s behavior toward Loulis show she was

aware of his shortcomings in the use of signs as a communication skill, but she took steps to change that situation. (*Id.*).

True communication is based on conversational interaction in which the participants takes turns communicating in a give-and-take manner and respond appropriately to the other's communicative actions. (*Id.* at ¶11). When a conversation becomes confusing, participants make such contingent adjustments as offering a revised or alternative utterance/gesture or repeating a gesture or sign to continue the conversation. (*Id.*). ASL-using chimpanzees demonstrate contingent communication with humans at the same level as young human children. (*Id.*).

When a human conversation has broken down, they repeat their utterance and add information. (*Id.*). Chimpanzees conversing in sign language with humans respond in the same way, reiterating, adjusting, and shifting their signs to create conversationally appropriate rejoinders; their reactions to and interactions with a conversational partner resemble patterns of conversation found in studies of human children. (*Id.*). When their request is satisfied, they cease signing it. (*Id.*). When their request is misunderstood, refused or not acknowledged, they repeat and revise their signing until they get a satisfactory response. (*Id.*). As in humans, this pattern of contingency in conversation demonstrates volitional and purposeful communication and thought. (*Id.*).

Chimpanzees understand that conversation involves turn-taking and mutual attention and will try to alter the attentional state of the human. (*Id.*). If they wish to communicate with a human whose back is turned to them they will make attention-getting sounds. (*Id.*). If the human is turned to them, they switch to conversational sign language with few sounds. (*Id.*).

Both language-using and wild chimpanzees understand conversational give-and-take and adjust their communication to the attentional state of the other participant, using visual gestures towards an attentive partner and tactile and auditory gestures more often toward inattentive partners. If the partner does not respond, they repeat the gesture. (*Id.*). Even wild and captive chimpanzees untutored in ASL string together multiple gestures to create gesture sequences, and

combine gestures into long series, within which gestures may overlap, interspersed with bouts of response waiting or be exchanged back and forth between individuals. (*Id.*).

When Sherman and Austin communicated, they paid close attention to the other's visual regard. (Savage-Rumbaugh Aff. at ¶22). If Austin was looking away when Sherman selected a symbol, Sherman would wait until Austin looked back. Then he would point to the symbol he used. If Austin hesitated, Sherman would point to the food the symbol symbolized. If Austin's attention wandered further, Sherman would turn Austin's head toward the keyboard. If Sherman was not attending to Austin's request, Austin would gaze at the symbol until Sherman took note. (*Id.*). Both recognized the speaker had to monitor the listener, watch what he was doing, make judgments about his state of comprehension, and decide how to proceed with conversational repair. (*Id.*).

In a manner similar to two-through-seven year olds, sign-language trained chimpanzees and chimpanzees trained to use arbitrary computer symbols to communicate, sign among themselves and exhibit a telltale sign of volitional use of language, signing to themselves or "private speech." (Jensvold Aff. at ¶12; Savage-Rumbaugh Aff. at ¶14). Private speech has many functions, including self-guidance, self-regulation of behavior, planning, pacing, and monitoring skill, and is a part of normal development of communication. (Jensvold Aff. at ¶13). Children use private speech during creative and imaginative play, often talking to themselves when playing imaginative and pretend games. (*Id.* at ¶14). The more frequently children engage in private speech, the more creative, flexible, and original thought they display. (*Id.*).

d. Imagination and humor

Imagination is a key component of mental representation, metacognition, and the ability to mentally create other realities. (*Id.* at ¶15). Both captive and wild chimpanzees engage in at least six forms of imaginary play that are similar to the imaginary play of children ages two through six. (*Id.*). These include Animation, Substitution, and imaginary private signing (*Id.*). Animation is pretending that an inanimate object is alive, such as talking to a teddy bear; substitution is pretending an object has a new identity, such as placing a block on the head as a

hat. (*Id.*). In imaginary private signing, chimpanzees transform a sign or its referent to a different meaning, whether it is present or not. (*Id.* at ¶14). An example is placing a wooden block on one's head and referring to it as a hat (*Id.*). Chimpanzees use imagination to engage in pretend-aggression. (Savage-Rumbaugh Aff. at ¶31). Sherman pretended that a King Kong doll was biting his fingers and toes and would pretend to be in pain, when he poked a needle in his skin and out the other side, being careful to just pierce the thick outer layer of skin. (*Id.*).

Deception and imaginary play require behaviors directed toward something that is not there and often involve modeling mental states. (Jensvold Aff. at ¶16). They are closely related and by age three chimpanzees engage in both. (*Id.* at ¶15; Savage-Rumbaugh Aff. at ¶16). For example, a chimpanzee who cached stones to later throw at zoo visitors engaged in deception by constructing hiding places for his stone caches, then inhibiting those aggressive displays that signal upcoming throws. (Osvath Aff. at ¶13).

Chimpanzees display a sense of humor, and laugh under many of the same circumstances in which humans laugh. (Jensvold Aff. at ¶17).

Together these findings provide evidence for cognitive similarities between humans and chimpanzees in the domains of mental representation, intentionality, imagination, and mental state modeling – all fundamental components of autonomy. (*Id.*).

e. Theory of mind

Chimpanzees are attuned to the experiences, visual perspectives, knowledge states, emotional expressions and states of others. (Anderson Aff. at ¶15; Fugate Aff. at ¶16; Matsuzawa Aff. at ¶¶17-18). They possess mirror neurons, which allow them to share and relate to another's emotional state. (Fugate Aff. at ¶14). These specialized cells respond to actions performed by oneself, but also when one watches the same action performed by another, which forms the basis for empathy, the ability to put oneself in another's situation. (Fugate Aff. at ¶14; Matsuzawa Aff. at ¶17). They have some theory of mind; they know they have minds, they know humans have minds, thoughts, intentions, feelings, needs, desires, and intentions, and they know these other minds and state of knowledge differ from what their minds know. (Savage-

Rumbaugh Aff. at ¶32). They know when another chimpanzee does not know something and inform the other about facts he does not know. (*Id.*).

Chimpanzees observing another trying to complete a task anticipate their intentions. (Matsuzawa Aff. at ¶17). They know what others can and cannot see. (*Id.*). They know when another's behavior is accidental or intentional. (*Id.*). They use their knowledge of others' perceptions to deceive them. (*Id.*). In situations where two chimpanzees are competing for hidden food, they employ strategies and counter-strategies to throw each other off the trail and obtain the food for themselves. (*Id.*). When placed in a situation where they must compete for food placed at various locations around visual barriers, subordinate chimpanzees only approach food they infer dominant chimpanzees cannot see. (Anderson Aff. at ¶15). They can take the visual perspective of a chimpanzee competitor, and understand that what they see is not the same thing their competitor sees. (*Id.*). When ASL-trained and wild chimpanzees adjust their gestures and gestural sequences to the attention state of the individual they are trying to communicate with, using visual gestures towards an attentive partner and tactile and auditory gestures more often toward inattentive partners. If the partner does not respond, they repeat the gesture, demonstrating visual perspective-taking and mental state modeling. (Jensvold Aff. at ¶11).

f. Empathy

The capacity for self-recognition has been linked to empathy, which is the identifying with, and understanding of, another's situation, feelings and motives. Several lines of evidence indicate chimpanzees possess highly developed empathic abilities. (Anderson Aff. at ¶13; Anderson Supp. Aff. at ¶15).

When tested in similar experimental situations using video stimuli, chimpanzees show contagious yawning in much the same way as humans do. (Anderson Aff. at ¶18; Matsuzawa Aff. at ¶18). That chimpanzees yawn more frequently in response to seeing familiar individuals yawning compared to unfamiliar others supports a link between contagious yawning and empathy. (*Id.*). Chimpanzees shown videos of other chimpanzees yawning or displaying open-mouth facial expressions that were not yawns showed higher levels of yawning in response to the

yawn videos, but not to the open-mouth displays. (Matsuzawa Aff. at ¶18). These findings are similar to contagious yawning effects observed in humans, and are based on the capacity for empathy. (*Id.*).

In the wild and in captivity, chimpanzees engage in sophisticated tactical deception that requires attributing mental states and motives to others. (Anderson Aff. at ¶14). This is shown when individuals console an unrelated victim of aggression by a third-party. (*Id.*). They show concern for others in risky situations. When a chimpanzee group crosses a road, the more capable adult males will investigate the situation before more vulnerable group-members cross, and take up positions at the front and rear of the procession. (*Id.*). Knowledge of one's own and others' capabilities is probably at the origin of some instances of division of labor. (*Id.*). This includes sex differences in cooperative hunting for live prey, and crop-raiding; these activities often lead to individuals in possession of food sharing it with those who do not. (*Id.*).

g. Awareness of death

One consequence of self-awareness may be awareness of death. Chimpanzees demonstrate compassion, bereavement-induced depression, and an understanding of the distinction between living and non-living, in a manner similar to humans when a close relative passes away, which strongly suggests that chimpanzees, like humans, feel grief and compassion when dealing with mortality. (Anderson Aff. at ¶19).

h. Tool-making and chimpanzee culture

An important indicator of intelligence is the capacity for tool-making and use. (McGrew Aff. at ¶¶14-15). Tool-making implies complex problem-solving skills and evidences understanding of means-ends relations and causation, for it requires making choices, often in a specific sequence, towards a goal, which is a key aspect of intentional action. (McGrew Aff. at ¶15; Fugate Aff. at 17).

Wild chimpanzees make and use tools of vegetation and stone for hunting, gathering, fighting, play, communication, courtship, hygiene, and socializing. (McGrew Aff. at ¶15). Chimpanzees make and use complex tools that require them to utilize two or more objects

towards a goal. (*Id.* at ¶16). They make compound tools by combining two or more components into a single unit (*Id.*). They make adjustments to attain their goal. (*Id.*).

Chimpanzees use “tool sets,” two or more tools in an obligate sequence to achieve a goal, such as a set of five objects – pounder, perforator, enlarger, collector, and swab – to obtain honey. (*Id.* at ¶17). Such sophisticated tool-use involves choosing appropriate objects in a complex sequence to obtain a goal they keep in mind throughout the process. (*Id.*). This sequencing and mental representation is a hallmark of intentionality and self-regulation. (*Id.*).

Chimpanzees have taken tool-making and use into the cultural realm (*Id.*). Culture is normative (represents something most individuals do), collective (characteristic of a group or community), and socially-learned behavior (learned by watching others). (*Id.* at ¶18). It is transmitted by social and observational learning (learning by watching others), which characterizes a group or population. (*Id.*). Culture is based on several high-level cognitive capacities, including imitation (directly mimicking bodily actions), emulation (learning the results of another’s actions, then achieving those results in another way), and innovation (producing novel ways to do things and combining known elements in new ways), all of which chimpanzees share. (*Id.*). Under natural conditions, different chimpanzee cultures construct different rule-based social structures which they pass from one generation to the next. (McGrew Aff. at ¶19; Savage-Rumbaugh Aff. at ¶11f).

Three general cultural domains are found in humans and chimpanzees: 1) material culture, the use of one or more physical objects as a means to achieve an end, 2) social culture, behaviors that allow individuals to develop and benefit from social living, and 3) symbolic culture, communicative gestures and vocalizations which are arbitrarily, that is symbolically, associated with intentions and behaviors. (*Id.*).

Each wild chimpanzee cultural group makes and uses a unique “tool kit,” which indicates that chimpanzees form mental representations of a sequence of acts aimed at achieving a goal. (McGrew Aff. at ¶20; Anderson Aff. at ¶16). A chimpanzee tool kit is a unique set of about twenty different tools, often used in a specific sequence for foraging and processing food,

making comfortable and secure sleeping nests in trees, and personal hygiene and comfort. (*Id.*). These “tool kits” vary across groups, are passed on by observing others using them, and found from savannah to rainforest. (McGrew Aff. at ¶20).

Tool-making is neither genetically determined, fixed, “hard-wired,” nor simple reflex. (*Id.*). It depends on the mental abilities that underlie human culture, learning from others and deciding how to do things. Each chimpanzee group develops its own culture through its own behavioural choices. (*Id.*). At least forty chimpanzee cultures across Africa use combinations of over 65 identifiable behaviors. (*Id.*).

Organic chimpanzee tool kits are not preserved in the archaeological record. But chimpanzee, like human, stone tools are. (*Id.* at ¶21). The foraging tool kits of some chimpanzee populations are indistinguishable in complexity from the tools kits of some of the simplest human material cultures, such as Tasmanian aborigines, and the oldest known human artefacts, such as the East African Oldowan Industry. (*Id.*). Chimpanzee stone artefacts excavated in West Africa demonstrate there was once a chimpanzee “Stone Age,” just as there was a human “Stone Age,” that is at least 4,300 years old. This predates settled farming villages and Iron Age technology in West Africa. (*Id.*). In one chimpanzee population, chimpanzee tool-making culture has been passed down for 225 generations. (*Id.*). With respect to social culture, chimpanzees pass widely variable social displays and social customs from one generation to the next. (*Id.* at ¶22; for examples, see *id.*). Wild chimpanzees demonstrate symbolic element key to human. (*Id.* at ¶23). Thus, in one chimpanzee group, arbitrary symbolic gestures communicate desire to have sex, in another group an entirely different symbolic gesture expresses the same sentiment. (*Id.*).

i. Imitation and emulation

Human and chimpanzee cultures are underwritten by a common set of mental abilities. (*Id.* at ¶24). The most important are imitation and emulation. Learning by observation is key to both (*Id.*). Chimpanzees copy methods used by others to manipulate objects and use both direct imitation and emulation, depending on the circumstance. (*Id.*). Imitation, which involves copying bodily actions, is a hallmark of self-awareness, as it suggests the individual has a sense of his

own body and how it corresponds to another's body, and can manipulate his body in accordance with the other's actions. (*Id.*). Chimpanzees precisely mimic the actions of others, even the correct sequence of actions to achieve a goal. (McGrew Aff. at ¶24; Anderson Aff. ¶17).

Chimpanzee and human infants selectively imitate facial expressions. (Anderson Aff. at ¶17). Chimpanzees directly imitate another's way to achieve a goal when they have not figured out their own way to achieve that same goal. (McGrew Aff. at ¶24; Anderson Aff. ¶17). When chimpanzees have the skills to complete a task they tend to emulate, not imitate. (McGrew Aff. at ¶24). These findings demonstrate that chimpanzees make choices about whether to directly copy someone else's actions based on whether they think they can figure out how to do the task themselves. (*Id.*).

Chimpanzees know when they are being imitated, and respond as human toddlers do. (*Id.*). Both "test out" the behavior of the imitator by making repetitive actions and looking to see if the imitator follows. (*Id.*). This is similar to how chimpanzees and toddlers test whether an image in a mirror is herself. (*Id.*). Called "contingency checking," this is another hallmark of self-awareness. (*Id.*). Chimpanzees engage in "deferred imitation," copying actions they have seen in the past. (McGrew Aff. at ¶24; Anderson Aff. at ¶17). Deferred imitation relies upon more sophisticated capacities than direct imitation, as chimpanzees must remember the actions of another, while replicating them in real time. (McGrew Aff. at ¶24).

These capacities for imitation and emulation are necessary for "cumulative cultural evolution." (McGrew Aff. at ¶25; Anderson Aff. at ¶17). This cultural capacity, found in humans and chimpanzees, involves the ability to build upon previous customs. (McGrew Aff. at ¶25). Chimpanzees, like humans, tend to be social conformists, which allows them to maintain customs within groups. (*Id.*). The evidence suggests a similarity between the mental capacities of humans and chimpanzees in the areas of observational learning, imitation (and thus self-awareness), decision-making, memory and innovation. (*Id.*).

4. SIMILARITIES BETWEEN HUMANS AND CHIMPANZEES: NUMEROSITY, SEQUENTIAL LEARNING AND MEMORY

Numerosity, the ability to understand numbers as a sequence of quantities, requires both sophisticated working memory (in order to keep numbers in mind), and conceptual understanding of a sequence. (Matsuzawa Aff. at ¶19). This is closely related to “mental time travel” and planning the right sequence of steps towards a goal, two critical components of autonomy. (*Id.*). Chimpanzees have a conscious awareness of numerosity, which gives them a grasp of numbers to twelve or more without actually counting. (Savage-Rumbaugh Supp. Aff. at ¶19n). Not only do chimpanzees excel at understanding sequences of numbers, they understand that Arabic symbols (“2”, “5”, etc.) represent discrete quantities. (Matsuzawa Aff. at ¶19).

Sequential learning is the ability to encode and represent the order of discrete items occurring in a sequence. (*Id.*). It is critical for human speech and language processing, learning action sequences, and any task that requires placing items in an ordered sequence. (*Id.*). Chimpanzees count, sum arrays of real objects or Arabic numerals, and display ordinality and transitivity (if $A = B$ and $B = C$, then $A = C$) when engaged in numerical tasks, demonstrating they understand the ordinal nature of numbers. (*Id.*). Chimpanzees understand proportions (e.g., $1/2$, $3/4$, etc.). (*Id.*). They can name the number, color, and type of object shown on a screen (*Id.*). They use a touch screen to count from 0 to 9 in sequence. (*Id.*). They understand the concept of zero, using it appropriately in ordinal context. (*Id.*). They count to twenty-one. (Savage-Rumbaugh Aff. at ¶29). They display “indicating acts” (pointing, touching, rearranging) similar to what human children display when counting a sum. (Matsuzawa Aff. at ¶19). Both chimpanzees and children touch each item when counting an array of items, suggesting further similarity in the way both conceptualize numbers and sequences. (*Id.* at ¶20).

Chimpanzees have excellent working, or short-term, memory. (*Id.*). Working memory is the ability to temporarily store, manipulate, and recall items (numbers, objects, names, etc.). (*Id.*). It deals with how good someone is at keeping several items in mind simultaneously. (*Id.*). Working memory tasks require monitoring (manipulation of information or behaviors) as part of

completing goal-directed actions in the setting of interfering processes and distractions. (*Id.*). The cognitive processes needed to achieve this include attention and executive control (reasoning, planning and execution). (*Id.*). When chimpanzees are shown the numerals 1-9 spread randomly across a computer screen (*id.*), the numbers appearing for just 210, 430, and 650 milliseconds, then replaced by white squares, they touch them in the correct order (1-9). (*Id.*). In another version of the task, as soon as chimpanzees touched the number 1, the remaining numbers were immediately masked by white squares. (*Id.*). They had to remember the location of each concealed number and touch them in the correct order. (*Id.*). The performance of a number of the chimpanzees on these seemingly impossible memory tasks was not only accurate, but better than human adults. (*Id.*). Chimpanzees have an extraordinary working memory capability for numerical recollection, better than adult humans, which underlies a number of mental skills related to mental representation, attention, and sequencing. (*Id.*).⁸

Chimpanzees are competent at “cross-modal perceptions.” They obtain information in one modality such as vision or hearing, and internally translate it to information in another modality. (Savage-Rumbaugh Aff. at ¶26). They match an audio or video vocalization recording of a familiar chimpanzee or human to her photograph. (Fugate Aff. at ¶16). They translate symbolically encoded information and into any non-symbolic mode. (Savage-Rumbaugh Aff. at ¶26). When shown an object’s picture, they retrieve it by touch, and retrieve a correct object by touch when shown its symbol. (*Id.*).

B. CHIMPANZEES SHOULDER DUTIES AND RESPONSIBILITIES BOTH WITHIN CHIMPANZEE SOCIETIES AND WITHIN CHIMPANZEE/HUMAN SOCIETIES.

1. INTRODUCTION

Chimpanzees shoulder well-defined duties and responsibilities both within their own societies and within human/chimpanzee societies. (Goodall Aff. at ¶14-¶15; Supplemental Affidavit of William McGrew (“McGrew Supp. Aff.”), at ¶13; Supplemental Affidavit of

⁸ These remarkable similarities between humans and chimpanzees are not limited to autonomy, but extend to personality and emotion. (King Aff. at ¶¶12-28).

Christophe Boesch (“Boesch Supp. Aff.”), at ¶14; Supplemental Affidavit of Mary Lee Jensvold (“Jensvold Supp. Aff.”), at ¶10; Savage-Rumbaugh Supp. Aff. at ¶¶13-14; Anderson Supp. Aff. at ¶16, ¶24).⁹ Chimpanzees understand and carry out duties and responsibilities while knowingly assuming obligations then honouring them. (McGrew Supp. Aff. at ¶27; Savage-Rumbaugh Supp. Aff. at ¶¶13-14, ¶19d-e). Chimpanzees have duties to each other and behave in ways that seem both lawful and rule-governed. (McGrew Supp. Aff. at ¶23; Goodall Aff. at ¶23; Boesch Supp. Aff. at ¶20; Savage-Rumbaugh Supp. Aff. at ¶19, ¶¶22-23; Jensvold Supp. Aff. at ¶15; Anderson Supp. Aff. at ¶15). Both ape and human adult members of chimpanzee/human societies constantly behave in morally responsible ways as they understand them. (Savage-Rumbaugh Supp. Aff. at ¶14, ¶19r, ¶29; Anderson Supp. Aff. at ¶20). Chimpanzees have moral inclinations and a level of moral agency. (McGrew Aff. at ¶26). They ostracize individuals who violate social norms. (*Id.*). They respond negatively to inequitable situations, e.g. when offered lower rewards than companions receiving higher ones, for the same task. (*Id.*). When given a chance to play such economic games as the Ultimatum Game, they spontaneously make fair offers, even when not obliged to do so. (*Id.*).

Chimpanzee social life is cooperative and represents a purposeful and well-coordinated social system. (*Id.* at ¶27). They engage in collaborative hunting, in which hunters adopt different roles that increase the chances of success. (*Id.*). They share meat from prey. (*Id.*). Males cooperate in territorial defense, and engage in risky boundary patrolling. (*Id.*; Anderson Supp. Aff. at ¶16).

Chimpanzees and bonobos who acquire language are often asked to carry out duties and responsibilities, and succeed. (Savage-Rumbaugh Supp. Aff. at ¶13). They routinely enter into contractual agreements. (*Id.* at ¶13, ¶19, ¶25). They show concern for others’ welfare, and they

⁹ Among its various definitions for ‘duty’, the *Oxford English Dictionary* gives “behaviour due to a superior”, “deference”, “obligation”, and “the binding force of what is morally right”. Similarly, for ‘responsibility’, the *OED* gives “a charge, trust, or duty, for which one is responsible.” (McGrew Supp. Aff. at ¶12). It defines ‘responsible’ as “accountable for one’s actions”, “having authority or control”, and “capable of rational conduct ... of fulfilling an obligation or trust.” (*Id.*).

have expectations about appropriate behaviour in a range of situations, i.e. social norms. (Anderson Supp. Aff. at ¶24). Such behaviour is essential for the maintenance of chimpanzee society, and it can be extended to human beings when necessary. (McGrew Supp. Aff. at ¶27; Goodall Aff. at ¶24; Savage-Rumbaugh Supp. Aff. at ¶13, ¶19c, ¶20, ¶22; Anderson Supp. Aff. at ¶24). No bonobo or chimpanzee group could survive in the wild if its members failed to carry out their assigned duties and responsibilities to the group. (Savage-Rumbaugh Supp. Aff. at ¶37). They would cease to locate sufficient food, their youngsters would become easy prey, or they would have to try to make it on their own, which would be dangerous. (*Id.*).

2. CHIMPANZEES ROUTINELY SHOULDER DUTIES AND RESPONSIBILITIES WITHIN WILD CHIMPANZEE SOCIETIES.

a. Familial duties and responsibilities

1) Maternal duties

Chimpanzee mothers show a “duty of care” to their offspring that rivals that of humans. (McGrew Supp. Aff. at ¶14). Their maternal behavior is a clear indicator of responsibility. (Jensvold Supp. Aff. at ¶14; McGrew Supp. Aff. at ¶14; Goodall Aff. at ¶15; Boesch Supp. Aff. at ¶21).

The duties and responsibilities of a mother towards her offspring are many and often onerous. (Goodall Aff. at ¶15; McGrew Supp. Aff. at ¶14). As single mothers, they feed, protect, carry, shelter, and train their infants, for an average of five and a half years, from birth until weaning. (McGrew Supp. Aff. at ¶14). Without this succour, infant chimpanzees die (unless adopted). (*Id.*). For three years the infant is dependent on breast milk, and continues to suckle though less often for the next two years until the next baby is born. (Goodall Aff. at ¶15). Throughout this period the mother continues to carry the infant, at first clinging to her belly and then riding on her back. (*Id.*). During this time the mother waits for the child before moving off. (*Id.*). She constructs a nest large enough for herself and her child until the next baby is born. (*Id.*).

The mother's duties and responsibilities do not end when a new infant is born. (Goodall Aff. at ¶¶16-18; McGrew Supp. Aff. at ¶¶14-15). After weaning, chimpanzee mothers continue to groom, support and cooperate with their offspring for the rest of their lives, even into the adulthood of their offspring and the old age of the mothers. (McGrew Supp. Aff. at ¶14).

For the next couple years she waits for the older child before moving from one place to another. (Goodall Aff. at ¶16). When the older child is male, he is often anxious to join groups of adult males, particularly when there is a lot of excitement. (*Id.*). Mothers with small infants often prefer to avoid such groups. (*Id.*). Sometimes a mother, after setting off in her chosen direction, stops when her young son whimpers and refuses to follow, going some distance towards the males. (*Id.*). Each time she moves, he cries louder. (*Id.*). Some mothers then give in, and join the males in order to provide support for their sons. (*Id.*).

Chimpanzee mothers may continue this care, even after the death of an infant. (McGrew Supp. Aff. at ¶15). They may carry and safeguard the infant's corpse for days, or even weeks, until it has perished to the point of disintegration. (*Id.*). Moreover, young female chimpanzees practice their future maternal behaviour by using sticks as 'dolls', while young males do not, in a form of symbolic play. (*Id.*).

An important component of maternal responsibility is to provide support for her child. (Goodall Aff. at ¶17). During a play session her infant sometimes gets hurt and screams – the mother will hasten to support her child, reprimanding the rough playmate even though this may entail retaliation from a more dominant mother. (*Id.*). There have been many instances when mothers have gone to help their fully-grown offspring. (*Id.*).

2) Paternal duties

Chimpanzee paternity can be determined from DNA profiling of fecal samples but, as a female may be mated by most or all males during periods of receptivity, it seems unlikely that a male recognizes his own biological offspring. (Goodall Aff. at ¶19). Most adult males of a community act in a paternal way to all infants in their community, rushing to their aid when necessary. (*Id.*). On one occasion two hunters (human) shot a female chimpanzee, seized her

infant, and tried to push it into a sack. (*Id.*). As the infant screamed, a male chimpanzee rushed out of the forest, attacked the two men, grabbed the baby, and disappeared into the forest. Both hunters ended up in the hospital. (*Id.*). There are many other tales of adult males protecting – or trying to protect – infants from hunters across Africa. Tragically they often get killed themselves. (*Id.*).

3) Sibling duties

Such familial duties are not restricted just to mothers and fathers, however. (McGrew Supp. Aff. at ¶16; Goodall Aff. at ¶20). Juveniles and adolescents very frequently act responsibly towards their infant siblings. (Goodall Aff. at ¶20). One nine-year-old female, who had run in terror from a large poisonous snake, nevertheless climbed down from her tree to gather up and carry to safety her three-year-old brother, who seemed unaware of the danger. (*Id.*). A different adolescent female prevented her infant brother from following their mother when the trail passed through a clump of tall grasses. (*Id.*). He screamed loudly, but she persisted until the grasses were behind them – it was infested with tiny ticks. (Subsequently the mother sat picking ticks off herself for a long time.) (*Id.*).

An older sibling will almost always adopt an infant if that infant's mother dies. (*Id.* at ¶21). Under the age of three, an infant, dependent on breast milk, will die. (*Id.*). One five-year-old male carried his one and a half year old sister around until she died a few months later. (*Id.*). Older infants usually survive when they are adopted. (*Id.*). This responsibility is clearly not socially advantageous for the young caregiver, who spends a lot of time and energy carrying out his or her duties. (*Id.*).

Maternal siblings of both sexes also supplement the mother with similar care-giving behaviours (except for suckling). (McGrew Supp. Aff. at ¶16; Goodall Aff. at ¶20). This preferential treatment endures throughout their lives; for example, adult brothers may work together in alliance to strive to rise in the community's dominance hierarchy. (McGrew Supp. Aff. at ¶16). The two highest-ranking female kinship lineages (matrilines) at Gombe, the longest-studied population of wild chimpanzees, in western Tanzania, are the F and G families. (*Id.*). In

these families, patterns of familial duties have extended through three generations, that is, grandmothers also participate in the upbringing of their grandchildren. These families also show the highest reproductive success, in terms of offspring survival. (*Id.*).

b. Duties beyond kinship: adoption

Chimpanzee duties of care extend beyond shared genes (kinship). (McGrew Supp. Aff. at ¶17; Jensvold Supp. Aff. at ¶14; Boesch Supp. Aff. at ¶21; Goodall Aff. at ¶¶21-22; Anderson Supp. Aff. at ¶15). Evidence from both captive and wild chimpanzees indicates that they possess highly developed empathic abilities. (Boesch Supp. Aff. at ¶21; Savage-Rumbaugh Supp. Aff. at ¶19c, 19i; Anderson Supp. Aff. at ¶15).

A chimpanzee infant orphaned by the death of the mother may be adopted by others to whom that infant is not related. (McGrew Supp. Aff. at ¶17; Jensvold Supp. Aff. at ¶14; Anderson Supp. Aff. at ¶15). Young chimpanzees are breast-fed and cared for five years by their mothers, so that if the youngsters lose them they remain especially vulnerable. (Boesch Supp. Aff. at ¶21; Goodall Aff. at ¶21). Adopted orphans are more likely to survive, while unadopted orphans below the age of weaning almost always perish. (McGrew Supp. Aff. at ¶17; Goodall Aff. at ¶21). Adoption is a very costly behaviour as it may require carrying the infant over long distances for days and months, sharing the nest and food with them and protecting them in cases of social squabbles. (Boesch Supp. Aff. at ¶21).

Adoption of orphans is common in chimpanzees, and as seen in other primate species, females are often the main adopters of orphans. (*Id.*). These foster parents need not be female, nor even adult. (McGrew Supp. Aff. at ¶17; Goodall Aff. at ¶21). Such bonds may last a lifetime, even between unrelated males in adulthood, as expressed in the ‘currency’ of chimpanzee social life, grooming. (McGrew Supp. Aff. at ¶17).

Among the Ivory Coast’s Tai forest chimpanzees, researchers observed that half of the adoptions were done by adult males; in a few cases researchers could show that the males were not genetically related to the adopted ones. (Boesch Supp. Aff. at ¶21). At Gombe a twelve-year-old adolescent male cared for a three and a half year old male orphan, and saved his life.

(Goodall Aff. at ¶22). His sense of responsibility was most impressive when he ran to seize the orphan when he got too close to socially roused males – despite the fact that adolescent males normally keep well away from the adult males at such times. (*Id.*). He often got beaten up for his altruistic behavior, but this did not prevent him from acting in the same way the next time his help was needed. (*Id.*).

The signing chimpanzee Washoe adopted a ten-month-old chimpanzee named Loulis. (Jensvold Supp. Aff. at ¶14). While they bore no genetic relationship, Washoe was a very protective adopted mother. (*Id.*). Even at Loulis’ late childhood age, Washoe was still very protective of him. (*Id.*). Graduate assistants lived in fear of Loulis’ screams, whether warranted or not, as they would bring Washoe down upon them in an instant. (*Id.*). Washoe would then immediately display aggressive behaviors to the caregiver in defense of her son. (*Id.*).

c. Cooperation and group belonging: solidarity in between-group contexts

Chimpanzee duties and responsibilities beyond the family (or lineage) cross over into the realm of the community (or unit-group), which is the basic social unit of chimpanzees. (McGrew Supp. Aff. at ¶18; Boesch Supp. Aff. at ¶15; Jensvold Supp. Aff. at ¶15; Anderson Supp. Aff. at ¶15). In tasks requiring cooperation, chimpanzees recruit the most skilled partners and take turns requesting, and helping a partner. (Jensvold Aff. at ¶9). Chimpanzees show “community concern” and concern for individuals. (Anderson Supp. Aff. at ¶15). As noted above, chimpanzees are capable of highly developed empathic abilities. (*Id.*). They surpass other species in terms of concern for others’ welfare, as shown when individuals console an unrelated victim of aggression by a third-party. (*Id.*).

One simple example is territorial defense. (McGrew Supp. Aff. at ¶18; Boesch Supp. Aff. at ¶15; Anderson Supp. Aff. at ¶15). Territories are aggressively defended in all chimpanzee populations that have been studied and the participants in patrols controlling the borders are mainly the adult males. (Boesch Supp. Aff. at ¶15; Anderson Supp. Aff. at ¶16). Chimpanzee territories are defended collectively, unlike the individual territories of most animals; they must

work together to defend themselves and their resources against their neighbours. (McGrew Supp. Aff. at ¶18; Anderson Supp. Aff. at ¶16).

Whenever intruders are spotted, males converge to defend their territory as a team. (Boesch Supp. Aff. at ¶15). If not enough males are present, the first to arrive silently sit and wait for other group members to join. (*Id.*). Only once a large enough group assembles will they confront the others. (*Id.*). This reveals expectations about the social participations of group members. (*Id.*).

Relations with neighbouring communities are hostile, so that stronger communities may displace weaker ones, resulting in loss of resources or reproductive partners. (McGrew Supp. Aff. at ¶18). Such extreme competition can enact a fatal toll: A single male caught in the border zone by the neighbours may be killed; a single female with infant similarly caught may have her baby killed and eaten by them. (*Id.*). Xenophobia exacts a cost on outsiders. (*Id.*).

To maintain territorial integrity, males cooperate regularly to patrol the boundaries of the community's territory. (McGrew Supp. Aff. at ¶19; Anderson Supp. Aff. at ¶16). If their territory is invaded, they display together against the intruders, or if necessary, attack them. This is a necessary chore. Numbers count, so any individual shirking responsibility lets down the group. (McGrew Supp. Aff. at ¶19). In a border skirmish, a male deserted by comrades may perish. (*Id.*). On the other hand, a united group may prevail and win rewards. (*Id.*). Such patrols are conducted cautiously and silently; a male who makes noise may give away his colleagues. (*Id.*). Even a snapped twig leads to disapproving glances from the others. (*Id.*). What makes this shared responsibility so impressive is that the same males whose lives depend on one another in the patrol will later compete robustly with one another over access to a receptive female. (*Id.*). Somehow, they can resolve the contradictions involved in having conflicting interests in different contexts. (*Id.*). This implies their mutual recognition of shared responsibilities. (*Id.*).

In many localities in Africa, adult male chimpanzees regularly patrol the boundaries of their community's territory; encounters with members of a neighbouring community may result in violent, even lethal aggression. (Anderson Supp. Aff. at ¶16). Males engage in patrols with

partners who are especially likely to be other males with whom individuals groom and form intra-community coalitions, in other words, individuals that can be trusted for support in the event of aggression breaking out. (*Id.*). Wild chimpanzees will call to warn approaching friends about the presence of a potentially dangerous object that the latter is unaware of. (*Id.*). These examples indicate the existence of well-defined roles within the community and mutual expectations about how individuals should behave in a range of situations. (*Id.*).

Impressive supports by male group members are provided to rescue isolated individuals that have been taken prisoner by intruders. (Boesch Supp. Aff. at ¶16). Outnumbered individuals during intergroup encounter were observed to sustain severe injuries in forty percent of the cases, leading to death in fifteen percent of the severe attacks. (*Id.*). In one example in the Taï forest, a single adult male with an adopted infant on his back rushed for 600 meters to rescue an adult female from his group that was trapped and beaten up by five male intruders. (*Id.*). His appearance created enough of a havoc to allow the female to escape. In Taï chimpanzees, such risky supports are provided in twenty-eight percent of the intergroup encounters. (*Id.*). This spontaneous high level of altruism toward group members in this chimpanzee population reveals the sense of obligation felt by them to help and protect one another. (*Id.*).

Chimpanzees' relationships to each other are even more supportive of each other than to a caregiver, no matter their level of fondness for the human. (Jensvold Supp. Aff. at ¶15). If a chimpanzee gives an aggressive display of behavior or indicator of being hurt or offended, the other chimpanzees always come to that chimpanzee's support by making aggressive barks at the human. (*Id.*). Again this is regardless of the individual relationship with the human. (*Id.*).

d. Social dynamics: male hierarchy

Another chimpanzee universal that necessarily entails duties and responsibilities is participation in a hierarchy of social dominance. (McGrew Supp. Aff. at ¶20; Jensvold Supp. Aff. at ¶10). Male chimpanzees rank-order themselves from alpha (top) to omega (bottom) in linear fashion. (McGrew Supp. Aff. at ¶20). Usually there is a single dominant male; but often he only holds that position by the support of other males. (Jensvold Supp. Aff. at ¶10). In these

cases these dominant males demonstrate a sense of duty to their supporters. (*Id.*). For example, the dominant male will provide grooming, access to females, and perhaps access to meat to his primary supporter. (*Id.*). Chimpanzees are also highly protective of their communities, and will go to great lengths to defend them. (*Id.*). This involves their shouldering responsibility. (*Id.*).

The advantages of high rank and the disadvantages of low rank are obvious: More dominant individuals win more resources and mates. (McGrew Supp. Aff. at ¶20). Two reasons stand out for why low-rankers take part in the system. It is better to be low-ranking in a group than to be unranked in solitude. (*Id.*). And, there are costs as well as benefits to being high-ranking, which low-rankers avoid. (*Id.*).

e. Lawful and rule-governed/policing within chimpanzee societies

High-ranking individuals in chimpanzee groups may take on the role of policing—defined as impartial interventions in conflicts by bystanders—to ensure group stability. (Anderson Supp. Aff. at ¶15). The adult males of a community are responsible for patrolling their territory, chasing away or attacking individuals from neighboring communities—this serves to protect and sometimes increase resources for their own females and young. (Goodall Aff. at ¶23; McGrew Supp. Aff. at ¶21, ¶23). Sometimes this takes the form of specific, targeted ostracism of individuals who violate norms, such as a young adult male who disrespected higher-ranking males, who was fatally punished. (McGrew Supp. Aff. at ¶23). This requires close cooperation and gang attacks. Even two males who may be engaged in challenging each other for social dominance within the community will join in an attack on a stranger. (Goodall Aff. at ¶23).

One of the costs of alpha status is the duty to exercise ‘policing’ powers in the community. (McGrew Supp. Aff. at ¶21, ¶23). The alpha male’s role includes a variety of time- and energy-sapping activities, such as intervening in quarrels or fights between other community members, thus maintaining community integrity and preventing injury. (*Id.* at ¶21). He oversees the distribution of valuable resources, such as meat, after a successful hunt. (This is not to say that such activities are altruistic, and some males may be less responsible than others, or more

self-serving, but these activities do help to maintain the common good.) (*Id.*). Finally, there are other, less obvious ‘chores’ associated with high rank: When crossing roads, high-ranking males lead the way, being vigilant for traffic, and bring up the rear, making sure that others are not left behind. (*Id.*).

f. Cooperation and group belonging: within-group solidarity

Another indicator of rule-governed social interaction within a group is systematic, long-term reciprocity of favours or benefits among its members. (McGrew Supp. Aff. at ¶24; Boesch Supp. Aff. at ¶17; Savage-Rumbaugh Supp. Aff. at ¶16, ¶18). Chimpanzees cooperate, and understand each other’s roles. (Anderson Supp. Aff. at ¶17, ¶21). Chimpanzees reward others, and keep track of others’ acts and outcomes. (*Id.* at ¶18). That is, “you scratch my back, I scratch yours.” (McGrew Supp. Aff. at ¶24). A simple form is literally this, that is, like-for-like social grooming, but a more complex form is the exchange of differing goods or services, for example, if I provision you with prized food, such as meat, then at a later point, you will favour me as a mate. (*Id.*). Or, if you support me in my aggressive attempts to rise in dominance, then I will allow you access to females for mating. (*Id.*). Such arrangements only work in the long term (i.e. over years) if participants assume and carry out obligations offered and accepted. (*Id.*).

1) Help and tending of injured or vulnerable group members

Chimpanzees may make numerous behavioural adjustments—sometimes markedly so—in order to ensure the welfare of injured or disabled members of the group. (Anderson Supp. Aff. at ¶15). When crossing a potentially dangerous road, stronger and more capable adult males investigate the situation before more vulnerable group-members, waiting by the roadside, venture onto the road. (*Id.* at ¶16). The males remain vigilant while taking up positions at the front and rear of the procession. (*Id.*).

Tai forest chimpanzee group members have been seen to help and tend the injuries of wounded individuals for extended periods of time. (Boesch Supp. Aff. at ¶17). What is striking in this helping of others is that upon hearing the alarm calls of an attacked individual (through a leopard or another chimpanzee), the males hearing the calls within seconds would make loud

supporting whaa-barks, reassure one another and rush towards the caller to help. (*Id.*). The rapidity of the help is decisive in the case of a leopard attack. (*Id.*). All males visibly present will rush in to support, so as if this within-group solidarity was obvious to them. (*Id.*). If callers had sustained injuries, the rescuers and other group members would converge towards the injured and clean and lick the wounds for many hours, and in some cases such help would be extended for many days as long as the wounds were not healed and presented a risk of infection. (*Id.*).

2) Food sharing and hunting duties

Chimpanzees and bonobos in the wild have duties to see that all members of the group have access to food, that all group members arrive at a feeding source together, and that all group members have access to that source in a manner as to benefit the entire group. (Savage-Rumbaugh Supp. Aff. at ¶13; Anderson Supp. Aff. at ¶16). This requires cognitive concentration, social rules, and a greater sense of social responsibility for the ‘good’ of the group rather than fulfilling the desires of the individual. (Savage-Rumbaugh Supp. Aff. at ¶13). Chimpanzees inhabit sparser environments than bonobos and therefore must travel in smaller parties, and generally feed at separate locations. (*Id.*). However the larger “unit group” does travel together, though out of sight of one another. (*Id.*). Individuals sleep separately, but in vocal contact with each other. The distances between a travelling group of chimpanzees make it mandatory for them to share similar information with one another. (*Id.*). It appears that long distance vocalizations are employed to announce arrival at large food patches, and other information regarding food and planned travel patterns are shared among group members. (*Id.*).

At Bossou, Guinea, adult male chimpanzees are significantly more likely than other age-sex classes to raid human-cultivated crops near villages; these foods are then taken back into the forest and shared with more timid capable members of the community, who hang back and allow the males to raid. (Anderson Supp. Aff. at ¶16).

Wild bonobos and chimpanzees demonstrate the ability to harvest a constantly changing forest. (Savage-Rumbaugh Supp. Aff. at ¶36). Their mental mapping is extremely fluid, rapid and highly accurate. (*Id.*). Chimpanzees and bonobos obtain food without weapons and hunting

is more of luxury than common event. (*Id.*) Meat is the only food reportedly shared by chimpanzees, who inhabit sparser environments and who are thus moving farther toward the lifestyles of human beings. Bonobos share all foods in their diet. (*Id.*). For bonobos to harvest their territories without the swidden agricultural practices¹⁰—employed by human beings living in the same areas requires considerable planning, group communication, group coordination and cooperation. Everyone must fulfill his or her responsibilities for it to succeed. (*Id.*). The group must agree to travel together long distances each day—without food—in order to arrive at a particular food resource together. (*Id.*). The resource the group agrees to harvest one day will determine the options for travel that it will encounter the following day. Incorrect choices will lead to hunger for the entire group as the forest is a plentiful larder, but only if it is well known, well predicted and the entire group, infants, juveniles, pregnant females and the elderly are able to travel, as a group, the long distances required for harvesting. The planning required to make those critical decisions must be agreed to by the entire group and communicated, for the groups split up during travel, but arrive together at a common feeding resource. The mapping problem for traveling through a forest that is ripening in a very complex and somewhat variable manner is similar to the traveling salesman problem. (*Id.*). This not only requires advance planning but constantly updated information as well in order to maximize options for scheduling, sequencing, resource allocation and time investment planning. (*Id.*).

Advance planning and sharing of information is a duty and responsibility that lies at the heart of bonobo and chimpanzee survival in the wild. (Savage-Rumbaugh Supp. Aff. at ¶37). Chimpanzees and bonobos place great emphasis on activities that are devoted to monitoring one another and to the deep insults, threats, fears and angers that are generated when the actions of any group member threaten the unity and cohesion of the group. (*Id.*). Chimpanzees and bonobos take immediate insult and vociferous exception to all such actions. They are monitoring themselves and their rivals and react to any disturbances in what they perceive as a balance of

¹⁰ An area cleared for cultivation through slash and burn.

power directed toward them. Chimpanzees and bonobos react to what they perceive as any change in the group balance of power, distribution of resources, or inappropriate behaviors and/or alliances, even friendly alliances. (*Id.*).

Important social contributions are rewarded in the hunting context. (Boesch Supp. Aff. at ¶18; Anderson Supp. Aff. at ¶18). Wild chimpanzees cooperate when hunting. (Anderson Supp. Aff. at ¶18). The striking fact in the hunting context is the very high level of cooperation between the males that act as a team to capture small monkeys up in the trees. (Boesch Supp. Aff. at ¶18; Anderson Supp. Aff. at ¶18). When a subgroup of chimpanzees moves into hunting mode in the presence of monkeys, individuals take up positions in trees or on the ground corresponding to different roles such as chaser and blocker. (Anderson Supp. Aff. at ¶18). If the hunt is successful, a monkey will eventually be caught and killed by one of the group of hunters. (*Id.*). In Tai, once a capture has been made, the meat-sharing rules favor the hunters; males receive more meat if they participated in the hunt and even more so if they made an important contribution to the hunt. (Boesch Supp. Aff. at ¶18; Anderson Supp. Aff. at ¶18).

Hunting roles requiring anticipation of the prey movements are as equally well rewarded as capturing the prey, even if the individuals doing such movements were not making a capture. (Boesch Supp. Aff. at ¶18). Somehow, the group members realize that anticipating a prey is an essential part of a successful hunting team and they value this equally high as the one doing the capture itself (capturing the prey and performing complex anticipation ensures the same amount of meat). (*Id.*). Less important hunting movements, such as chasing or driving the prey, are not valued so highly by other group members, as they rarely make a decisive contribution to the capture. (*Id.*). This higher social valuing of hunting contribution by other group members allows for this cooperative system to be stable. (*Id.*).

Punishment is part of the meat sharing rules. (Boesch Supp. Aff. at ¶19; Anderson Supp. Aff. at ¶18). The rewarding of certain action leads to the passive punishment of individuals that are looking to access meat, but because they did not contribute to the hunt are only meagerly receiving some: Individuals that were present during the hunt but did not participate in it,

received 2.6 times less meat than hunters. (Boesch Supp. Aff. at ¶19). This rewarding of one's hunting contribution is often in conflict with dominance hierarchy (as dominant males are not always present during a hunt or simply not hunting), and despite the impressive and sometimes violent attempts by the dominant males to access the meat, hunters will be reliably allowed access to more meat by the sharing group (this observation applies only to the Tai chimpanzees and not to other chimpanzee populations where the meat sharing patterns follow different rules). (*Id.*). Regularly, dominant males, which want to access meat, display violently towards meat eaters, but access to meat is denied by the group of chimpanzees present. (*Id.*). In other feeding contexts, like in fruiting trees or when large amounts of fruit are clustered on the ground, alpha males can ascertain their priority of access; only in meat eating is his access denied or limited, when he did not participate in the hunt. (*Id.*).

A study of more than 4,600 interactions over food in a captive chimpanzee group recorded remarkably balanced exchanges of food between individuals: not only did food exchanges occur in both directions, individuals were more likely to share with another chimpanzee who had groomed them earlier that day. (Anderson Supp. Aff. at ¶18). The observed pattern of grooming and food transfers suggests the presence of reciprocal obligations. (*Id.*). In captivity, when presented with an “ultimatum game” in which both partners need to cooperate in order to split available rewards equally, chimpanzees and three-year-old human children behave similarly: both perform in a way that ensures a fair distribution of rewards. (Anderson Supp. Aff. at ¶19). Other studies show that human adults behave fairly in similar situations. In a “trust game” in which two chimpanzees can take a small reward for themselves or send a larger reward to a partner and trust that the partner will return some of it, chimpanzees spontaneously trust each other. Furthermore, they flexibly adjust their actions in the game depending on the degree of trustworthiness of the partner. (*Id.*).

3) Informing group members about danger

Chimpanzees have demonstrated a high sense of solidarity towards ignorant group members, which they would inform about the presence of a danger, like a snake for example.

(Boesch Supp. Aff. at ¶20; Jensvold Aff. at ¶9; Savage-Rumbaugh Supp. Aff. at ¶16). In a series of experiments, it was possible to show that if a chimpanzee discovers a snake near a path and he is followed at some distance by another chimpanzee that is ignorant about the danger, the first individual will make alarm calls until the follower sees the danger. (Boesch Supp. Aff. at ¶20; Jensvold Aff. at ¶9). In addition, he will position himself such that his body is pointing towards the snake. (*Id.*). If, however, he is followed by a chimpanzee that is aware of the presence of the snake, he will remain silent. (*Id.*). This was observed with chimpanzees living in the Budongo forest in Uganda. (*Id.*). This reveals that such a high sense of within-group solidarity is not restricted to one population or a response to one specific environmental condition, but is more a general property of social life in chimpanzees. (*Id.*).

Bonobos and chimpanzees who have acquired language also recognize the need to inform others of information of import, and they understand the circumstances that lead to others lacking information they themselves have. (Savage-Rumbaugh Supp. Aff. at ¶21). For example, they inform others of things that have led to danger, such as potential fires, wild dog packs nearby, branches on trees that are unstable, foods that are poisonous, location of hidden objects, causes of death of other group members, mistreatment of group members, deceit on the part of others, etc. (*Id.*).

4) Death-related duties

An impressive example of collective community action is what sometimes occurs after the death of a community member. (McGrew Supp. Aff. at ¶22). Others may perform what amounts to a funeral ceremony, or at least a wake. (*Id.*). They congregate around the corpse, groom and test it for viability, seeming to seek to arouse it. (*Id.*). Then, as if accepting that death has occurred, they maintain a silent vigil that may last for hours. (*Id.*). This collective action occurs both in nature and in captivity. (*Id.*). This appears to involve the exercise of duty or responsibility as there is no obvious material pay-off to the individuals who join in. (*Id.*).

3. CHIMPANZEES SHOULDER DUTIES AND RESPONSIBILITIES WITHIN CAPTIVE CHIMPANZEE SOCIETIES.

Research in captivity has established that chimpanzees can be trained or can learn spontaneously to work collaboratively with at least one other individual to solve a common problem that cannot be solved by a single individual. (Anderson Supp. Aff. at ¶17). After experiencing working alongside two different collaborators, chimpanzees prefer to work with a collaborator who has proved more effective in the past; thus they attribute different degrees of competence to other individuals. (*Id.*). In many cooperation tasks the outcome is that each partner receives a reward such as food. (*Id.*). However, immediate reward is not a prerequisite for cooperation: if one chimpanzee sees another trying to solve a problem and can also see the problem, the former may provide the precise tool that the latter requires, especially—but not only—if the latter requests the tool. (*Id.*). Notably, such helping persists even in the absence of reciprocation by the tool-user: chimpanzees continue to help partners in need of help despite receiving no obvious reward. (*Id.*). Similarly, when young chimpanzees observe a human trying to retrieve an out-of-reach object, they sometimes spontaneously retrieve the object and give it to the human although they receive no reward for doing so. (*Id.*). Chimpanzees will also perform a newly acquired skill (pulling a chain to open a door) so that another chimpanzee can gain access to food; again, the helper obtains no obvious payoff in this situation. (*Id.*).

Chimpanzees readily understand social roles and intentions. (Anderson Supp. Aff. at ¶21). In Premack and Woodruff's (1978) pioneering study, a chimpanzee was presented with videotaped scenes of a human actor faced with different problems, for example trying to reach inaccessible food, or trying to listen to a gramophone record. (*Id.*). When given a choice between a photograph of the solution to a problem (e.g., a stick with which to reach the food, or record player plugged in) alongside decoy photographs (e.g., irrelevant objects, or a gramophone cable plugged in but cut), the chimpanzee consistently chose the correct solution, i.e., that which the actor in the videos required to solve his problem. (*Id.*).

Chimpanzees distinguish between individuals who have harmful versus prosocial intentions. (Anderson Supp. Aff. at ¶22). They will point toward the one of two locations that is baited with hidden food if this results in a naïve, cooperative human finding the food and sharing it with the chimpanzee. (Chimpanzees in the wild have a communicative repertoire of more than 60 distinct nonverbal gestures). (*Id.*). But they also learn to point deceptively in the presence of a non-cooperative, selfish human – deliberately directing him toward the wrong location. (*Id.*). Chimpanzees discriminate between prosocial and antisocial individuals based not only on how those individuals behave toward the chimpanzees themselves, but also based on their treatment toward third parties: generous individuals are preferred to selfish individuals. (*Id.*).

Chimpanzees can adapt quickly to role-reversal in cooperative tasks. (Anderson Supp. Aff. at ¶23). In one study, chimpanzees were either trained to follow a human’s pointing gesture in order to find food, or trained to gesture to direct a naïve human toward hidden food. (*Id.*). Once this relationship was established, the roles were reversed: indicator chimpanzees now became the recipients of the communicative gesture, while previous recipients were now required to actively point for the human. (*Id.*). Unlike monkeys, for whom spontaneous role reversal appears very difficult, three quarters of the chimpanzees tested showed immediate comprehension of the changing roles and performed appropriately. (*Id.*). In conversations with a human, ASL-trained chimpanzees took turns appropriately, and as in humans their conversational turn-taking developed with experience. (*Id.*).

4. CHIMPANZEES SHOULDER DUTIES AND RESPONSIBILITIES WITHIN CHIMPANZEE/HUMAN SOCIETIES.

a. Promise-keeping and fair exchanges in chimpanzee/human societies

Chimpanzees prefer fair exchanges. (Anderson Supp. Aff. at ¶20). Chimpanzees and bonobos keep promises and secrets. (Savage-Rumbaugh Supp. Aff. at ¶¶27-28). In the wild, adult males employ this capacity to stealthily approach other groups for purposes of surprise attack. (*Id.*). In captivity, having acquired language, they remind others of events such as their

birthdays, days visitors are expected, etc. (*Id.*). They remind caretakers of trash that has not been carried out, drains that are clogged, computer programs that are mis-performing, etc. (*Id.*).

When apes are taken out of doors on leads they can be asked to promise to be good, not to harm anyone and to return when asked. (Savage-Rumbaugh Supp. Aff. at ¶28). If they promise these things they will keep their promise. (*Id.*). Should they decide they are not going to keep such a promise, reminding them of the promise, the need for and the reason for it, has always been sufficient to reinstate the promise. If they are not capable of understanding language at that level, they do not make and/or keep promises except for the immediate future (five minutes). (*Id.*). But language extends the time of promise keeping to years, thus serving as an extremely power mechanism for the development of very complex group networks of social obligations, responsibilities and duties. (*Id.*).

In the well-known inequity aversion procedure, a subject and a partner each exchange a token with an experimenter, who in turn rewards each individual with a food item. (Anderson Supp. Aff. at ¶20). Two chimpanzees will take turns exchanging with the experimenter as long as the value of the reward that each receives is the same. But when one chimpanzee sees the partner receive a higher-value reward for completing the same exchange (e.g., partner receives a grape, subject receives a small piece of cucumber), she is likely to either refuse to accept the reward or refuse to return the token. (*Id.*). In other words, they are intolerant of unfair treatment. (*Id.*). Furthermore, as in humans, chimpanzees' responses to reward inequity may vary with the quality of the relationship between subject and partner: they react less emotionally to unfairness if the partner is a close friend or relative. (*Id.*).

b. Duties and responsibilities in interactions with humans

Chimpanzees and bonobos evidence understanding of their duties and responsibilities both in their interactions with human beings and in their interactions with each other. (Savage-Rumbaugh Supp. Aff. at ¶13; Anderson Supp. Aff. at ¶24). Chimpanzees and bonobos have a clear understanding of their strength relative to that of humans (much greater) and their speed and agility (far greater). (Savage-Rumbaugh Supp. Aff. at ¶20). They demonstrate that they

understand the need to treat humans with care, whether the interactions be grooming, play, tree climbing, etc. (*Id.*). They slow down their pace, they exert exact control over their bodies and their teeth, with exceeding care and precision. (*Id.*).

A male chimpanzee in captivity rescued his human caretaker, Mark Cusano, with whom he had a close relationship, from a very bad attack from three adult females. (Goodall Aff. at ¶25). According to Mr. Cusano, the chimpanzee saved his life. (*Id.*).

There are fewer examples of wild chimpanzees exhibiting duties and responsibilities with respect to humans, although many examples can be found in relationships between captive chimpanzees and humans. (McGrew Supp. Aff. at ¶25; Savage-Rumbaugh Supp. Aff. at ¶¶19-34). Perhaps the best example in the wild is the simplest one: Researchers at Gombe National Park in Tanzania have studied wild chimpanzees for more than fifty-five years. (McGrew Supp. Aff. at ¶25). Tens of thousands of observation hours at close quarters have accumulated over these decades. (McGrew Supp. Aff. at ¶25; Goodall Aff. at ¶24). Most of the chimpanzees studied have spent time with researchers from birth onwards, their whole lives, on a daily basis. (McGrew Supp. Aff. at ¶25; Goodall Aff. at ¶24). Chimpanzees have impressive slashing canine teeth, such that a single bite to a human could cause serious injury, even death. (McGrew Supp. Aff. at ¶25; Goodall Aff. at ¶24). Yet, not a single instance has occurred of a chimpanzee biting a researcher. (McGrew Supp. Aff. at ¶25; Goodall Aff. at ¶24). They have been hit, stamped on, and dragged during displays, but never received bite wounds. (Goodall Aff. at ¶24).

One male in particular, Frodo, was continually charging people and hitting them, and sometimes pushing Dr. Goodall. (*Id.*). It is clear, however, that these chimpanzees only intend to impress, to emphasize their superiority. (*Id.*). Dr. Goodall recounts that on three separate occasions, when she was above a very steep drop, Frodo charged her, but did not make contact. (*Id.*). Their videographer, Bill Wallauer, reported four such occasions. (*Id.*). It was very clear to them that Frodo understood what would have happened on those seven occasions. (*Id.*). The same thing happened to Dr. Goodall with a different alpha male. They are clear examples of intention not to harm. (Goodall Aff. at ¶¶24-25). At the very least, it shows remarkable tolerance

or, more likely, they see the long-established relationship with these familiar humans as something they are duty-bound to uphold. (McGrew Supp. Aff. at ¶25).

When chimpanzees and local humans live at close quarters, especially in unprotected areas, outside of national parks or reserves, both parties must adjust to one another. (McGrew Supp. Aff. at ¶26; Savage-Rumbaugh Supp. Aff. at ¶22). Each impinges on the other, sometimes negatively (crop-raiding by apes; deforestation by humans), sometimes positively (each tolerates disturbance of their preferred daily routines). (McGrew Supp. Aff. at ¶26). Humans who tap wild palm trees for sap, which ferments into ‘palm wine’, allow chimpanzees to pilfer this beverage from their containers. (*Id.*).

Chimpanzees and bonobos living in captivity understand that they must remain in certain areas and not harm or scare human beings who are visitors or who do not know them. (Savage-Rumbaugh Supp. Aff. at ¶22). Frequently, when doors are left open they refuse to go into areas where they are not allowed. If humans whom they do not know inadvertently enter their areas, they avoid those human beings, in recognition that interaction with them is prohibited by rules of the facility, unless they feel threatened. (*Id.*).

Having acquired language, if chimpanzees or bonobos harm human beings, it is inevitably the case that they perceive those human beings as either having broken rules of conduct, having said something insulting (often out of another's persons earshot) or having threatened them or persons they trust. (Savage-Rumbaugh Supp. Aff. at ¶23). Whenever there exists a disagreement between a human and a chimpanzee or bonobo who has acquired language, the disagreement can be solved by explaining the reasons for the action. (*Id.* at ¶26). For example, if a bonobo does not wish a person to leave and stands in front of the door, repeatedly insisting they remain in the cage; this behavior can be negotiated by an explanation of the reason for leaving, such as dentist appointment, etc. (*Id.*).

c. Language-trained chimpanzees exhibit an enhanced ability to shoulder duties and responsibilities.

Chimpanzees and bonobos who have been raised in a research setting that required human beings to expect them to become linguistically and socially competent group members, much as other bonobos and chimpanzees expect of bonobo and chimpanzee children in natural settings, exhibit unique duties and responsibilities. (Savage-Rumbaugh Supp. Aff. at ¶¶19-34); Jensvold Supp. Aff. at ¶12). Having acquired language, chimpanzees and bonobos become increasingly trustworthy and responsible as they pass out of adolescence and into adulthood. (Savage-Rumbaugh Supp. Aff. at ¶24). They assume roles of group monitoring and teaching of children. (*Id.*). Having acquired language, they presume that humans will explain their intentions and that they are to do likewise. (*Id.* at ¶25). Every interaction becomes a linguistically negotiated contract. (*Id.*). These contracts can apply to time periods that are days, weeks and even years ahead and will be remembered and enacted at the appropriate time. (*Id.*).

1) Chores

Dr. Jensvold worked with five chimpanzees over nearly three decades studying how they use ASL to communicate with humans and each other. (Jensvold Supp. Aff. at ¶11). For decades, the daily routine at their Central Washington University laboratory in Ellensburg, Washington, involved the chimpanzees participating in numerous activities with caregivers. These included husbandry duties. (*Id.*).

In the mornings, the chimpanzees helped clean enclosures by returning their blankets from the night before. (Jensvold Supp. Aff. at ¶12). The chimpanzees all participated; it was the duty that the researchers placed upon them. (*Id.*). When new caregivers appeared, the chimpanzees sometimes made an attempt at ditching their duties, but eventually they bore the responsibility of returning blankets and other objects in the enclosure to the caregiver. This was done without bribery. (*Id.*).

At lunchtime, all of the chimpanzees were served a course of soup followed by a course of fresh vegetables that was offered only if all of the chimpanzees ate their soup. (Jensvold Supp.

Aff. at ¶13). If one of the chimpanzees refused to eat their soup, the others put pressure on the noneater by offering her the soup and a spoon. The noneater nearly always capitulated and ate the soup. This individual behavior that affected the group demonstrated their sense of responsibility and duty. (*Id.*).

2) Moral behavior

As noted, *supra*, at Section II-B-1, both ape and human adult members constantly behave in morally responsible ways as they understand them. (Savage-Rumbaugh Supp. Aff. at ¶14; Anderson Supp. Aff. at ¶20). Ape children acquire the moral sense and duties of both cultures and the languages of both cultures. (Savage-Rumbaugh Supp. Aff. at ¶29). Self-aware beings cognizant of their own identity, they come to desire to engage in mutually responsible moral actions. They come to display a sense of loyalty, duty, honor, and mutual respect which takes cognizance of the individuality and free-will of other self-aware beings. However, they extend this to human beings only as long as they are, in turn, treated similarly. (*Id.*).

Adult chimpanzees and bonobos, when reared in the proper manner, also become capable of duties and responsibilities that are “self-assigned.” (Savage-Rumbaugh Supp. Aff. at ¶30). They also acquire an understanding of how to behave in a manner that they begin to perceive as culturally appropriate for humans. (*Id.*). As this occurred, they began to demonstrate a sense of responsibility to help the human members of their Pan/Homo world attempt to show visitors how to begin to cross the species boundary. Additionally some *Pan* members, as they entered their decade of life, began to study this problem themselves and reflect upon it. This surprising event occurred when the Pan/Homo group found themselves relocated to a new facility where they had to cope with large numbers of people who viewed the *Pan* members as basically nonsentient, nonknowing, nonself-reflective beings. (*Id.*).

Moral behavior can be demonstrated in the chimpanzees’ use of the sign “SORRY,” which they acquired while reared as deaf human children. (Jensvold Supp. Aff. at ¶16). If they did something aggressive to a human, the chimpanzees often responded with “SORRY.” (*Id.*). These apologies go with morals and a sense of right and wrong. (*Id.*). When the Central

Washington University facility closed, the two remaining sign-language-using chimpanzees in the group, Tatu and Loulis, moved to a sanctuary with eleven other chimpanzees, none of whom knew sign language. (*Id.*). Tatu sometimes antagonized her new neighbors by poking sticks at them through the fencing. (*Id.*). That often elicited aggressive behavioral displays, to which Tatu would sometimes respond by signing “SORRY” to the offended chimpanzee. (*Id.*).

A critical component of the ape child’s desire to adopt and to accept duties and responsibilities resided in the emotional cross-cultural attachments between group members. (Savage-Rumbaugh Supp. Aff. at ¶16). These attachments were identical to those one finds in a human group or in any ape group, but transcended the species boundary. (*Id.*). Both apes and humans feel and openly express a deep sense of responsibility to one another. (*Id.*).

Both species in a *Pan/Homo* world become intensely aware of their differences and their similarities and engage in real and mutual trust and cooperation. (*Id.* at ¶34). Both species understand the magnitude of this event and that it requires far more than simple friendship. All sentient self-knowing entities, such as chimpanzees and bonobos, endowed with a sense of “I am” manifest the self-understanding, self-knowledge and self-choice that enable them to recognize, respect and acknowledge *the existence of a similar capacity* in the other species. (*Id.*). In this regard it is noteworthy, that while both apes and humans can love, rear, care for and interact with canids, adults of both species recognize that canids are incapable of the kind of self-knowledge that adult humans and adults apes possess. Therefore, neither species holds dogs responsible for “intentional actions” in the same way that hold other adult humans and/or apes responsible for such actions. (*Id.*). Apes did however, display far less patience with misbehavior on the part of dogs than the human members of their *Pan/Homo* culture. In part this was because when dogs attached themselves and their allegiance to particular apes and not others, this proved unsettling to the group. (*Id.*).

When apes are not reared as pets, these innate capacities enable attachments to emerge that are born of moral awareness of the needs of one’s group and one’s role within that group. (*Id.* at ¶15, ¶18). When not displaying their “human” skills for outsiders, all members of the

cross-cultural linguistic *Pan/Homo* culture that Dr. Savage-Rumbaugh created treated each other as members of one group. (*Id.* at ¶14, ¶18, ¶31). In that group all members had rights, roles, and responsibilities in accord with their abilities and maturity. (*Id.*).

In response to the highly distressing event of relocation to facility where they were all were treated very differently than had been the case at the Language Research Center where they were reared, Kanzi, Panbanisha and Nyota each began to try to find their own ways to help shoulder the new responsibilities imposed upon this *Pan/Homo* group. (*Id.* at ¶31). They started to assist those that the outsiders viewed as their “experimenters.” (*Id.*). Panbanisha began to repeatedly watch and comment on documentaries about human/ape differences. The earliest that caught her attention was “Harry and the Hendersons,” which she watched over and over as child. (*Id.*). As an adult, she studied the specials on PBS and the Discovery Channel. She also began to translate Kanzi’s vocal utterances onto the keyboard. Elykia began to understand some English and started to offer running translations of what humans were saying for her mother Matata, and her brother Maisha, knowing that they could not understand human language. Kanzi began to pose for photographers, doing precisely as they asked, so the photographers did not have to watch and “wait” for their shot. He began to carry out scenes for videographers precisely as they asked. Kanzi also taught Elykia (his mother Matata’s fourth daughter) how to smile for the camera, and for visitors. Panbanisha began teaching Matata how to use the symbol board filled with lexigrams, which she had acquired spontaneously as an infant, even before she began to speak “bonobo.” (*Id.*).

Maturation in the *Pan/Homo* world began to reflect back upon the wild caught bonobo matriarch of the group Matata. (*Id.* at ¶32). She had *refused* for decades to view the keyboard as a linguistic device. Once her children, Kanzi and Panbanisha, grew up and were regularly employing it to communicate with humans, each other, and their offspring, Matata started to show a greater interest in the potential of this device. (*Id.*). Also at this point, her children began to be able to vocally translate lexigrams into bonobo speech for her. As she began to grasp the true function of the keyboard, she started to study it for hours at a time; but always hid it, if

caught doing so. She continued to act as though she did not know lexigrams, but when the situation was urgent or critical, she could produce fully complete appropriate sentences; for example, one day when she became ill, she requested, “Give green medicine.” (*Id.*).

3) Other “human-like” duties

As they grew older, the chimpanzees and bonobos reared by Dr. Savage-Rumbaugh increasingly assumed a variety of duties for the purpose of demonstrating their abilities to outsiders. (Savage-Rumbaugh Supp. Aff. at ¶33). When outsiders were present, they would assume a responsibility to do things that were more “human-like.” (*Id.* at ¶19, ¶33).

It was in the conscious awareness of the bonobos and chimpanzees of the implicit agendas and external goals of their *Pan/Homo* group that one could most clearly discern the emergence of their capacity to assume duties and responsibilities in a human-like manner. (*Id.* at ¶33). They understood not only what they were doing, but why they were doing it. As is the case with humans, their understanding increased with age and experience. (*Id.*). Similarly their recognition of the degree to which persons who were outside their immediate *Pan/Homo* family *misunderstood* them increased. They became highly creative in trying to reach across the divide to even the most incredulous human beings. They slowed down their actions and sounds, they exaggerated them, they repeated them, they blended sounds, gestures and lexigrams and they waited till they noted that the humans were observing or their cameras were turned off before they engaged them. While these were skills that the human members of the group could model, they could never have been taught. Close observation of the behavior of others, while reflecting on the intent of others, requires the knowledge that the “other” has a mind, that the contents of two minds are not always the same, and that one must pay attention to the “attention” of the other if one wishes to successfully redirect their perspectives, ideas, views, etc. (*Id.*).

Individual chimpanzees and bonobos vary widely in their interests and in the particular capacities they sought to master, as do human children. (Savage-Rumbaugh Supp. Aff. at ¶18). Often, if one chimpanzee or bonobo excels in some skill, those close in age seek to excel in other skills; this demonstrates an awareness of their individual responsibility to fill a particular niche

within the community to maximize group utility. (*Id.*). For example, Kanzi viewed himself as the expert stone tool maker and the expert fire maker in the group. He felt it was his responsibility to demonstrate these skills, and to practice them. He did not appreciate that Panbanisha took this role, or was asked to take this role by humans in the name of research. Panbanisha was the artist and story manufacturer, Elykia was the translator between languages, Teco was the one who found a way to cheer up the group when their spirits were low, Matata taught the skills of the forest, Nathan was the mediator between the worlds, P-Suke was the sex symbol, Panzee was the puzzle resolver, Maisha was the show-off, Sherman was the leader, Lana was the critic and Austin was the careful one. Each of these apes recognized the roles of the others and “stood down” when the recognized expert set about to demonstrate these capacities for human visitors. (*Id.*).

As language comprehension increases in the human or ape, it allows the intent, and underlying behaviors, to be overtly expressed. (Savage-Rumbaugh Supp. Aff. at ¶25). As noted above, chimpanzees and bonobos who acquire language are often asked to carry out duties and responsibilities, and succeed. (Savage-Rumbaugh Supp. Aff. at ¶13). They routinely enter into contractual agreements. (*Id.*). Capacities indicative of the chimpanzees’ ability to assume duties and responsibilities and to make contractual agreements in the groups with which Dr. Savage-Rumbaugh worked included:

- a. A conscious awareness of the fundamental importance of fire, accompanied by an understanding that fire is produced by a variety of different kinds of activities.
 - 1) A conscious awareness of the need to responsibly practice this skill and to demonstrate it to human beings who place great value on it.
 - 2) A conscious awareness of all the component skills required (finding dry twigs and leaves, placing them in a pile, lighting them, adding additional larger pieces of wood as fuel, not adding too much fuel

and the need to keep the fire contained, the need to take to avoid being burned, and the need to put the fire out, lest it spread).

- 3) A conscious awareness of the way in which fire alters the texture, taste, and desirability of various foods, making some better and others worse.
 - 4) A conscious awareness of the properties and material required to start fire, i.e., small dry sticks, paper, etc.
- b. A conscious awareness of how to cook a meal as a human would, accompanied by an understanding of the responsibility to practice this and to demonstrate to human beings this ability. Within activities that dealt with cooking, they were many sub-components they were willing to demonstrate, including:
- 1) Obtaining pots and pans
 - 2) Obtaining foods
 - 3) Chopping foods
 - 4) Mixing and stirring foods
 - 5) Heating foods
 - 6) Serving foods
 - 7) Extracting juices
 - 8) Crushing seeds
 - 9) Blending foods as they processed them through different stages of heat
- c. Within their own social group they assumed responsibilities listed below:
- 1) Teaching younger group members rules about food sharing
 - 2) Teaching younger group members rules for how to interact with human beings
 - 3) Teaching younger group members about dangerous animals

- 4) Protecting younger group members from dangerous animals
- 5) Teaching younger group members about dangerous objects and/or locations in the environment
- 6) Protecting younger group members from dangerous objects and/or locations in the environment
- 7) Conveying vital information to other group members about the actions of humans as well as other group members that were out of site
- 8) Teaching those members of the bonobo group who had little human contact how to employ lexical symbols in communicative exchanges with human
- 9) Teaching those group members who had little human contact how to employ vocal symbols in exchanges with humans
- 10) Informing group members of any unusual or suspicious actions on the part of humans
- 11) Informing group members of any unusual or suspicious actions on the part of animals
- 12) Those who could comprehend spoken English assuming the responsibility to translate for other members that were unable to comprehend spoken English
- 13) Taking into account which members were not receiving sufficient food from human caretakers who made their own rules about how much food various bonobos were allowed and flaunting human rules by hiding food for those members who were being underfed
- 14) Protecting young humans and young apes from falling or engaging in activities that could lead to harm

- 15) Seeing that needed items, such as blankets were distributed among the group in a responsible manner
 - 16) Conveying to human beings whom they trusted, information regarding deceitful actions of other human beings
 - 17) Conveying to human beings whom they trusted, information regarding physical harm done to them by human beings who tried to intimidate and frighten the bonobos by violent means
 - 18) Reminding human beings of promises that had been made to themselves or to other members of their own social group
 - 19) Taking responsibility for care of dogs and making certain that dogs were properly treated
 - 20) Taking responsibility for care of orangutans and making requests for their needs when the orangutans were unable to do so for themselves
 - 21) A conscious awareness of the importance painting and writing serve as symbolic modes of expression. An understanding of the need to paint in a manner that is interpretable by human beings, and an ability to so do.
- d. A conscious awareness of the importance of making and understanding contractual agreements and promises (“If you do X I will do Y”, or “I do Y, will you promise to do X?”) and to keep them. These agreements are made linguistically and cover all manner of situations with both humans and other chimpanzees. Examples include:
- 1) “If you promise to stay with me, we will go outdoors.”
 - 2) “If you will watch Teco for me, while I go get tea, I will bring you some.”

- 3) “If you want some Austin’s Cheerios, please give some of your peanuts to him.”
 - 4) “If you promise not the tear up this computer, you may use it.”
 - 5) “If you will show the visitors how to use the keyboard now, we will go outdoors and make a fire later.”
 - 6) “If you will promise to take care of the dog, I will let it play with you.”
 - 7) “If you will translate what Matata is saying, I will take you for a car ride.”
 - 8) “If you leave a written note in the sand, X will read it on another day and leave here what you request.”
 - 9) “If you are good and help me while the visitors are here they will bring you a surprise.”
 - 10) “If you are quiet, no one will know we are here and we can listen to what they are saying.”
- e. A conscious awareness that humans are expected to uphold their end of contractual agreements and promises which they make to apes as well as to one another.
 - f. A conscious awareness of the importance humans attach to being able to tie knots and to link things together through this method.
 - g. A conscious awareness of the need to keep blankets and other nest-building materials laundered and folded and an awareness of the need to utilize clean blankets on the top side of the nest.
 - h. A conscious awareness of the importance humans place on the apes’ capacity to make stone tools, bone tools, and stick tools.
 - 1) A conscious awareness of the requirements of the various properties of these different classes of tools (i.e. stick tools can be

fashioned with hands and teeth, stone tools must be fashioned with other stone, bones can be split lengthwise in a manner that stone and wood cannot, etc.).

- 2) A conscious awareness of the uses to which tools of different shapes can be addressed.
 - i. A conscious awareness of the need for child-care. This includes a great sensitivity to the needs of infants, both those belonging to self and those belonging to others. It includes a conscious monitoring of what the infant can and cannot do, as well as what an infant can and cannot understand. It demands a conscious understanding of the kinds of things that must be done to ensure an infant's safety. This includes an understanding that the needs of human infants and bonobos differ considerably. (This skill was not highly developed in Matata; however Panbanisha's monitoring of infants and their requirements was essentially at the human level). This care and caution is not only exhibited when the infant is in clear and present danger (as is the case with most animal.). The care and caution is exerted long before the infant becomes endangered.
 - j. A conscious awareness of the need to keep the living facility clean according to human standards and to remove what humans designate as trash. Also a conscious awareness of what USDA inspectors search as demonstrated by helping to prepare for inspections (by hiding items they might asked to be removed from the enclosures, etc.).
 - k. A conscious awareness of the importance of sharing food among group members in an appropriate manner according to bonobo food rules as taught by Matata who was wild-reared.
 - l. A conscious awareness that most human beings neither understand, nor respect their capacity to employ symbols creatively and in contextually

appropriate novel manners. They attempt to meet such persons more than halfway, because they are keenly aware and understand that humans fail to grasp that any kind of symbolic system except their own could be symbolic or complex. Bonobos will go to great lengths to teach human words, preferring to do so only in contextually appropriate meaningful communicative contexts; because humans cannot grasp symbol meanings devoid of context.

- m. A conscious awareness that many humans fail to grasp that they understand spoken words and sentences at a high level. They will take great care to try and demonstrate this to humans in novel socially appropriate contexts. They have learned that responding in “test” situations, when humans repeat trials over and over, does little to convey their actual abilities and desire to avoid these settings. Some apes completely refuse them.
- n. A conscious awareness of numerosity, which gives them a grasp of numbers to twelve or more without actually counting. This can become accompanied by an awareness of the human desire for counting, and some apes have demonstrated behaviors that are true counting and reading.
- o. A conscious awareness of, and interest in, similar to that of human children, pretend play. This can be accompanied by a fascination with that play. This can take the form of object play, as when figures (toys representing apes) are engaged in actions of pretend attack. It can also take the form of pretending to do things to others such as pretending to be afraid, pretending to be angry, pretending to be asleep, pretending to hide, pretending to be another entity (as in wearing a mask), or pretending not to hear or see something obvious. This fascination can extend to pretending to do things to other chimpanzee and/or bonobos to determine if they

understand the pretense; for example whether other bonobos or chimpanzees understand that a plastic snake is not real, or that a person in a gorilla suit is not a gorilla.

- p. A conscious awareness of the power of deceit. This includes knowledge of “good” and “bad” and the capacity to label one’s own actions as belonging to one or the other of these categories.
- q. A conscious awareness of their ability to plan and co-ordinate group actions. This can be as simple as making a plan to make a fire and being sure that the needed items are packed, or as complex as making a plan to attack human beings who are perceived as deceitful or devious. Such plans are exchanged vocally and coordinated across space and time.
- r. A conscious awareness of the need to attempt to form connections with human beings on levels that human beings can understand. As experience with a variety of humans began to take place, the apes recognized that they needed to stretch their communicative competencies to try and enable human beings to understand their communications, their rules, and their view of what moral treatment entailed.

(Savage-Rumbaugh Supp. Aff. at ¶19).

C. NATIONAL INSTITUTION OF HEALTH STUDIES AND SAVE THE CHIMPS

On June 26, 2013, the National Institutes of Health (“NIH”) announced the agency’s decisions with respect to recommendations concerning the use of chimpanzees in NIH-supported research by The Working Group on the Use of Chimpanzees in NIH-Supported Research within the Council of Councils’ Recommendation. (Affidavit of Steven M. Wise (“Wise Aff.”) annexed as Exhibit A) (*Stanley*). These included acceptance of the following recommendations of The Working Group:

1. Working Group Recommendation EA1: “Chimpanzees must have the opportunity to live in sufficiently large, complex, multi-male, multi-female social groupings, ideally consisting of at least 7 individuals. Unless dictated by clearly documented medical or social circumstances, no chimpanzee should be required to live alone for extended periods of time. Pairs, trios, and even small groups of 4 to 6 individuals do not provide the social complexity required to meet the social needs of this cognitively advanced species. When chimpanzees need to be housed in groupings that are smaller than ideal for longer than necessary, for example, during routine veterinary examinations or when they are introduced to a new social group, this need should be regularly reviewed and documented by a veterinarian and a primate behaviorist.” (Wise Aff. Ex. A, p. 5) (*Stanley*).
2. Working Group Recommendation EA4: “Chimpanzees should have the opportunity to climb at least 20 ft (6.1m) vertically. Moreover, their environment must provide enough climbing opportunities and space to allow all members of larger groups to travel, feed, and rest in elevated spaces.” (*Id.* at Ex. A, pp. 8-9).
3. Working Group Recommendation EA5: “Progressive and ethologically appropriate management of chimpanzees must include provision of foraging opportunities and diets that are varied, nutritious, and challenging to obtain and process.” (*Id.* at Ex. A, pp. 9-10).
4. Working Group Recommendation EA6: “Chimpanzees must be provided with materials to construct new nests on a daily basis.” The NIH *accepted* this recommendation. (*Id.* at Ex. A, pp. 10-11).
5. Working Group Recommendation EA8: “Chimpanzee management staff must include experienced and trained behaviorists, animal trainers, and enrichment specialists to foster positive human-animal relationships and provide cognitive stimulation[.]” (*Id.* at Ex. A, pp. 11-12).

Sitting on 190 acres in Fort Pierce, Florida, Save the Chimps provides permanent homes for roughly 260 chimpanzees on twelve three-to-five-acre open-air islands that contain hills and

climbing structures and that provide the opportunity for the chimpanzees to make choices about their daily activities. (Affidavit of Molly Polidoroff (“Polidoroff Aff.”) at ¶7, ¶10). Chimpanzees who previously lived alone or in very small groups for decades become part of large and natural chimpanzee families. (*Id.* at ¶7). Grass, palm trees, hills, and climbing structures allow the chimpanzees places to run and roam, visit with friends, bask in the sun, or curl up in the shade, or whatever else they may wish to do. (*Id.* at ¶10). Save the Chimps has over fifty employees including two full time veterinarians that provide twenty-four-hour coverage with a support staff of technicians and assistants. (*Id.* at ¶9, ¶15)

III. ARGUMENT

A. THE NhRP HAS STANDING TO BRING THIS HABEAS CORPUS PETITION.

Anglo-American law has long recognized that third parties may bring habeas corpus cases on behalf of detained third parties. CPLR 7002(a) provides: “[a] person illegally imprisoned or otherwise restrained of liberty within the state, *or one acting on his behalf* . . . may petition without notice for a writ of habeas corpus to inquire into the cause of such detention and for deliverance.” (emphasis added). *E.g.*, *Somerset v. Stewart*, Lofft 1, 98 Eng. Rep. 499 (K.B. 1772) (unrelated third parties sought common law writ of habeas corpus on behalf of black slave imprisoned on a ship); *Case of the Hottentot Venus*, 13 East 185, 104 Eng. Rep. 344 (K.B. 1810) (Abolitionist Society sought common law writ of habeas corpus to determine whether an African woman was being exhibited in London of her own free will).

Justice Jaffe correctly found that the NhRP had standing in *Stanley*, explaining as is relevant here: “[a]s the statute places no restriction on who may bring a petition for habeas on behalf of the person restrained, . . . petitioner has met its burden of demonstrating that it has standing.” *Stanley*, 16 N.Y.S.3d at 905. This ruling is supported by a long line of New York cases recognizing broad common law next friend representation in habeas corpus cases. *See Lemmon v. People*, 20 N.Y. 562 (1860) (as he had in other cases, the free black abolitionist dock worker, Louis Napoleon, sought a writ of habeas corpus on behalf of eight detained slaves with

whom he had no relationship); *Holzer v. Deutsche Reichsbahn Gesellschaft*, 290 N.Y.S. 181, 192 (Sup. Ct. 1936) (“In 1852 Mrs. Lemmon, of Virginia, proceeded to Texas via New York, with eight negro slaves. . . . Upon her arrival in New York a free negro, as next friend, obtained a writ of habeas corpus which was sustained.”), *aff’d in part, modified in part*, 277 N.Y. 474 (1938); *In re Kirk*, 1 Edm. Sel. Cas. 315 (N.Y. Sup. Ct. 1846) (as he would in *Lemmon, supra*, the dock worker, Louis Napoleon, sought a writ of habeas corpus on behalf of a slave with whom he had no relationship); *McLeod*, 3 Hill at 647 note j (“every Englishman . . . imprisoned by any authority . . . has an undoubted right, by his agents or *friends*, to . . . obtain a writ of habeas corpus”) (citations omitted, emphasis added). *See also People ex rel. Turano v. Cunningham*, 57 A.D.2d 801 (1st Dept. 1977) (habeas corpus petition filed by “next friend” of incarcerated inmate); *State v. Lascaris*, 37 A.D.2d 128 (4th Dept. 1971); *People ex rel. Hubert v. Kaiser*, 150 A.D. 541, 544 (1st Dept. 1912) (habeas corpus petition filed by “next friend” of incarcerated inmate); *People ex rel. Sheldon v. Curtin*, 152 A.D. 364 (4th Dept. 1912) (habeas corpus petition filed by “next friend” of woman detained at the Western House of Refuge for Women); *People ex rel. Rao v. Warden of City Prison*, 11 N.Y.S.2d 63 (Sup. Ct. 1939) (habeas corpus petition filed by “next friend” of prisoner). The NhRP therefore has standing to seek a writ of habeas corpus and order to show cause on behalf of Tommy.

B. VENUE IS PROPER IN NEW YORK COUNTY.

Against a claim of improper venue, Justice Jaffe ruled that venue was proper in New York County, despite the fact that Hercules and Leo were being detained in Suffolk County. *Stanley*, 16 N.Y.S.3d at 905-07. CPLR 7002(b) provides, in relevant part: “a petition for the writ shall be made to: 1. the supreme court in the judicial district in which the person is detained; or . . . 3. *any justice of the supreme court[.]*” (emphasis added). *See also People v. Hanna*, 3 How. Pr. 39, 41-43 (N.Y. Sup. Ct. 1847) (“a justice of the supreme court has power, under the provisions of the statute, to allow this writ, notwithstanding there may be an officer in the county where the relator is alleged to be restrained of his liberty, authorised to exercise the same power”).

The *Stanley* order to show cause was properly made returnable to New York County just as an order to show cause would properly be made returnable to New York County in the present case. Pursuant to CPLR 7004(c), a writ *must* be returnable to the county in which it is issued except: a) where the writ is to secure the release of a person from a “state institution,” it must be made returnable to the county of detention; or b) where the petition was made to a court outside of the county of detention, the court *may* make the writ returnable to such county. In *Stanley*, Justice Jaffe properly found that Hercules and Leo were not being detained in a “state institution” within the meaning of 7004(c), even though Hercules and Leo were being detained in a state educational facility, because that section applies only to state institutions that incarcerate inmates or institutionalize mental patients; otherwise the writ should normally be returned to the county of issuance. 16 N.Y.S.3d at 907. *See Hogan v. Culkin*, 18 N.Y.2d 330, 333 (1966); *Application of Holbrook*, 220 N.Y.S.2d 382, 384 (Sup. Ct. 1961). The “purpose of the rule is to relieve the wardens of State prisons of having to transport the inmates to a county other than the county of detention and incur travel expenses to distant courthouses.” *People ex rel. Cordero v. Thomas*, 329 N.Y.S.2d 131, 133-34 (Sup. Ct. 1972) (return was not required to be made in the county of detention in an Adolescent Remand Shelter, as the “relator is not being detained in a State prison” and thus, the “writ was properly issued and made returnable in Kings County”). *See also State ex rel. Cox v. Appelton*, 309 N.Y.S.2d 290, 292 (Sup. Ct. 1970) (holding that a state-run training school for children was not a “state institution” within the meaning of the rule and thus, the writ was properly returned to the county where the suit was filed). *A fortiori*, venue is proper here because unlike Hercules and Leo, Tommy is not being detained in a state facility of any kind, but in a private trailer park. As venue was proper in New York County in Hercules and Leo’s case, it is proper here.

Furthermore, as with Hercules and Leo, the NhRP does not demand Tommy’s production, but an order requiring Respondents to show cause, within the meaning of CPLR 7003(a), why Tommy “should not be released.” The provision regarding “state institutions” was added to the statute solely to “obviate the administrative, security and financial burdens entailed

in requiring prison authorities to produce inmates pursuant to such writs in a county other than that in which they were detained[.]” *Hogan*, 18 N.Y.2d at 333 (citations omitted). None of those concerns are present. *See Appelton*, 309 N.Y.S.2d at 292 (where habeas corpus action was commenced by show cause order because petitioner’s production was not necessary, writ was returnable to the county of filing rather than the county of detention).

Justice Jaffe rejected Respondents’ arguments to the contrary explaining:

Here, if issued, the writ would not be directed to a state prison warden. Consequently, as “in all other cases,” the writ here is to be made returnable in the county of issuance, namely, New York County. That the University is denominated a “state-operated institution” in the Education Law is irrelevant. Moreover, where no factual issues are raised, no one sought the production in court of Hercules or Leo, and “[a]ll that remains is for the Court to issue its decision,” a change of venue is not required. (*Chaney v. Evans*, 2013 WL 2147533 at *3, 2013 N.Y. Slip Op 31025[U] [Sup Ct, Franklin County 2013] [even though petitioner administratively transferred to other county during pendency of habeas proceeding and no longer detained in Franklin County, change of venue not required]).

16 N.Y.S.3d at 907-08. Justice Jaffe added: “In any event, ‘[s]o primary and fundamental’ is the writ of habeas corpus ‘that it must take precedence over considerations of procedural orderliness and conformity.’ . . . And the Legislature was so concerned that judges issue valid writs that it enacted a provision, unique in all respects, requiring that a judge or group of judges who refuse to issue a valid writ must forfeit \$1,000 to the person detained.” *Id.* (citations omitted).

**C. NEITHER RES JUDICATA NOR COLLATERAL ESTOPPEL BARS THE
NHRP’S PETITION FOR A COMMON LAW WRIT OF HABEAS CORPUS
AND ORDER TO SHOW CAUSE.**

In *Stanley*, Justice Jaffe ruled that neither issue preclusion nor claim preclusion barred the Nhrp’s second petition on behalf of Hercules and Leo. *Id.* at 908-10. The same applies to Tommy’s case at bar. *See People ex rel. Lawrence v. Brady*, 56 N.Y. 182, 192 (1874); *People ex rel. Leonard HH v. Nixon*, 148 A.D.2d 75, 79 (3d Dept. 1989); *People ex rel. Sabatino v. Jennings*, 221 A.D. 418, 420 (4th Dept. 1927), *aff’d*, 246 N.Y. 624 (1927). CPLR 7003(b) “continues the common law and present position in New York that res judicata has no application to the writ.” ADVISORY COMMITTEE NOTES TO CPLR 7003(b). Where “a writ of

habeas corpus has been dismissed and the prisoner continues to be held in custody, the prior adjudication is held not to be a bar to a new application for a writ of habeas corpus, even though the grounds may be the same as those previously passed upon.” *Post v. Lyford*, 285 A.D. 101, 104-05 (3d Dept. 1954). *People ex rel. Butler v. McNeill*, 219 N.Y.S.2d 722, 724 (Sup. Ct. 1961), was the petitioner’s fifth application for habeas corpus to the court, and in none of the previous four was he successful. Nevertheless, the court ruled that “the ban of res judicata cannot operate to preclude the present proceeding.” *Id.*

The rule “permitting relitigation . . . after the denial of a writ, is based upon the fact that the detention of the prisoner is a continuing one and that the courts are under a continuing duty to examine into the grounds of the detention.” *Id.* Therefore, “a court is always competent to issue a new habeas corpus writ on the same grounds as a prior dismissed writ.” *People ex rel. Anderson v. Warden, New York City Correctional Instn. for Men*, 325 N.Y.S.2d 829, 833 (Sup. Ct. 1971). *See Brady*, 56 N.Y. at 191-92; *Post*, 285 A.D. at 104-05; *Jennings*, 221 A.D. at 420; *Losaw v. Smith*, 109 A.D. 754 (3d Dept. 1905); *In re Quinn*, 2 A.D. 103, 103-04 (2d Dept. 1896), *aff’d*, 152 N.Y. 89 (1897); *McNeill*, *supra*. This is because “[c]onventional notions of finality of litigation have no place where life or liberty is at stake[.]” *Sanders v. United States*, 373 U.S. 1, 8 (1963). The “inapplicability of res judicata to habeas, then, is inherent in the very role and function of the writ.” *Id. See Post*, 285 A.D. at 104-05.

A court is not required to issue a writ from a successive petition for a writ of habeas corpus only if: (1) the legality of a detention has been previously determined by a court of the State in a prior proceeding for a writ of habeas corpus, (2) the petition presents no ground not theretofore presented and determined, and (3) the court is satisfied that the ends of justice will not be served by granting it. CPLR 7003(b). In this case none of the elements are satisfied. *See Stanley*, 16 N.Y.S.3d at 909 (“the governing statute itself poses no obstacle to this litigation”).

The legality of Tommy’s detention has not been determined in a prior proceeding for a

writ of habeas corpus by a court of this State.¹¹ Notwithstanding the fact that the NhRP was granted an *ex parte* hearing on the issue of the availability of the common law writ of habeas corpus to chimpanzees, the Fulton County Supreme Court refused to issue the requested Order to Show Cause and therefore did not determine the legality of Tommy's detention. (Habeas Petition, Ex. 1). That alone is insufficient for preclusion, as Justice Jaffe noted, "[r]espondents cite no authority for the proposition that a declined order to show cause constitutes a determination on the merits, that it has any precedential value, or that a justice in one county is precluded from signing an order to show cause for relief previously sought from and denied by virtue of a justice in another county refusing to sign the order to show cause." *Stanley*, 16 N.Y.S.3d at 909. The Third Department then affirmed the lower court ruling, without reaching the legality of Tommy's detention, on the erroneous and novel ground that a chimpanzee such as Tommy is unable to shoulder duties and responsibilities and therefore is not a "person" for purposes of demanding a common law writ of habeas corpus. *Id.* at 902. The NhRP now attaches Supplemental Affidavits to its Habeas Petition demonstrating that chimpanzees such as Tommy can shoulder duties and responsibilities. This Habeas Petition therefore presents new grounds "not theretofore presented or determined" in the first petition filed by the NhRP on behalf of Tommy in the Supreme Court, Fulton County.

Because the Fulton County Supreme Court refused to issue the order to show cause, the NhRP was no more given the required full and fair opportunity to litigate the legal issue of Tommy's personhood than it was given a full and fair opportunity to litigate the legal personhood of Hercules and Leo in Suffolk County. *Stanley*, 16 N.Y.S.3d at 909. *See Allen v. New York State Div. of Parole*, 252 A.D.2d 691 (3d Dept. 1998) (court refused subsequent petition as petitioner had been afforded "a full and fair opportunity . . . to litigate the issues"); *McAllister v. Div. of Parole of New York State*, 186 A.D.2d 326, 327 (3d Dept. 1992) (court

¹¹ The burden is on the party asserting preclusion to demonstrate that any prior determination was on the merits. *Clark v. Scoville*, 198 N.Y. 279, 283-84 (1910); *Litz Enterprises, Inc. v. Stand. Steel Industries, Inc.*, 57 A.D.2d 34, 38 (4th Dept. 1977).

refused subsequent petition as petitioner “had a full and fair opportunity to litigate the timeliness issue in the habeas corpus proceeding”).

Significantly, this second attempt to invoke a common law writ of habeas corpus on behalf of Tommy is necessary only because the Third Department erroneously concluded the NhRP was unable to invoke the writ of habeas corpus at all, *infra*. Most importantly, if the NhRP is correct in its assertion of personhood and is refused the opportunity for a full and fair hearing, Tommy will be condemned to a lifetime of imprisonment and suffer certain destruction of his autonomy, social isolation, intellectual, emotional, and social stunting, severe emotional distress, feelings of hopelessness, and more.

D. A PERSON ILLEGALLY IMPRISONED IN NEW YORK IS ENTITLED TO A COMMON LAW WRIT OF HABEAS CORPUS.

The common law writ of habeas corpus “is deeply rooted in our cherished ideas of individual autonomy and free choice.” *Stanley*, 16 N.Y.S.3d at 903-04. “[T]he parameters of legal personhood have long been and will continue to be discussed and debated by legal theorists, commentators, and courts, and will not be focused on semantics or biology, or even philosophy, but on the proper allocation of rights under the law, asking, in effect, who counts under our law.” *Id.* at 912 (citing *Byrn*, 31 N.Y.2d at 201). In sum, “person” has *never* been synonymous with “human being.” Instead, it designates Western law’s most fundamental category by identifying those entities capable of possessing legal rights.

The NhRP does not claim Respondents are violating any federal, state, or local animal welfare law in the *manner* in which they are detaining Tommy. The issue in this case is not Tommy’s welfare, any more than a human prisoner’s welfare is at issue when he is being detained against his will in a habeas corpus case. The issue is whether Tommy, as an autonomous and self-determining being, may be legally detained at all.

As this section will demonstrate, the New York common law of *liberty* is, like the common law writ of habeas corpus itself, deeply rooted in autonomy. *Stanley*, 16 N.Y.S.3d at 903-04. It is a supreme common law value that trumps even the State’s interest in life, and is

protected as a fundamental right that may be vindicated through a common law writ of habeas corpus. New York common law *equality* forbids discrimination founded upon unreasonable means or unjust ends, and protects Tommy's common law right to bodily liberty free from unjust discrimination. Tommy's common law classification as a "legal thing," rather than "legal person," rests upon the illegitimate end of enslaving him. Simultaneously, it classifies Tommy by the single trait of being a chimpanzee, and then denies him the capacity to have any legal right. This discrimination is so fundamentally inequitable it violates basic common law equality. The New York legislature's recognition that some nonhuman animals, such as chimpanzees, are capable of having personhood rights by expressly allowing them to be trust "beneficiaries" pursuant to EPTL 7-8.1 affirms that personhood may apply to natural entities other than human beings.

1. "Person" is not synonymous with "human being," but designates an entity with the capacity for legal rights.

"[U]pon according legal personality to a thing the law affords it the rights and privileges of a legal person[.]" *Byrn*, 31 N.Y.2d at 201 (citing John Chipman Gray, *The Nature and Sources of the Law*, Chapter II (1909) ("Gray"); Hans Kelsen, *General Theory of Law and State* 93-109 (1945); George Whitecross Paton, *A Textbook of Jurisprudence* 349-356 (4th ed., G.W. Paton & David P. Derham eds. 1972) ("Paton"); Wolfgang Friedman, *Legal Theory* 521-523 (5th ed. 1967)). Legal persons possess inherent value; "legal things," possessing merely instrumental value, exist for the sake of legal persons. 2 William Blackstone, *Commentaries on the Laws of England* *16 (1765-1769).

"Whether the law should accord legal personality is a policy question[.]" *Byrn*, 31 N.Y.2d at 201 (emphasis added). "Legal person" is not a biological concept; it does not "necessarily correspond" to the "natural order." *Id.*; see *Stanley*, 16 N.Y.S.3d at 916-17 (same). It is not synonymous with human being. *Id.* See Paton, *supra*, at 349-50, *Salmond on Jurisprudence* 305 (12th ed. 1928) ("A legal person is any subject-matter other than a human being to which the law attributes personality. This extension, for good and sufficient reasons, of

the conception of personality beyond the class of human beings is one of the most noteworthy feats of the legal imagination,”); IV Roscoe Pound, *Jurisprudence* 192-93 (1959). “Legal personality may be granted to entities other than individual human beings, e.g. a group of human beings, a fund, an idol.” George Whitecross Paton, *A Textbook of Jurisprudence* 393 (3rd ed. 1964). “There is no difficulty giving legal rights to a supernatural being and thus making him or her a legal person.” Gray, *supra* Chapter II, 39 (1909), citing, among other authorities, those cited in *Byrn*, *supra*.

The NhRP’s arguments, *infra*, that an autonomous being is entitled to the common law right to bodily liberty protected by the common law writ of habeas corpus and CPLR Article 70, both as a matter of common law liberty and common law equality, are the policy arguments required by *Byrn*. See *Stanley*, 16 N.Y.S.3d at 911-12. The Court of Appeals’ use of the word “policy” in *Byrn* encompasses not just what is good and bad, but what is right or wrong, meaning “principle.” Benjamin N. Cardozo, *The Nature of the Judicial Process* 66 (Yale Univ. Press 1921) (“Ethical considerations can no more be excluded from the administration of justice ... than one can exclude the vital air from his room and live.”), quoting John F. Dillon, *The Laws and Jurisprudence of England and America* 18 (Little, Brown & Co. 1894), quoted by Roscoe Pound, 27 HARVARD L. REV. 731, 722 (1914). The common law of personhood is no different than any other determination of the common law, which itself “consists of a few broad and comprehensive principles founded on reason, natural justice, and enlightened public policy, modified and adapted to all the circumstance of all the particular cases that fall within it.” *Norway Plains Co. v. Boston and Maine Railroad*, 67 Mass (1 Gray) 263, 367 (1854) (Shaw, C.J.)

“Person” is a legal “term of art.” *Wartelle v. Womens' & Children's Hosp.*, 704 So. 2d 778, 781 (La. 1997). Persons count in law; things don’t. See Note, *What We Talk About When We Talk About Persons: The Language of a Legal Fiction*, 114 HARV. L. REV. 1745, 1746 (2001). “[T]he significant fortune of legal personality is the capacity for rights.” IV Roscoe Pound, *Jurisprudence* 197 (1959). “Person” has never been equated with being human and many

humans have not been persons. “Person” may be narrower than “human being.” A human fetus, which the *Byrn* Court acknowledged, 31 N.Y.2d at 199, “is human,” but did not characterize as a Fourteenth Amendment “person.” *See also Roe v. Wade*, 410 U.S. 113 (1973). Human slaves were not “persons” in New York State until the last slave was freed in 1827. Human slaves were not “persons” throughout the entire United States prior to the ratification of the Thirteenth Amendment to the United States Constitution in 1865. *See, e.g., Jarman v. Patterson*, 23 Ky. 644, 645-46 (1828) (“Slaves, although they are human beings . . . (are not treated as a person, but (*negotium*), a thing”).¹² Women were not “persons” for many purposes until well into the twentieth century. *See* Robert J. Sharpe and Patricia I. McMahon, *The Persons Case – The Origins and Legacy of the Fight for Legal Personhood* (2007). As Justice Jaffe noted in *Stanley*, “Married women were once considered the property of their husbands, and before marriage were often considered family property, denied the full array of rights accorded to their fathers, brothers, uncles, and male cousins.” 16 N.Y.S.3d at 912 (citing Saru M. Matambanadzo, *Embodying Vulnerability: A Feminist Theory of the Person*, 20 *Duke J Gender L & Policy* 45, 48–51 [2012]).

“Person” may designate an entity qualitatively different from a human being. Corporations have long been “persons” within the meaning of the Fourteenth Amendment to the United States Constitution. *Santa Clara Cnty. v. Southern Pacific Railroad*, 118 U.S. 394 (1886). An agreement between the indigenous peoples of New Zealand and the Crown, p.10, ¶¶ 2.6, 2.7, and 2.8, recently designated New Zealand’s Whanganui River Iwi as a legal person that owns its riverbed.¹³ The Indian Supreme Court has designated the Sikh’s sacred text as a “legal person.” *Shiromani Gurdwara Parbandhak Committee Amritsar v. Som Nath Dass*, A.I.R. 2000 S.C. 421. Pre-Independence Indian courts designated Punjab mosques as legal persons, to the same end.

¹² *E.g., Trongett v. Byers*, 5 Cow. 480 (N.Y. Sup. Ct. 1826) (recognizing slaves as property), *Smith v. Hoff*, 1 Cow. 127, 130 (N.Y. 1823) (same); *In re Mickel*, 14 Johns. 324 (N.Y. Sup. Ct. 1817) (same); *Sable v. Hitchcock*, 2 Johns. Cas. 79 (N.Y. Sup. Ct. 1800) (same).

¹³ *WHANGANUI IWI and THE CROWN* (August 30, 2012), available at <http://nz01.terabyte.co.nz/ots/DocumentLibrary%5CWhanganuiRiverAgreement.pdf> (last viewed September 3, 2015).

Masjid Shahid Ganj & Ors. v. Shiromani Gurdwara Parbandhak Committee, Amritsar, A.I.R. 1938 369, para. 15 (Lahore High Court, Full Bench). A pre-Independence Indian court designated a Hindu idol as a “person” with the capacity to sue. *Pramath Nath Mullick v. Pradyunna Nath Mullick*, 52 Indian Appeals 245, 264 (1925).

In short, the struggles over the legal personhood of human fetuses,¹⁴ slaves,¹⁵ Native Americans,¹⁶ women,¹⁷ corporations,¹⁸ and other entities have never been over whether they are human, or anything other than whether justice demands that they “count.” See *Stanley*, 16 N.Y.S.3d at 912 (“the parameters of legal personhood have long been and will continue to be discussed and debated by legal theorists, commentators, and courts, and will not be focused on semantics or biology, or even philosophy, but on the proper allocation of rights under the law, asking, in effect, who counts under our law”). As to who “counts,” Justice Jaffe explained that the “concept of legal personhood, that is, who or what may be deemed a person under the law, and for what purposes, has evolved significantly since the inception of the United States.” *Id.* Not “very long ago, only caucasian male, property-owning citizens were entitled to the full panoply of legal rights under the United States Constitution.” *Id.* See also *id.* at 912 (“For purposes of establishing rights, the law presently categorizes entities in a simple, binary, ‘all-or-nothing’ fashion. . . . Animals, including chimpanzees and other highly intelligent mammals, are considered as property under the law.”). Justice Jaffe opined that “[i]f rights were defined by

¹⁴ *Roe*, 410 U.S. 113; *Byrn*, 31 N.Y.2d 194.

¹⁵ Compare *Trongett v. Byers*, 5 Cow. 480 (N.Y. Sup. Ct. 1826) (recognizing slaves as property), *Smith v. Hoff*, 1 Cow. 127, 130 (N.Y. 1823) (same), *In re Mickel*, 14 Johns. 324 (N.Y. Sup. Ct. 1817) (same); *Sable v. Hitchcock*, 2 Johns. Cas. 79 (N.Y. Sup. Ct. 1800) (same) with *Lemmon*, 20 N.Y. 562 (slaves are free) and *Somerset*, 98 Eng. Rep. at 510 (slavery is “so odious that nothing can be suffered to support it but positive law”) (emphasis added).

¹⁶ *United States ex rel. Standing Bear v. Crook*, 25 F. Cas. 695, 697 (D. Neb. 1879) (Over the objections of the United States, Native Americans were deemed “persons” within the meaning of the Federal Habeas Corpus Act).

¹⁷ *In re Goodell*, 39 Wis. 232, 240 (1875) (women could not be lawyers); Blackstone, *Commentaries on the Law of England* *442 (1765-1769) (“By marriage, the husband and wife are one person in law: that is the very being or legal existence of the woman is suspended during the marriage . . .”).

¹⁸ While corporations are Fourteenth Amendment “persons,” *Santa Clara*, 118 U.S. 394, they are not protected by the Fifth Amendment’s Self-Incrimination Clause. *Bellis v. United States*, 417 U.S. 85 (1974).

who exercised them in the past, then received practices could serve as their own continued justification and new groups could not invoke rights once denied.” *Id.* (citing *Obergefell v. Hodges*, 135 S.Ct. 2602 (2015)).¹⁹

That Tommy is a chimpanzee does not necessarily mean that he may never count as a person. Who is deemed a person is a “matter which each legal system must settle for itself.” *Byrn*, 31 N.Y.2d at 202 (quoting *Gray*, *supra*, at 3). The historic question is whether Tommy “counts” for the purpose of a common law writ of habeas corpus. In the following sections, the NhRP will demonstrate that, both as a matter of New York common law liberty and common law equality, Tommy should “count” and be recognized as a legal person possessed of the common law right to bodily liberty that the common law of habeas corpus protects.

2. The Third Department’s *Lavery* decision does not bind this Court.

The Third Department’s *Lavery* decision that limits “persons” to those who can shoulder duties and responsibilities does not bind this Court. A court’s determination becomes “binding” only when it involves “settled principles of law and legal issues.” *State v. Moore*, 298 A.D. 2d 814, 815 (3d Dept. 2002). *E.g.*, *Samuels v. High Braes Refuge, Inc.*, 8 A.D.3d 1110, 1111 (4th Dept. 2004); *Killeen v. Crosson*, 218 A.D. 2d 217, 220 (4th Dept. 1996). *Lavery* did not involve a settled principle of law or legal issue for the following reasons.

First, *Lavery*’s assertion that a chimpanzee may not be a legal person for purposes of a common law writ of habeas corpus and Article 70 because he is unable to shoulder duties and responsibilities was wrong as a matter of law. In his letter brief to the Court of Appeals in support of the NhRP’s motion for further review, Harvard Law School Professor Laurence H. Tribe noted that “the lower courts fundamentally misunderstood the purpose of the common law writ of habeas corpus” and “reached its conclusion on the basis of a fundamentally flawed definition of legal personhood.” *Letter Brief of Amicus Curiae Laurence H. Tribe*, at 1, a true and correct copy of which is attached to the Habeas Petition as Exhibit 6. In his letter brief to the

¹⁹ Similarly, Justice Cardozo noted that the personhood of corporations was the product of logic and not history, Benjamin N. Cardozo, *The Nature of the Judicial Process* 53 (Yale Univ. Press 1921).

Court of Appeals, Professor Justin Marceau stated: “This may be one of the most important habeas corpus issues in decades and the lower court’s resolution of the matter is in fundamental tension with core tenets of the historical writ of habeas corpus.” *Letter Brief of Amicus Curiae Justin Marceau*, at 3, a true and correct copy of which is attached to the Habeas Petition as Exhibit 7. Taken together, it is clear that *Lavery* does not enunciate a settled principle of law or legal issue.

Second, though the Fourth Department decided *Presti* a month after the Third Department decided *Lavery*, it failed to cite *Lavery* for the proposition that a chimpanzee could not be a “person” for the purpose of a common law writ of habeas corpus, or for any other proposition. Instead, the *Presti* court twice suggested, without deciding, that it might agree with the NhRP’s claim that Tommy was a “person” for the purpose of Article 70, stating, “[r]egardless of whether we agree with petitioner’s claim that Tommy is a person within the statutory and common law definition of the writ . . .” and “even assuming, *arguendo*, that we agreed with petitioner that Tommy should be deemed a person for the purpose of the application . . .” 124 A.D.3d at 1335. The *Presti* court would not have said these things if the issue of chimpanzees not being persons for the purpose of habeas corpus was settled.

Third, *Lavery* directly conflicts with the decision of the Court of Appeals in *Byrn*, 31 N.Y. 2d 194. As noted, in *Byrn*, the Court of Appeals made clear that the determination of personhood is a matter of public policy, not biology (in *Byrn* a fetus was declared both human and not a person). *Id.* at 201. *Lavery* erroneously concluded that only a human could be a “person,” and as a result, failed to address the detailed public policy analysis in favor of personhood that the NhRP proffered in its brief and that *Byrn* required. 124 A.D.3d at 148-53. When faced with a choice of being bound by the Court of Appeals decision in *Byrn*, which demands that a decision regarding personhood be made only after a careful public policy analysis, or the conflicting decision of the Third Department in *Lavery*, which makes personhood a mere biological decision, this Court must be bound by *Byrn*.

3. Lavery was wrongly decided.

- a. The ability to shoulder duties and responsibilities is not, and has never been, necessary for legal personhood, especially for the purpose of a common law writ of habeas corpus.

Lavery is an outlier. It was the first decision in Anglo-American history to hold that an inability to shoulder duties and responsibilities is a sufficient ground for denying a fundamental common law right to an individual (except in the interest of the individual's own interest), much less an autonomous, self-determining entity who is seeking the relief of a common law writ of habeas corpus. The *Lavery* court wrote that "animals have never been considered persons for the purpose of habeas corpus relief, nor have they been explicitly considered as persons or entities for the purpose of state or federal law." *Lavery*, 124 A.D.3d at 150. However, that is because no federal or state court had ever rejected the claim of personhood on behalf of an autonomous and self-determining nonhuman animal for the purpose of seeking common law habeas corpus relief, as no such claim had ever been presented. Moreover, New York expressly allows nonhuman animals to be trust beneficiaries and provides for an enforcer for a nonhuman animal beneficiary who "performs the same function as a guardian ad litem for an incapacitated person[.]" *In re Fouts*, 677 N.Y.S.2d 699, 700 (Sur. Ct. 1998). *See* argument, *infra* at Section III-E-4. The legislature's refusal to condition the personhood of nonhuman animal beneficiaries upon their ability to shoulder duties and responsibilities, *directly contradicts* the Third Department's assertion that legal personhood in New York is premised upon the ability to shoulder duties and responsibilities and that no nonhuman animal may be a "person" for any purpose.

Moreover, none of the cases the Third Department cited supported its proposition quoted above. The decisions were all "standing" cases that were dismissed pursuant to Article III of the United States Constitution or because the specific definition of "person" provided by the enabling statute did not include nonhuman animals. Not one case involved common law claims, as in the case of Tommy or any of the other imprisoned chimpanzees; all involved statutory or constitutional interpretation. In *Lewis v. Burger King*, 344 Fed. Appx. 470 (10th Cir. 2009), the

pro se plaintiff, untrained in law, claimed her service dog had been given Article III standing to sue under the Americans with Disabilities Act of 1990, a claim the federal court properly rejected. In *Cetacean Community v. Bush*, 386 F. 3d 1169 (9th Cir. 2004), the federal court held that all the cetaceans of the world had not been given Article III standing to sue under the Federal Endangered Species Act and were not “persons” within that statute’s definition of “person.” In *Tilikum ex rel. People for the Ethical Treatment of Animals, Inc. v. Sea World Parks & Entertainment*, 842 F. Supp.2d 1259 (S.D. Cal. 2012), the federal district court held that the legislative history of the Thirteenth Amendment to the United States Constitution (which, unlike the Fourteenth Amendment, does not contain the word “person”) makes clear that it was only intended to apply to human beings. Finally, in *Citizens to End Animal Suffering & Exploitation, Inc. v. New England Aquarium*, 836 F. Supp. 45 (D. Mass. 1993), the federal district court dismissed the case on the ground of Article III standing, stating that a dolphin was not a “person” within the meaning of Section 702 of Title 5 of the Federal Administrative Procedures Act.

The courts in the above cases however, agreed that a nonhuman animal could be a “person” if Congress so intended, but concluded that, with respect to the statutes or constitutional provisions involved in these cases, Congress had not so intended. *Lewis*, 344 Fed. Appx. at 472; *Cetacean Community*, 386 F.3d at 1175-1176; *Tilikum*, 842 F. Supp.2d at 1262, n.1; *Citizens to End Animal Suffering & Exploitation, Inc.*, 842 F. Supp.2d at 49.

The NhRP, which was an *amicus curiae* in the *Tilikum* case *supra*, and whose counsel was plaintiff’s counsel in *Citizens to End Animal Suffering & Exploitation, Inc.*, *supra*, did not bring the cases of Tommy, Kiko, and, Hercules or Leo in a federal court subject to Article III.²⁰ Nor, importantly, did the NhRP base its claims on federal or state statutes or on constitutional provisions. It instead sought a New York writ of habeas corpus, which substantively is entirely a matter of common law. *See Lavery*, 124 A.D.3d at 150 (“we must look to the common law

²⁰ The NhRP (under its former name of The Center for the Expansion of Fundamental Rights, Inc.) filed an *amicus* brief in the *Tilikum* case in which it argued that the capacity of the orcas to sue should be determined by their domicile, as the Court in *Citizens to End Animal Suffering & Exploitation, Inc.*, 842 F. Supp.2d at 49, had stated.

surrounding the historic writ of habeas corpus to ascertain the breadth of the writ's reach"); CPLR 7001 ("the provisions of this article are applicable to common law or statutory writs of habeas corpus").

Similarly, none of the three cited cases supported the Third Department's statement that "habeas corpus has never been provided to any nonhuman entity," *Lavery*, 124 A.D.3d at 150, if what that court meant was that no entity that could possibly be detained against its will has ever been denied a writ of habeas corpus. In *United States v. Mett*, 65 F. 3d 1531, 1534 (9th Cir. 1995), the federal court *permitted* a corporation to utilize a writ of coram nobis. In *Waste Management of Wisconsin, Inc. v. Fokakis*, 614 F. 2d 138, 140 (7th Cir. 1980) the federal court refused to grant habeas corpus to a corporation solely "because a corporation's entity status precludes it from being incarcerated or ever being held in custody." In *Sisquoc Ranch Co. v. Roth*, 153 F. 2d 437, 439 (9th Cir. 1946), the federal court held that the fact that a corporation has a contractual relationship with a human being did not give it standing to seek a writ of habeas corpus on its own behalf. Finally, in *Graham v. State of New York*, 25 A.D.2d 693 (3d Dept. 1966), the Court stated that the purpose of a writ of habeas corpus is to free prisoners from detention, not to secure the return of *inanimate* personal property, which was the relief demanded.²¹ In sum, no nonhuman who could possibly be imprisoned has ever demanded the issuance of a writ of habeas corpus, whether common law or statutory in the United States.

The reason there is no precedent for treating nonhuman animals as persons for the purpose of securing habeas corpus relief then is not because the claim has been rejected by the courts. It is because no nonhuman entity capable of being imprisoned (unlike a corporation), certainly not a nonhuman animal, and most certainly not an autonomous, self-determining being such as a chimpanzee, has ever demanded a writ of habeas corpus. The NhRP's cases are the first such demands ever made on behalf of a nonhuman animal in a common law jurisdiction. But the

²¹ The court in *Graham* relied on *People ex rel. Tatra v. McNeill*, 19 A.D.2d 845, 846 (2d Dept. 1963), which held that habeas corpus could not be used to secure the return of an inmate's funds. There was no argument that the money was a legal person in *McNeill*, whereas here, the NhRP has provided ample legal and scientific evidence that a chimpanzee has sufficient qualities for legal personhood.

novelty of their claim is no reason to deny Tommy, or any of the imprisoned chimpanzees, habeas corpus relief. *See, e.g., Crook*, 25 F. Cas. at 697 (that no Native American had previously sought relief pursuant to the Federal Habeas Corpus Act did not foreclose a Native American from being characterized as a “person” and being awarded the requested habeas corpus relief); *Somerset v. Stewart*, Lofft 1, 98 Eng. Rep. 499 (K.B. 1772) (that no human slave had ever been granted a writ of habeas corpus was no obstacle to the court granting one to the slave petitioner); *see also Lemmon*, 20 N.Y. 562.

In *Lavery*, 124 A.D.3d at 151, the court wrote:

[T]he ascription of rights has historically been connected with the imposition of societal obligations and duties. Reciprocity of rights and responsibilities stems from principles of social contract, which inspired the ideals of freedom and democracy at the core of our system. (see Richard L. Cupp, Jr., “Children, Chimps, and Rights: Arguments from ‘Marginal’ Cases,” 45 *Ariz. St. LJ* 1, 12-14 (2013); Richard L. Cupp, Jr., “Moving Beyond Animal Rights: A Legal Contractualist Critique,” 46 *San Diego L. Rev.* 27, 69-70 (2009); *see also Matter of Gault*, 387 U.S. 1, 20-21 (1967); *United States v. Barona*, 56 F.3d 1087, 1093-1094 (9th Cir. 1995), *cert. denied* 516 US 1092 (1996). Under this view, society extends rights in exchange for an express or implied agreement of its members to submit to social responsibilities. In other words, “Rights [are] connected to moral agency and the ability to accept societal responsibility for [those] rights” (Richard L. Cupp Jr., “Children, Chimps, and Rights: Arguments from ‘Marginal Cases,’” 45 *Ariz. St. LJ* 1, 13 (2013); Richard L. Cupp, Jr., “Moving Beyond Animal Rights: A Legal Contractualist Critique,” 46 *San Diego L. Rev.* 27, 69 (2009).

The *Gault* court merely stated that “[d]ue process of law is the primary and indispensable foundation of individual freedom. It is the basic and essential term in the social compact which defines the rights of the individual and delimits the powers which the state may exercise.” 387 U.S. at 20-21. There is no relevance to the case at bar. In *United States v. Barona*, 56 F.3d at 1093-94, the Ninth Circuit merely noted that resident aliens of the United States

must first show that they are among the class of persons that the Fourth Amendment was meant to protect . . . The Fourth Amendment therefore protects a much narrower class of individuals than the Fifth Amendment. Because our constitutional theory is premised in large measure on the conception that our Constitution is a “social contract” [citation omitted], “the scope of an alien’s rights depends intimately on the extent to which he has chosen to shoulder the burdens that citizens must bear.” [citations omitted] . . . “Not until an alien has assumed the complete range of obligations that we impose on the citizenry may he be considered one of ‘the people of the United States’ entitled to the full panoply of

rights guaranteed by our Constitution.” [citation omitted]. The term “People of the United States” includes “American citizens at home and abroad” and lawful resident aliens within the borders of the United States “who are victims of actions taken *in the United States by American officials* [citation omitted] (emphasis in original). It is yet to be decided, however, whether a resident alien has undertaken sufficient obligations of citizenship or has “otherwise developed sufficient connection with this country” [citation omitted] to be considered one of the “People of the United States” even when he or she steps outside the territorial borders of the United States.

This case is not relevant to the case at bar because it: (1) deals with an interpretation of the United States Constitution, rather than New York common law, and (2) concerns the interpretation of the constitutional phrase “the People of the United States,” not the New York common law meaning of the term “person,” which is the issue in the case at bar. Finally, the two law review articles cited by the *Lavery* court do not rely upon law or legal reasoning, but merely set forth Professor Cupp’s personal preference for an exceedingly narrow branch of philosophical theory of contractualism that arbitrarily excludes every nonhuman animal, while including every human being, in support of which he cites no cases.²² This caused the Third Department similarly to arbitrarily exclude every nonhuman animal, while including every human being.

Moreover, the writ of habeas corpus has *always* been applied to aliens and others who may not be a part of the fictitious “social contract.” In *Rasul v. Bush*, 542 U.S. 466, 481, 482 & n.11 (2004), the United States Supreme Court stated that:

Application of the habeas statute to persons²³ detained at the base (in Guantanamo) is consistent with the historical reach of the writ of habeas corpus. At common law, courts exercised habeas jurisdiction over the claims of aliens detained within sovereign territory of the realm, [n.11] *See, e.g., King v. Schiever*, 2 Burr. 765, 97 Eng. Rep. 551 (K.B.1759) (reviewing the habeas petition of a

²² Even contractualist philosophers may argue that it embraces nonhuman animals. *E.g.*, Thomas M. Scanlon, *What We Owe Each Other* 179, 183 (1998).

²³ The United States Supreme Court noted that, after the September 11, 2001 attack, “the President sent U.S. Armed Forces into Afghanistan to wage a military campaign against al Qaeda and the Taliban regime that had supported it. Petitioners in these cases are 2 Australian citizens and 12 Kuwaiti citizens who were captured abroad during hostilities between the United States and the Taliban.” 542 U.S. at 470-71. This Court may take judicial notice that not only were these petitioners not part of any “social contract,” but the United States alleged they desired to destroy whatever social contract may exist. Still they were eligible to seek a writ of habeas corpus.

neutral alien deemed a prisoner of war because he was captured aboard an enemy French privateer during a war between England and France); *Sommersett v. Stewart*, 20 How. St. Tr. 1, 79–82 (K.B.1772) (releasing on habeas an African slave purchased in Virginia and detained on a ship docked in England and bound for Jamaica); *Case of the Hottentot Venus*, 13 East 195, 104 Eng. Rep. 344 (K.B.1810) (reviewing the habeas petition of a “native of South Africa” allegedly held in private custody).

American courts followed a similar practice in the early years of the Republic. See, e.g., *United States v. Villato*, 2 Dall. 379 (CC Pa. 1797) (granting habeas relief to Spanish-born prisoner charged with treason on the ground that he had never become a citizen of the United States); *Ex parte D’Olivera*, 7 F. Cas. 853 (No. 3,967) (CC Mass. 1813) (Story, J., on circuit) (ordering the release of Portuguese sailors arrested for deserting their ship); *Wilson v. Izard*, 30 F. Cas. 131 (No. 131 (No. 17, 810); (Livingston, J., on circuit) (reviewing the habeas petition of enlistees who claimed that they were entitled to discharge because of their status as enemy aliens).

In *Jackson v. Bulloch*, 12 Conn. 38, 42–43 (1837), the Supreme Court of Connecticut noted that the first section of the Connecticut Bill of Rights declares that “all men, when they form a social contract, are equal in rights . . . seems evidently to be limited to those who are parties to the social compact thus formed. Slaves cannot be said to be parties to that compact, or be represented in it.” Despite being excluded from the social compact, the petitioner slave was freed pursuant to a writ of habeas corpus. One can imagine numerous other cases where persons who are not able because of culture or disability to be a part of our social compact, as chimpanzees may be, or who may loathe the very existence of our social compact and wish to destroy it, are nevertheless able to avail themselves of a common law writ of habeas corpus.

Moreover, “the words “duty,” “duties,” or “responsibility” do not appear in the *Byrn* majority opinion, which concerned the issue of whether a fetus was a “person” within the meaning of the Fifth and Fourteenth Amendments to the United States Constitution.²⁴ This was no accident. The Third Department ignored the Court of Appeals’ teaching of *Byrn* that “[w]hether the law should accord legal personality is a *policy question*.” 31 N.Y.2d at 201

²⁴ The words “duty,” “duties,” or “responsibility” do not appear anywhere in the Second Department’s *Byrn* opinion either, with the single exception of the court noting that a lower federal court had upheld a restrictive abortion statute and stated that once human life has commenced, the constitutional protections found in the Fifth and Fourteenth Amendments impose upon the State the duty of safeguarding it. *Byrn v. New York City Health & Hospitals Corp.*, 39 A.D.2d 600 (2d Dept. 1972).

(emphasis added). “It is not true . . . that the legal order necessarily corresponds to the natural order.” *Id.* “The point is that it is a *policy determination* whether legal personality should attach and *not a question of biological or ‘natural’ correspondence.*” *Id.* (emphasis added). See Paton, *supra*, at 349-50, *Salmond on Jurisprudence* 305 (12th ed. 1928) (“A legal person is any subject-matter other than a human being to which the law attributes personality. This extension, for good and sufficient reasons, of the conception of personality beyond the class of human beings is one of the most noteworthy feats of the legal imagination.”).

As has been made clear in legal actions in other common law countries, an individual may be a “person” without having the capacity to shoulder any duties or responsibilities. New Zealand’s Whanganui River Iwi was designated a legal person though it has no duties or responsibilities. The Sikh’s sacred text was designated as a legal person though it has no duties or responsibilities. Mosques were designated as legal persons, though they had no duties or responsibilities. A Hindu idol was designated as a “person” though it has no duties or responsibilities.

Esteemed commentators cited both by the *Byrn* majority and the Indian Supreme Court agree. “Legal personality may be granted to entities other than individual human beings, e.g. a group of human beings, a fund, an idol.” George Whitecross Paton, *A Textbook of Jurisprudence* 393 (3rd ed. 1964). *Idols have no duties or responsibilities.* Indeed, John Chipman Gray, cited by the *Byrn* Court, makes clear that a “person” need not even be alive. “There is no difficulty giving legal rights to a *supernatural* being and thus making him or her a legal person.” Gray, *supra* Chapter II, 39 (1909) (emphasis added). *Such a being has no duties or responsibilities.* As Gray explained, there may also be

systems of law in which animals have legal rights . . . animals may conceivably be legal persons . . . when, if ever, this is the case, the wills of human beings must be attributed to the animals. There seems no essential difference between the fiction in such cases and those where, to a human being wanting in legal will, the will of another is attributed.

Id. at 43 (emphasis added).²⁵

The Third Department therefore erred in *Lavery* by failing to recognize that the decision whether a chimpanzee such as Tommy is a “person” for the purpose of demanding a common law writ of habeas corpus was entirely a *policy* question, and not a biological question. It further failed to address the powerful uncontroverted policy arguments, based upon fundamental common law values of liberty and equality, that the NhRP presented in great detail both in that case, the Hercules and Leo cases, and in the case at bar.

Further, the Third Department in *Lavery* mistook the NhRP’s demand for the “immunity-right” of bodily liberty, to which the ability to shoulder duties and responsibilities is irrelevant, with a “claim-right.” Linking personhood to an ability to shoulder duties and responsibilities is particularly inappropriate in the context of a common law writ of habeas corpus to enforce the fundamental common law immunity-right to bodily integrity. The Third Department’s linkage of the two caused it to commit a serious “category of rights” error by mistaking an “immunity-right” for a “claim-right.” *See generally*, Wesley N. Hohfeld, *Some Fundamental Legal Conceptions as Applied in Judicial Reasoning*, 23 YALE L. J. 16 (1913). The great Yale jurisprudential professor, Wesley N. Hohfeld’s, conception of the comparative structure of rights has, for a century, been employed as the overwhelming choice of courts, jurisprudential writers, and moral philosophers when they discuss what rights are. Hohfeld began his famous article by noting that “[o]ne of the greatest hindrances to the clear understanding, the incisive statement, and the true solution of legal problems frequently arises from the express or tacit assumption that all legal relations may be reduced to ‘rights’ and ‘duties’” and that “the term ‘rights’ tends to be used indiscriminately to cover what in a given case may be a privilege, a power, or an immunity, rather than a right in the strictest sense.” *Id.* at 28, 30.

²⁵ The New York Legislature recognized this when it enacted EPTL 7-8.1, which provided for an “enforcer” to enforce the nonhuman animal beneficiary’s right to the trust corpus.

With the greatest delicacy, Hohfeld gently pointed out, *id.* at 27, that even the distinguished jurisprudential writer, John Chipman Gray, made the same mistake as did the Third Department Court in his *Nature and Sources of the Law*.

In [Gray's] chapter on "Legal Rights and Duties," the distinguished author takes the position that a right always has a duty as its correlative; and he seems to define the former relation substantially according to the more limited meaning of 'claim.' Legal privileges, powers, and immunities are *prima facie* ignored, and the impression conveyed that all legal relations can be comprehended under the conceptions, 'right' and 'duty.'²⁶

The reason is that a claim-right, which the NhRP did *not* demand in *Lavery*, in *Presti*, in *Stanley*, or in the case at bar, is comprised of a claim and a duty that correlate one with the other. Steven M. Wise, *Rattling the Cage – Toward Legal Rights for Animals* 56-57 (Perseus Publishing 2000); Steven M. Wise, *Hardly a Revolution – The Eligibility of Nonhuman Animals for Dignity-Rights in a Liberal Democracy*, 22 VERMONT L. REV. 807-10 (1998). The most conservative, but hardly the most common, way to identify which entity possesses a claim-right is to require that entity to have the capacity to assert claims within a moral community. Steven M. Wise, *Rattling the Cage*, at 57; Steven M. Wise, *Hardly a Revolution*, at 808-10. This is roughly akin to the personhood test the Third Department applied in *Lavery*.

In neither *Lavery*, *Presti*, *Stanley*, nor in the case at bar, is the NhRP seeking a *claim-right* for a chimpanzee. Instead it is seeking the fundamental *immunity-right* to bodily liberty that is protected by a common law writ of habeas corpus. This immunity-right is what the United States Supreme Court was referring to when it stated that "[t]he right to one's person may be said to be a right of complete *immunity*: to be let alone.'" *Union P. R. Co. v. Botsford*, 141 U.S. 250, 251 (1891) (quoting *Cooley on Torts* 29) (emphasis added).

An immunity-right correlates not with a duty, but with a disability. Steven M. Wise, *Rattling the Cage*, at 57-59; Steven M. Wise, *Hardly a Revolution*, at 810-815. Other examples of fundamental immunity-rights are the right not to be enslaved guaranteed by the Thirteenth

²⁶ Gray's error becomes obvious when one recalls that Gray also agreed that both animals and supernatural beings could be "persons." See Gray, *supra* at 10.

Amendment to the United States Constitution, in which all others are *disabled* from enslaving those covered by that Amendment, and the First Amendment right to free speech, which the government is *disabled* from abridging. One need *not* be able to shoulder duties or responsibilities to possess these fundamental rights to bodily liberty, freedom from enslavement, and free speech.

The decision of the United States Supreme Court in *Harris v. McRea*, 448 U.S. 297, 316-18, 331 (1980) illustrated the difference between a claim-right and an immunity-right. Eight years prior to *Harris*, the United States Supreme Court in *Roe v. Wade* recognized a woman's immunity right to privacy and against interference by the state with her decision to have an abortion in the earlier stages of her pregnancy. The *Harris* plaintiff claimed she *therefore* had the right to have the state pay for an abortion she was unable to afford. The Supreme Court recognized that the woman's *immunity-right* to an abortion correlated with the state's *disability* to interfere in her decision to have the abortion; it did *not* correlate with the state's *duty* to fund the abortion. Therefore she had no claim against the state for payment for her abortion.

The NhRP argues that Tommy has the common law immunity-right to the bodily liberty protected by the common law of habeas corpus. This fundamental immunity-right correlates solely with the Respondents' disability to imprison him. The existence or nonexistence of Tommy's ability to shoulder duties and responsibilities is entirely irrelevant; it is irrelevant to every immunity-right. It is particularly inappropriate to demand that, for Tommy to possess the fundamental immunity right to bodily liberty protected by the common law of habeas corpus, he must possess the ability to shoulder duties and responsibilities, when this ability has nothing whatsoever to do with his fundamental immunity-right to bodily liberty. It might make sense, for example, if Tommy was seeking to enforce a common law contractual right. But the ability to shoulder duties and responsibilities is not even a prerequisite for the claim-right of a "domestic or pet" animal in New York, pursuant to EPTL 7-8.1 Furthermore, this statute actually does grant not just Tommy, who is a beneficiary of a trust the NhRP created for him prior to the litigation,

but every other “domestic or pet” animal in New York, the claim right to the money placed in the trust to which that nonhuman animal is a named beneficiary.²⁷

The Third Department thus erred in requiring that a “person” for the purpose of securing a common law writ of habeas corpus be capable of shouldering duties and responsibilities; in practical terms, that the claimant be a human being. *Lavery*, 124 A.D.3d at 151-53. In arriving at this conclusion, the court relied on inapposite cases, cited law review articles that endorse a minority philosophical argument, and ignored not just EPTL 7-8.1, *supra*, but multiple teachings of the New York Court of Appeals set forth in the *Byrn* case establishing that personhood is a matter of public policy, *supra*.

- b. The Third Department exceeded its authority by taking judicial notice, without notice to the parties, that chimpanzees lack the capacity to shoulder duties and responsibilities.

The Third Department further improperly took judicial notice of the alleged scientific fact that chimpanzees lack the capacity to shoulder duties and responsibilities. *Lavery*, 124 A.D.3d at 151. *See Hamilton v. Miller*, 23 N.Y.3d 592, 603-04 (2014) (“scientific” facts are inappropriate for judicial notice); *TOA Const. Co. v. Tsitsires*, 54 A.D.3d 109, 115 (1st Dept. 2008). A New York court may only take judicial notice of facts “which everyone knows,” *States v. Lourdes Hosp.*, 100 N.Y.2d 208, 213 (2003) or which are common knowledge, notorious, or indisputable. *TOA Const.*, 54 A.D.3d at 115; *People v. Darby*, 263 A.D.2d 112, 114 (1st Dept. 2000); *People v. Jovanovic*, 263 A.D.2d 182, 203 (1st Dept. 1999). Judicial notice of a fact is only proper when adjudicative facts are commonly known to exist. *Dollas v. W.R. Grace & Co.*, 225 A.D.2d 319, 320 (1st Dept. 1996). “Adjudicative facts” are “propositions of general knowledge which are capable of immediate and accurate determination by resort to easily accessible sources of indisputable accuracy.” Jack B. Weinstein, Harold Korn & Arthur R. Miller, *New York Civil Practice*, § 4511.02 (2d Ed. 2005). *See People v. Jones*, 73 N.Y.2d 427, 431 (1989) (same). A

²⁷ That “domestic or pet” animals in New York State are “persons” within the meaning of EPTL 7-8.1 does not necessarily mean they are purposes for any other reason, just as Tommy’s being a “person” for the purpose of the common law writ of habeas corpus would not necessarily mean he is a “person” for any other purpose.

“court may only apply judicial notice to matters ‘of common and general knowledge, well established and authoritatively settled, not doubtful or uncertain. The test is whether sufficient notoriety attaches to the fact to make it proper to assume its existence without proof.’” *Dollas*, 225 A.D.2d at 320 (quoting *Ecco High Frequency Corp. v. Amtorg Trading Corp.*, 81 N.Y.S.2d 610, 617 (N.Y. Sup. Ct. 1948) (“It is quite clear that within this rule the doctrine has no place in this case.”)).

That chimpanzees cannot shoulder duties and responsibilities is not an adjudicative fact, but *rather* a scientific fact that requires proof through expert testimony. Judicial notice is inappropriate in “scientifically complex cases. *Hamilton*, 23 N.Y.3d at 603-04. In *Hamilton*, the Court of Appeals admonished, “[w]hat Hamilton really wanted was to have Supreme Court take judicial notice of the fact that exposure to lead paint can cause injury. . . . But general causation, at least in scientifically complex cases, is not such a fact. Hamilton needs to prove, through scientific evidence, that exposure to lead-based paint can cause the injuries of which he complains.” *Id.* (citing *Parker v. Mobil Oil Corp.*, 7 N.Y.3d 434, 448 (2006)). The Court added, “[h]e cannot avoid that burden simply because Congress, in statutory preambles, has opined on the dangers of lead-based paint.” *Id.* As it is inappropriate to take judicial notice of scientific facts found in “statutory preambles,” *id.*, it was inappropriate for the Third Department to take judicial notice of scientific facts based solely upon two law review articles written by a lawyer, who is not a scientist, neither of which even cited to any peer-reviewed scientific evidence of the alleged incapacity of chimpanzees to shoulder duties and responsibilities. *See Lavery*, 124 A.D.3d at 151 (relying on two law review articles by Richard L. Cupp, Jr. for its conclusion).²⁸

²⁸ Some facts considered “scientific” are appropriate for judicial notice. But they must be “notorious facts” that cannot be disputed and are supported by reference “to sources of indisputable reliability.” *In re Perra*, 827 N.Y.S.2d 587, 592 (Sup. Ct. 2006). For instance, in *Perra*, the court took “judicial notice that smoking while pregnant has a harmful effect on the fetus, leading to the increased possibility of Sudden Infant Death Syndrome, or SIDS, after the baby is born,” reasoning, “[i]t is well-established that notorious facts relating to human life can be judicially noticed.” *Id.* (citing Prince, Richardson on Evidence, § 2–204 et seq. (Farrell 11th ed.)). In so doing, the court based its notice on a number of “indisputably reliable” sources including “the 2006 Surgeon General’s Report On The Health Consequences of Involuntary Exposure to Tobacco Smoke,” a “document created by the Office of the Surgeon General and the U.S. Department of Health and Human Services.” The “Report collects and

For a court to take judicial notice of a fact, the source of the underlying information must be of “indisputable accuracy.” *Crater Club v. Adirondack Park Agency*, 86 A.D.2d 714, 715 (3d Dept. 1982). The use of judicial notice as a substitute for foundation testimony should be limited to those situations in which the records are so “patently trustworthy as to be self-authenticating.” *People v. Kennedy*, 68 N.Y.2d 569, 577 (1986). Neither of the law review articles relied upon by the Third Department is a source of “indisputable accuracy” nor “patently trustworthy as to be self-authenticating” on the fact that chimpanzees lack the capacity to shoulder duties and responsibilities. *Id.* See, e.g., *TOA Const.*, 54 A.D.3d at 115. See also *Robinson ex rel. Chapman v. Bartlett*, 95 A.D.3d 1531, 1536 (3d Dept. 2012).

Judicial notice by the Third Department was further inappropriate “because of the novelty of the issue in this State.” *Brown v. Muniz*, 61 A.D.3d 526, 528 (1st Dept. 2009). In *Brown*, the First Department refused to take judicial notice of the fact that a driver can react to an emergency situation in less than a second because it was novel in New York State. *Id.* There is not a single case in New York, or in any other state to the NhRP’s knowledge, where a court has taken judicial notice of the “fact” that chimpanzees cannot shoulder duties and responsibilities.²⁹

analyzes the vast amount of research, both past and current, performed in the area of tobacco smoking and its effects on various aspects of health. The Surgeon General has released its report documenting the health effects of tobacco smoke since 1977 (DHHS 2006 I). Since that time, the Surgeon General’s report has been much discussed and its findings much publicized in the years since, such that no reasonable person could state their lack of awareness as to the deleterious effects of tobacco smoking.” *Id.* The court even observed: “Indeed, the findings of the Surgeon General are so well-respected and well-publicized that other nations, such as Great Britain, base their anti-smoking laws on the Surgeon General’s reports.” *Id.* (citations omitted). Respectfully, the same cannot be said of the Cupp articles.

²⁹ Assuming, *arguendo*, that the Third Department properly considered chimpanzees’ capacity for shouldering duties and responsibilities appropriate for judicial notice, the Third Department’s *sua sponte* judicial notice of that fact, without providing the NhRP notice or opportunity to be heard, deprived the NhRP of its right to fundamental “fairness.” *Brown*, 61 A.D.3d at 528 (fairness “require[s] that we ‘afford the parties the opportunity to be heard as to the propriety of taking judicial notice in the particular instance.’”) (citing Prince, Richardson On Evidence § 2–202 [Farrell 11th ed.]). “[F]undamental fairness dictates that [the court] should provide the parties with advance notice of its intention to” take judicial notice of facts. *Chasalow v. Bd. of Assessors*, 176 A.D.2d 800, 804 (2d Dept. 1991) (citing Richardson, Evidence § 14 [Prince 10th Ed]). See *Am. Exp. Bank, FSB v. Bienenstock*, 17 N.Y.S.3d 381, 2015 N.Y. Misc. LEXIS 2116, *1-2 (2d Dept. 2015) (same). As the Third Department “did not give the parties advance notice of its intention to take judicial notice, the court improperly considered the ‘facts’ of which it took judicial notice.” *Id.* See also *Brown*, 61 A.D.3d at 528 (“Here, neither party requested that we take

- c. If the capacity to shoulder duties and responsibilities is required for habeas corpus personhood, then the NhRP has demonstrated that Tommy possesses that capacity.

As argued, *supra*, the Third Department in *Lavery* erred in holding that the capacity to shoulder duties and responsibilities is required for habeas corpus personhood. Even if this Court agrees with the Third Department’s erroneous premise – that rights are contingent upon the ability to shoulder duties and responsibilities – or disagrees but believes it is bound to follow that court’s holding, it must still order Tommy discharged because the evidence presented in this case shows that chimpanzees such as Tommy can shoulder duties and responsibilities. The NhRP has amply demonstrated, *supra* at Section II-B, that Tommy possesses the capacity to shoulder duties and responsibilities and has otherwise met every fair requirement to be considered a “person” for the purpose of demanding a common law writ of habeas corpus.

In the attached Supplemental Affidavits, some of the world’s greatest experts in chimpanzee cognition set forth facts that conclusively demonstrate that chimpanzees such as Tommy understand and shoulder duties and responsibilities, in their own societies and human/chimpanzee societies, including, among others, the capacity to knowingly assume obligations then honor them, behave in ways both lawful and rule-governed, have moral inclinations and a level of moral agency, ostracize individuals who violate social norms, respond negatively to inequitable situations, have a social life that is cooperative and represents a purposeful and well-coordinated social system, routinely enter into contractual agreements, keep promises and secrets, assume death-related duties, prefer fair exchanges, and show concern for others’ welfare. This is far and away a showing sufficient for personhood to the limited extent of Tommy’s being able to invoke the common law writ of habeas corpus and thereby seek the aid of this Court to prevent his being condemned to a lifetime of imprisonment.

judicial notice of the “fact” that a driver can react to an emergency situation in less than a second, and thus the parties have not had the opportunity to address this issue.”).

4. As common law natural persons are presumed free, Respondents must prove they are not unlawfully imprisoning Tommy.

Its roots anchored into the depths of English history, the common law has been “viewed as a principle safeguard against infringement of individual rights.” Judith S. Kaye, *Forward: The Common Law and State Constitutional Law as Full Partners in the Protection of Individual Rights*, 23 RUTGERS L. J. 727, 730 (1992) (hereafter “Judith S. Kaye”). All autonomous common law natural persons are presumed to be entitled to personal liberty (*in favorem libertatis*). See *Oatfield v. Waring*, 14 Johns. 188, 193 (Sup. Ct. 1817) (on the question of a slave’s manumission, “all presumptions in favor of personal liberty and freedom ought to be made”); *Fish v. Fisher*, 2 Johns. Cas. 89, 90 (Sup. Ct. 1800) (Radcliffe, J.); *People ex. rel Caldwell v Kelly*, 13 Abb.Pr. 405, 35 Barb. 444, 457-58 (Sup Ct. 1862) (Potter, J.).

The common law of England, incorporated into New York law, was long *in favorem libertatis* (“in favor of liberty”).³⁰ Francis Bacon, “The argument of Sir Francis Bacon, His Majesty’s Solicitor General, in the Case of the Post-Nati of Scotland,” in IV *The Works Of Francis Bacon, Baron of Verulam, Viscount St. Alban And Lord Chancellor* 345 (1845) (1608); 1 Sir Edward Coke, *The First Part of the Institutes of the Laws of England* sec. 193, at *124b (1628); Sir John Fortescue, *De Laudibus Legum Angliae* 105 (S.B. Chrimes, trans. 1942 [1545]). See, e.g., *Moore v. MacDuff*, 309 N.Y. 35, 43 (1955); *Whitford v. Panama R. Co.*, 23 N.Y. 465, 467-68 (1861) (“prima facie, a man is entitled to personal freedom, and the absence of bodily restraint . . .”); *In re Kirk*, 1 Edm. Sel. Cas. at 327 (“In a case involving personal liberty [of a fugitive slave] where the fact is left in such obscurity that it can be helped out only by intendments, the well established rule of law requires that intendment shall be in favor of the prisoner.”); *Oatfield*, 14 Johns. at 193; *Fish*, 2 Johns. Cas. at 90 (Radcliffe, J.); *Kelly*, 33 Barb. at 457-58 (Potter, J.) (“Liberty and freedom are man’s natural conditions; presumptions should be in favor of this construction.”). New York statutes are in accord with this common law

³⁰ References to the overarching value of bodily liberty may be found as early as Pericles’ Funeral Oration, Thucydides, *The Complete Writings of Thucydides - The Peloponnesian War*, sec. II. 37, at 104 (1951).

presumption. *See* N.Y. Stat. Law § 314 (McKinney) (“A statute restraining personal liberty is strictly construed”); *People ex rel. Carollo v. Brophy*, 294 N.Y. 540, 545 (1945); *People v. Forbes*, 19 How. Pr. 457, 11 Abb.Pr. 52 (N.Y. Sup. Ct. 1860) (statutes must be “executed carefully in favor of the liberty of the citizen”).

After a petitioner makes a *prima facie* showing it meets the requirements of CPLR 7002(c) (requiring petitioner to state that the person is “detained” and the “nature of the illegality”), the court must issue the writ, or show cause order, without delay. CPLR 7003(a). The burden then shifts to the respondents to present facts that show the detention is lawful. CPLR 7006(a). The respondents’ return must:

[f]ully and explicitly state whether the person detained is or has been in the custody of the person to whom the writ is directed, the authority and cause of the detention, whether custody has been transferred to another, and the facts of and authority for any such transfer.

CPLR 7008(b). If the respondents fail to set forth the cause of and authority for the detention, the petitioner must be discharged. CPLR 7010(a). *See People ex re. Wilson v. Flynn*, 106 N.Y.S. 1141 (Sup. Ct. 1907).

As demonstrated herein, Tommy is a “person” for the purpose of a common law writ of habeas corpus because he is autonomous and self-determining and his detention is therefore unlawful. *See Somerset*, 98 Eng.Rep. 499; *Lemmon*, 20 N.Y. at 604-05, 617. *See also In re DeSanto*, 898 N.Y.S.2d 787, 789 (Sup. Ct. 2010).

5. Because Tommy is being unlawfully detained, he is entitled to immediate discharge.

An unlawfully imprisoned “person” in New York must be discharged forthwith. *People ex re. Stabile v. Warden of City Prison*, 202 N.Y. 138, 152 (1911). This may require discharging the person into the care or custody of another. Imprisoned children and incapacitated adults have been discharged from slavery, industrial training schools, mental institutions, and other unlawful imprisonments into the custody of another. Before the Civil War, children detained as slaves were discharged through common law writs of habeas corpus into another’s care. *Lemmon*, 20 N.Y. at 632 (discharged slaves included two seven-year-olds, a five-year-old, and a two-year-

old); *Commonwealth v. Taylor*, 44 Mass. 72, 72-74 (1841) (seven or eight-year-old slave discharged into care of the Boston Samaritan Asylum for Indigent Children); *Commonwealth v. Aves*, 35 Mass. 193 (1836) (seven-year-old girl discharged into custody of Boston Samaritan Asylum for Indigent Children); *Commonwealth v. Holloway*, 2 Serg. & Rawle 305 (Pa. 1816) (slave child discharged); *State v. Pitney*, 1 N.J.L. 165 (N.J. 1793) (legally manumitted child discharged).

New York courts frequently discharged free minors from industrial training schools or other detention facilities through the common law writ of habeas corpus, though they would remain subject to the custody of their parents or guardians. *People ex rel. F. v. Hill*, 36 A.D.2d 42, 46 (2d Dept. 1971) (“petition granted and relator's son ordered discharged from custody forthwith.”), *aff'd*, 29 N.Y.2d 17 (1971); *People ex rel. Silbert v. Cohen*, 36 A.D.2d 331, 332 (2d Dept. 1971) (“juveniles in question discharged”), *aff'd*, 29 N.Y. 2d 12 (1971); *People ex rel. Margolis v. Dunston*, 174 A.D.2d 516, 517 (1st Dept. 1991); *People ex rel. Kaufmann v. Davis*, 57 A.D.2d 597 (2d Dept. 1977); *People ex rel. Cronin v. Carpenter*, 25 Misc. 341, 342 (N.Y. Sup. Ct. 1898); *People ex rel. Slatzkata v. Baker*, 3 N.Y.S. 536, 539 (N.Y. Super. Ct. 1888); *In re Conroy*, 54 How. Pr. at 433-34; *People ex rel. Soffer v. Luger*, 347 N.Y.S. 2d 345, 347 (N.Y. Sup. Ct. 1973).

Minors have been discharged from mental institutions pursuant to habeas corpus into the custody of another, *People ex rel. Intner on Behalf of Harris v. Surles*, 566 N.Y.S.2d 512, 515 (Sup. Ct. 1991), as have child apprentices, *People v. Hanna*, 3 How. Pr. 39, 45 (N.Y. Sup. Ct. 1847) (ordering “discharge” of a minor unlawfully held as an apprentice upon writ of habeas corpus brought on his behalf); *In re M'Dowle*, 8 Johns 328 (Sup. Ct. 1811), and incapacitated adults, *Brevorka ex rel. Wittle v. Schuse*, 227 A.D.2d 969 (4th Dept. 1996) (elderly and ill woman showing signs of dementia); *State v. Connor*, 87 A.D.2d 511, 511-12 (1st Dept. 1982) (“elderly and apparently sick lady”); *Siveke v. Keena*, 441 N.Y.S. 2d 631 (Sup. Ct. 1981) (elderly and ill man).

That the NhRP seeks Tommy's ultimate discharge to a primate sanctuary rather than into the wild or onto the streets of New York does not preclude him from habeas corpus relief. *See People ex rel. Brown v. Johnston*, 9 N.Y.2d 482, 485 (1961) (habeas corpus was proper remedy to test the validity of a prisoner's transfer from a state prison to a state hospital for the insane); *People ex rel. Saia v. Martin*, 289 N.Y. 471, 477 (1943) ("that the appellant is still under a legal commitment to Elmira Reformatory does not prevent him from invoking the remedy of habeas corpus as a means of avoiding the further enforcement of the order challenged.") (citation omitted); *People ex rel. LaBelle v. Harriman*, 35 A.D.2d 13, 15 (3d Dept. 1970) ("Although relator is also incarcerated on the murder charge, a concededly valid detention, and this writ will not secure his freedom, *habeas corpus may be used to obtain relief other than immediate release from physical custody.*") (emphasis added); *People ex rel. Meltsner v. Follette*, 32 A.D.2d 389, 391 (2d Dept. 1969) ("The sustaining of the writ, however, does not require absolute discharge.") (citing *Johnston* and *Saia*); *cf. People ex rel. Rohrlach v. Follette*, 20 N.Y.2d 297, 302 (1967). The case at bar is exactly analogous to the relief accorded to child slaves, juveniles, and the incapacitated elderly, *supra*.

In *People ex rel. Ardito v. Trujillo*, 441 N.Y.S.2d 348, 350 (Sup. Ct. 1981), the petitioner, an adjudicated incompetent, sought a writ of habeas corpus to obtain a hearing to convert her criminal commitment to civil status. The respondent psychiatric center argued that the "availability of a writ of habeas corpus is rigidly restricted to situations in which the relator seeks absolute release from detention," citing "cases [then] decided nearly half a century ago[.]" *Id.* The court rejected the respondent's argument, noting that more recently, "the Court of Appeals has stated that the narrow view of the grounds for habeas corpus relief has . . . undergone a . . . change." *Id.* (citing *People ex rel. Keitt*, 18 N.Y.2d at 273). The court held that the term "discharge" under CPLR 7010 was broad and that relief "may be other than absolute discharge." *Id.* (citations omitted). The court made abundantly clear that the fact that the petitioner "is not seeking absolute release from detention does not function as a bar to her application for a writ of habeas corpus." *Id.*

Habeas corpus may even be used to seek a transfer from one facility to another. *See Mental Hygiene Legal Services ex rel. Cruz v. Wack*, 75 N.Y.2d 751 (1989) (habeas corpus proper to transfer mental patient from secure facility to non-secure facility); *People ex rel. Jesse F. v. Bennett*, 242 A.D.2d 342 (2d Dept. 1997) (“habeas corpus is an appropriate mechanism for transfer”); *People ex rel. Richard S. v. Tekben*, 219 A.D.2d 609, 609 (2d Dept. 1995); *McGraw v. Wack*, 220 A.D.2d 291, 293 (1st Dept. 1995); *People ex rel. Meltsner*, 32 A.D.2d at 391-92 (sustaining writ of habeas corpus and holding that “the respondent should be directed to afford the relator treatment consistent with his sentence or, if such treatment not be readily available at Green Haven Prison, to transfer the relator to a correctional institution where such treatment is available or to release him.”); *State ex rel. Henry L. v. Hawes*, 667 N.Y.S.2d 212, 217 (Co. Ct. 1997) (“this court will direct the *immediate transfer* of relator from Sunmount to a non-secure facility such as Wassaic.”) (emphasis added). Such has been the law in New York for nearly a century. Again, the Court in *Stanley* properly rejected Respondents’ argument that because the NhRP sought “their transfer to a chimpanzee sanctuary, it has no legal recourse to habeas corpus.” 16 N.Y.S.3d at 917 n.2. The Court reasoned that habeas corpus has been used to “secure [the] transfer of [a] mentally ill individual to another institution.” *Id.* (citation omitted).

As noted, Justice Jaffe properly concluded that she was not bound by *Presti* because it conflicts with the First Department and Court of Appeals precedent. *Id.* (citing *McGraw*, 220 A.D.2d at 292; *Matter of MHLS*, 75 N.Y.2d 751). In *Presti*, the Fourth Department erroneously concluded that Kiko was not entitled to the relief afforded by a writ of habeas corpus, *not* because Kiko was not a “person,” but on the mistaken ground that the NhRP was neither demanding Kiko’s immediate release nor claiming that Kiko’s detention was unlawful. Instead, the court incorrectly asserted that the NhRP was merely demanding a transfer to a sanctuary, which, in the court’s opinion, was not a remedy for a common law writ of habeas corpus.

In support of this factually and legally incorrect statement, the Fourth Department cited eight cases. Each case, without exception, featured a human prison inmate who had been convicted of a crime and was subsequently attempting to utilize the writ of habeas corpus for

some reason other than to procure his immediate release from prison. Each is therefore inapposite to the case at bar.

Several cases dealt exclusively with whether habeas corpus could be used merely to challenge alleged errors in parole revocation hearings. In *People ex rel. Gonzalez v. Wayne Cnty. Sheriff*, 96 A.D.3d 1698 (4th Dept. 2012), the court held that habeas corpus relief was unavailable to a prisoner in his challenge to an administrative law judge's determination following a final parole revocation hearing. In *People ex rel. Shannon v. Khahaifa*, 74 A.D.3d 1867 (4th Dept. 2010), the prisoner sought habeas corpus on the grounds that "the determination that he violated a condition of his parole was arbitrary and capricious, and the time assessment for the violation was excessive." In both cases, the court concluded that habeas corpus should be denied where the inmates would not be entitled to release from prison even if errors were committed in connection with parole revocation.

In addition to these inapposite parole cases, the Fourth Department cited inapplicable criminal habeas corpus cases such as *People ex rel. Hall v. Rock*, 71 A.D.3d 1303, 1304 (3d Dept. 2010), which involved a prisoner's inappropriate challenge to the sufficiency of the evidence supporting his indictment. Likewise, in *People ex rel. Kaplan v. Commissioner of Correction*, 60 N.Y.2d 648, 649 (1983), the Court ruled that the inmate was not entitled to habeas corpus because the only remedy "to which he would be entitled would be a new trial or new appeal, and not a direction that he be immediately released from custody." The same was true in *People ex rel. Douglas v. Vincent*, 50 N.Y.2d 901, 903 (1980), where the Court held that "even if there were merit to the relator's contention that he was denied effective assistance of counsel at trial or on appeal he would not be entitled to habeas corpus relief because the only remedy he seeks would provide him a new trial or new appeal, and not a direction that he be immediately released from custody."

In the above cases, unlike the case at bar, the inmates were not contending that the fact of their confinement was unlawful, but rather, asserted that some procedural error occurred in their underlying trial or hearing. In the present case, the NhRP has consistently maintained that

Tommy's detention is unlawful, thus entitling him to immediate release. Again, this Court recognized as much in the Hercules and Leo case. *Stanley*, 16 N.Y.S.3d at 917 n.2.

In another case relied upon in *Presti*, *People ex rel. Dawson v. Smith*, 69 N.Y.2d 689, 691 (1986), the Court of Appeals *reaffirmed* the notion that habeas corpus can be used to seek a transfer to an “institution *separate and different* in nature from the correctional facility to which petitioner had been committed[.]” (emphasis added) (citing *Johnston*, 9 N.Y.2d 482). In distinguishing the case from *Johnston*, the Court of Appeals explained, “[h]ere, by contrast, petitioner *does not seek his release from custody in the facility*, but only from confinement in the special housing unit, a particular type of confinement within the facility which the Department of Correctional Services is expressly authorized to impose on lawfully sentenced prisoners committed to its custody[.]” *Id.* (citations omitted, emphasis added). In the case at bar, as in *Johnston* and unlike *Dawson*, the NhRP seeks the *complete discharge* of Tommy from Respondents’ custody with ultimate placement in a primate sanctuary. As noted, the NhRP’s case is analogous to the case of a juvenile, elderly person, or mentally incompetent adult who simply cannot be released onto the streets of New York following a habeas corpus determination that his or her detention is unlawful.

The Third Department in *Berrian v. Duncan*, 289 A.D.2d 655 (3d Dept. 2001) and *People ex rel. McCallister v. McGinnis*, 251 A.D.2d 835 (3d Dept. 1998), the final cases cited by the *Presti* court, relied on *Dawson* in concluding that a prisoner could not use habeas corpus to seek release from a special housing unit of a prison. For the reasons set forth in *Dawson*, *supra*, such a ruling has no bearing here, where the NhRP seeks complete release of Tommy from his confinement by Respondents to an environment completely “separate and different in nature” from the facility of detention.

Notwithstanding the few cases cited by the Fourth Department in *Presti*, it is established that even convicted prisoners *may* use habeas corpus to challenge their conditions of confinement without seeking immediate release. See *Johnston*, 9 N.Y.2d at 485; *People ex rel. Jesse F.*, 242 A.D.2d at 342 (“habeas corpus is an appropriate mechanism for transfer from a

secure to a nonsecure facility”); *People ex rel. Kalikow on Behalf of Rosario v. Scully*, 198 A.D.2d 250, 251 (2d Dept. 1993) (“habeas corpus is available to challenge the conditions of confinement, even where immediate discharge is not the appropriate relief”); *People ex rel. Ceschini v. Warden*, 30 A.D.2d 649, 649 (1st Dept. 1968); *People ex rel. Berry v. McGrath*, 61 Misc. 2d 113, 116 (N.Y. Sup. Ct. 1969) (an “individual . . . is entitled to apply for habeas corpus” upon a “showing of a course of cruel and unusual treatment”); *People ex rel. Rockey v. Krueger*, 306 N.Y.S.2d 359, 360 (Sup. Ct. 1969) (“Notwithstanding that relator does not contest the propriety of his confinement on the underlying charge, he may be [sic] a writ raise the issue whether restraint in excess of that permitted is being imposed upon him . . . Since the . . . relator is being held in solitary confinement and that an Orthodox Jew seeking to retain his beard would not be so held, relator is entitled to judgment requiring the respondent to release him from solitary confinement.”); *McGrath*, 61 Misc. 2d at 116 (citing *People ex rel. Smith v. LaVallee*, 29 A.D.2d 248, 250 (4th Dept. 1968) (“the issues of whether a prisoner . . . had in fact been receiving adequate psychological and psychiatric treatment during his imprisonment has been held a proper subject for habeas corpus relief”)).

However, Tommy is not a prison inmate convicted of a crime. Tommy is not attempting to utilize the writ of habeas corpus for some reason other than his immediate release from unlawful detention. Rather, Tommy is an autonomous, self-determining nonhuman who is utilizing the writ of habeas corpus to secure immediate release from imprisonment and procure for himself the greatest amount of freedom he can possibly have given the fact that, as a chimpanzee, he can neither be released directly into the wild nor onto the streets of New York State.

As a result of its misunderstanding the NhRP and its claims, as well as the law, the Fourth Department erroneously ignored two centuries of case law that the NhRP brought to its attention in which such individuals as child slaves, child apprentices, child residents of training schools, child residents of mental institutions, and mentally incapacitated adults, none of whom could be immediately released onto the streets of the State of New York any more than Tommy

could, were nevertheless released from the custody of one entity and immediately transferred into the custody of another. The Third Department in *Lavery* accurately stated: “Notably, we have not been asked to evaluate the quality of Tommy’s current living conditions in an effort to improve his welfare. In fact, petitioner’s counsel stated at oral argument that it does not allege that respondents are in violation of any state or federal statutes respecting the domestic possession of wild animals[.]” 124 A.D.3d at 149 (citation omitted).

Justice Jaffe properly understood what the NhRP is and the nature of the relief it is seeking. *Stanley*, 16 N.Y.S.3d at 900. As the Court noted at the outset:

Petitioner is a non-profit organization with a mission to “change the common law status of at least some nonhuman animals from mere things,’ which lack the capacity to possess any legal rights, to persons,’ who possess such fundamental rights as bodily integrity and bodily liberty, and those other legal rights to which evolving standards of morality, scientific discovery, and human experience entitle them.” (Pet., ¶¶ 11, 18; Memorandum of Law in Support of Petition [Pet. Memo. of Law] at 71 n 35; *see generally* NhRP website (www.nonhumanrightsproject.org). . . .

In accordance with its mission, petitioner commenced this litigation and has filed similar cases in several other New York courts with the goal of obtaining legal rights for chimpanzees, and ultimately for other animals.

Id. at 900-01. The Court continued:

The conditions under which Hercules and Leo are confined are not challenged by petitioner, which denies that they are relevant to the relief it seeks, and it advances no allegation that respondents are violating any federal, state or local laws by holding Hercules and Leo (Pet., ¶¶ 5, 8), nor does it “seek improved welfare for Hercules or Leo” (*id.*), or otherwise “to reform animal welfare legislation” (*id.*, ¶ 11; *see* Pet. Memo. of Law at 5). Rather, according to petitioner, the sole issue is whether Hercules and Leo may be legally detained at all.

Id. at 901.

The Fourth Department’s *Presti* ruling therefore erroneously contracted the Great Writ for both humans and chimpanzees. This contraction violated the Suspension Clause, Art. I, sec. 4, of the New York Constitution. As noted below, to the extent a statute curtails the common law of habeas corpus, it suspends the Great Writ in violation of New York Constitution, Art. 1 § 4, which provides that “[t]he privilege of a writ or order of habeas corpus shall not be suspended,

unless, in case of rebellion or invasion, or the public safety requires it.” The Suspension Clause however renders not just the legislature, but the *judiciary*, equally powerless to deprive an individual of the privilege of the common law writ of habeas corpus. *Tweed*, 60 N.Y. at 591-92 (“If a court . . . may impose any sentence other than the legal statutory judgment, and deny the aggrieved party all relief except upon writ of error, it is but a judicial suspension of the writ of habeas corpus. That writ is . . . a protection against encroachments upon the liberty of the citizen by the unauthorized acts of courts and judges.”).

The NhRP however is not challenging the conditions of Tommy’s confinement, nor is it requesting his transfer from one facility to another. Rather, the NhRP is first seeking Tommy’s immediate release from Respondents’ unlawful detention and then a decision on placement in a primate sanctuary in which his right to bodily liberty may be fully enjoyed.

E. TOMMY IS A “PERSON” WITHIN THE MEANING OF THE COMMON LAW OF HABEAS CORPUS AND THEREFORE CPLR 7002(A).

1. The term “person” in Article 70 refers to its meaning at common law.

“Person” in Article 70 refers to its meaning under the New York common law of habeas corpus. This conclusion is supported by three reasons: (1) the legislature’s decision not to define “person” in Article 70; (2) the fact that the CPLR, including Article 70 in particular, solely governs procedure; and (3) if Article 70 limits the substantive common law of habeas corpus, it violates the “Suspension Clause” of the New York Constitution, Art. 1 § 4.

First, as the legislature did not define “person” in CPLR Article 70, a court must look to its common law meaning in a common law habeas corpus action. When the legislature intends to define a word in the CPLR, it does. *See* CPLR Article 105. But it neither defined “person” nor intended the word to have any meaning apart from its common law meaning. *Siveke*, 441 N.Y.S. 2d at 633 (“Had the legislature so intended to restrict the application of Article 70 of the CPLR to [infants or persons held by state] it would have done so by use of the appropriate qualifying language. A review of certain case law is further indication that the utilization of the writ is not to be so restrictively construed.”).

Generally, in New York, procedural statutes that employ undefined words refer to their common law meaning, particularly where, as here, the action is derived from the common law. *See P.F. Scheidelman & Sons, Inc. v Webster Basket Co.*, 257 N.Y.S. 552, 554-55 (Sup. Ct. 1932) (otherwise undefined, “distress” and “distrain” “must be given their common law meaning”), *aff’d*, 236 A.D. 774 (4th Dept. 1932); *Drost v. Hookey*, 25 Misc. 3d 210, 212 (Dist. Ct 2009) (as neither “tenant at will” nor licensee” were defined by Section 713(7) of the New York Property Actions and Proceedings Law, courts look to their common law definitions). This is true in other states too. *E.g.*, *State v. A.M.R.*, 147 Wash. 2d 91, 94-95 (2002) (en banc) (courts look to common law definitions of otherwise undefined word “person” to determine who may appeal certain orders); *Casto v. Casto*, 404 So. 2d 1046, 1048 (Fla. 1981) (courts look to common law definitions of otherwise undefined words “rendition” of judgment and “entry” of judgment to determine time limit in which to appeal); *Addington v. State*, 199 Kan. 554, 561 (1967) (courts look to common law definition of otherwise undefined word “venue” in habeas corpus petition).

Second, the CPLR governs only procedure and may neither abridge nor enlarge a party’s substantive rights. CPLR 102; CPLR 101. Therefore it may not abridge Tommy’s substantive common law habeas corpus rights. This necessarily includes the threshold determination of whether Tommy is a “person” within the meaning of the New York common law of habeas corpus. The *Tweed* Court emphasized, in reference to the procedural habeas corpus statute in effect at the time, that “the act needs no interpretation and is in full accord with the common law.” 60 N.Y. at 569.

Third, to the extent Article 70 limits who is a “person” able to bring a common law writ of habeas corpus, beyond the limitations of the common law itself, it violates the Suspension Clause of the New York Constitution, Art. 1 § 4, which provides that “[t]he privilege of a writ or order of habeas corpus shall not be suspended, unless, in case of rebellion or invasion, or the public safety requires it.” The Suspension Clause renders the legislature powerless to deprive an individual of the privilege of the common law writ of habeas corpus. *Hoff v. State of New York*,

279 N.Y. 490, 492 (1939). It “cannot be abrogated, or its efficiency curtailed, by legislative action . . . The remedy against illegal imprisonment afforded by this writ . . . is placed beyond the pale of legislative discretion.” *Tweed*, 60 N.Y. at 566. *See, e.g., Matter of Morhous v. Supreme Ct. of State of N.Y.*, 293 N.Y. 131, 135 (1944) (Suspension Clause means that legislature has “no power” to “abridge the privilege of habeas corpus”); *People ex rel. Sabatino v. Jennings*, 246 N.Y. 258, 260 (1927) (by the Suspension Clause, “the writ of habeas corpus is preserved in all its ancient plenitude”); *People ex rel. Whitman v. Woodward*, 150 A.D. 770, 778 (2d Dept. 1912) (Suspension Clause gives habeas corpus “immunity from curtailment by legislative action”). *See also People ex rel. Bungart v. Wells*, 57 A.D. 140, 141 (2d Dept. 1901) (habeas corpus “cannot be emasculated or curtailed by legislation”); *Whitman*, 150 A.D. at 772 (“no sensible impairment of [habeas corpus] may be tolerated under the guise of either regulating its use or preventing its abuse”); *id.* at 781 (Burr, J., concurring) (“anything . . . essential to the full benefit or protection of the right which the writ is designed to safeguard is ‘beyond legislative limitation or impairment’”) (citations omitted); *Frost*, 133 A.D. at 187 (writ lies “beyond legislative limitation or impairment”).

The question of who is a “person” within the meaning of the common law of habeas corpus is the most important individual issue that may come before a court. If Article 70 interferes with a court’s ability to determine whether Tommy is a “person” within the meaning of the common law of habeas corpus, it violates the Suspension Clause. Otherwise the legislature could permanently strip judges of their ability to determine who lives, who dies, who is enslaved, and who is free.

“Person” is not defined in CPLR article 70, or by the common law of habeas corpus. Petitioner agrees that there exists no legal precedent for defining “person” under article 70 or the common law to include chimpanzees or any other nonhuman animals, or that a writ of habeas corpus has ever been granted to any being other than a human being. Nonetheless, as the Third Department noted in *People ex rel Nonhuman Rights Project, Inc. v. Lavery*, the lack of precedent does not end the inquiry into whether habeas corpus relief may be extended to chimpanzees. (124 A.D.3d 148, 150–151, 998 N.Y.S.2d 248 [3d Dept 2014]).

Stanley, 16 N.Y.S.3d at 911 (emphasis added).

Tommy's legal thinghood derives from the common law. However, when justice requires, New York courts refashion the common law—especially the common law of habeas corpus—with the directness Lord Mansfield displayed in *Somerset v. Stewart*, when he held human slavery “so *odious* that nothing can be suffered to support it but positive law.” Lofft at 19; 98 Eng. Rep. at 510 (emphasis added). “One of the hallmarks of the writ [is] . . . its great flexibility and vague scope.” *McCann*, 18 N.Y.2d at 263 (citation omitted). Slaves employed the common law writ of habeas corpus to challenge their imprisonment as things. *Lemmon*, 20 N.Y. at 604-06, 618, 623, 630-31 (citing *Somerset*); *In re Belt*, 2 Edm. Sel. Cas. 93 (Sup. Ct. 1848); *In re Kirk*, 1 Edm. Sel. Cas. 315 (citing *Somerset* and *Forbes v. Cochran*, 107 Eng. Rep. 450, 467 (K.B. 1824)); *In re Tom*, 5 Johns. 365 (*per curiam*). Non-slaves long employed it in New York, including (1) apprentices and indentured servants, *e.g.*, *People v. Weissenbach*, 60 N.Y. 385, 393 (1875); *In re M'Dowle*, 8 Johns. 328; (2) infants, *Weissenbach*; *M'Dowle*; (3) the incompetent elderly, *Schuse*, 227 A.D.2d 969; and (4) mental incompetents, *Johnston*, 9 N.Y.2d at 485; *Bennett*, 242 A.D.2d 342; *In re Cindy R.*, 970 N.Y.S.2d 853 (Sup. Ct. 2012).

It is not just in the area of habeas corpus that the New York courts freely revise the common law when justice requires, though habeas corpus law is the broadest and most flexible of all. The Court of Appeals has long rejected the claim that “change . . . should come from the Legislature, not the courts.” *Woods v. Lancet*, 303 N.Y. 349, 355 (1951). *See W.J.F. Realty Corp. v. State*, 672 N.Y.S.2d 1007, 1009 (Sup. Ct. 1998) (“For those who feel that the incremental change allowed by the Common Law is too slow compared to statute, we refer those disbelievers to the holding in *Somerset v. Stewart*, . . . which stands as an eloquent monument to the fallacy of this view”), *aff'd*, 267 A.D.2d 233 (2d Dept. 1999). “We abdicate our own function, in a field peculiarly nonstatutory, when we refuse to reconsider an old and unsatisfactory court-made rule” the Court in *Woods* declared. 303 N.Y. at 355. *See also Flanagan v. Mount Eden General Hosp.*, 24 N.Y. 2d 427, 434 (1969) (“we would *surrender our own function* if we were to refuse to deliberate upon unsatisfactory court-made rules simply because a period of time has elapsed and the legislature has not seen fit to act”) (emphasis

added); *Greenburg v. Lorenz*, 9 N.Y. 2d 195, 199-200 (1961) (“Alteration of the law [when the legislature is silent] has been the business of the New York courts for many years.”).

The common law is “lawmaking and policymaking by judges . . . in principled fashion, to fit a changing society.” Judith S. Kaye, *supra*, at 729. In response to the question in *Woods* whether the Court should bring “the common law of this state, on this question [of whether an infant could bring suit for injuries suffered before birth] into accord with justice[,]” it answered: “we should make the law conform to right.” 303 N.Y. at 351. The Court of Appeals has explained that “Chief Judge Cardozo’s preeminent work *The Nature of Judicial Process* captures our role best if judges have woefully misinterpreted the *mores* of their day, or if the *mores* of their day are no longer those of ours, they ought not to tie, in helpless submission, the hands of their successors.” *Caceci v. Do Canto, Const. Corp.*, 72 N.Y.2d 52, 60 (1988) (citing Cardozo, *Nature of Judicial Process*, at 152).

Therefore, in New York, “[w]hen the ghosts of the past stand in the path of justice clanking their mediaeval chains the proper course for the judge is to pass through them undeterred.” [The Court] act[s] in the finest common-law tradition when [it] adapt[s] and alter[s] decisional law to produce common-sense justice.” *Woods*, 303 N.Y. at 355 (quoting *United Australia, Ltd., v. Barclay’s Bank, Ltd.*, (1941) A.C. 1, 29). New York courts have “*not only the right, but the duty to re-examine a question where justice demands it*” to “bring the law into accordance with present day standards of wisdom and justice rather than ‘with some outworn and antiquated rule of the past.’” *Id.* (emphasis added) (quoting *Funk v. United States*, 290 U.S. 371, 382 (1933)). See, e.g., *Gallagher v. St. Raymond’s R.C. Church*, 21 N.Y.2d 554, 558 (1968) (“the common law of the State is not an anachronism, but is a living law which responds to the surging reality of changed conditions”); *Millington v. Southeastern Elevator Co.*, 22 N.Y.2d 498, 508 (1968) (“No recitation of authority is needed to indicate that this court has not been backward in overturning unsound precedent.”); *Bing v. Thunig*, 2 N.Y.2d 656, 668 (1957) (a rule of law “out of tune with the life about us, at variance with modern day needs and with concepts of justice and fair dealing . . . [i]t should be discarded”); *Silver v. Great American Ins. Co.*, 29

N.Y.2d 356, 363 (1972) (“Stare decisis does not compel us to follow blindly a court-created rule . . . once we are persuaded that reason and a right sense of justice recommend its change.”); *MacPherson v. Buick Motor Company*, 217 N.Y. 382, 391 (1916) (legal principles “are whatever the needs of life in a developing civilization require them to be”); *Rumsey v. New York and New England Railway Co.*, 133 N.Y. 79, 85 (1892) (quoting 1 *Kent’s Commentaries* 477 (13th edition 1884) (“cases ought to be examined without fear, and revised without reluctance, rather than to have the character of our law impaired, and the beauty and harmony of the system destroyed by the perpetuity of error”)).

2. As Tommy is autonomous and self-determining, he is a common law “person” entitled to the common law right to bodily liberty that the common law of habeas corpus protects.

“Anglo-American law starts with the premise of thorough-going self determination.” *Natanson v. Kline*, 186 Kan. 393, 406 (1960), *decision clarified on den. of reh’g*, 187 Kan. 186 (1960). The United States Supreme Court famously held that

[n]o right is held more sacred, or is more carefully guarded, by the common law, than the right of every individual to the possession and control of his own person, free from all restraint or interference of others, unless by clear and unquestionable authority of law. . . . “The right to one’s person may be said to be a right of complete immunity: to be let alone.”

Botsford, 141 U.S. at 251 (quoting *Cooley on Torts* 29).

The word “autonomy” derives from the Greek “autos” (“self”) and “nomos” (law”). Michael Rosen, *Dignity – Its History and Meaning* 4-5 (2012). See *State v. Perry*, 610 So. 2d 746, 767 (La. 1992) (“The retributory theory of punishment presupposes that each human being possesses autonomy, a kind of rational freedom which entitles him or her to dignity and respect as a person which is morally sacred and inviolate.”). Its deprivation is a deprivation of common law dignity, *People v. Rosen*, 81 N.Y. 2d 237, 245 (1993); *Rivers v. Katz*, 67 N.Y.2d 485, 493 (1986); *In re Gabr*, 39 Misc. 3d 746, 748 (Sup. Ct. 2013), that “long recognized the right of competent individuals to decide what happens to their bodies.” *Grace Plaza of Great Neck, Inc.*

v. *Elbaum*, 82 N.Y.2d 10, 15 (1993). See, e.g., *Matter of M.B.*, 6 N.Y.3d 437, 439 (2006); *Rivers*, 67 N.Y.2d at 492; *Schloendorff v. Soc'y of N.Y. Hosp.*, 211 N.Y. 125, 129-30 (1914).³¹

New York common law so supremely values autonomy that it permits competent adults to decline life-saving treatment. *Matter of Westchester Cnty. Med. Ctr. (O'Connor)*, 72 N.Y.2d 517, 526-28 (1988); *Rivers*, 67 N.Y.2d at 493; *People v. Eulo*, 63 N.Y. 2d 341, 357 (1984); *Matter of Storar*, 52 N.Y.2d 363, 378 (1981), *cert. denied*, 454 U.S. 858 (1981). This “insure[s] that the greatest possible protection is accorded his autonomy and freedom from unwanted interference with the furtherance of his own desires.” *Rivers*, 67 N.Y.2d at 493. It guarantees the right to defend oneself against criminal charges without counsel. *Matter of Kathleen K.*, 17 N.Y.3d 380, 385 (2011). It permits a permanently incompetent, once-competent human to refuse medical treatment, if he clearly expressed his desire to refuse treatment before incompetence silenced him, and no over-riding state interest exists. *Matter of Storar*, 52 N.Y.2d at 378. Even the never-competent—severely mentally retarded, the severely mentally ill, and the permanently comatose—who will never be competent, lack the ability, have always lacked the ability, and always will lack the ability, to choose, understand, or make a reasoned decision about medical treatment possess common law autonomy and dignity equal to the competent. *Matter of M.B.*, 6 N.Y.3d at 440; *Rivers*, 67 N.Y.2d at 493 (citing *Superintendent of Belchertown State Sch. v. Saikewicz*, 373 Mass. 728 (1977)); *Matter of Storar*, 52 N.Y.2d at 380; *Delio v. Westchester Cnty. Med. Ctr.*, 129 A.D.2d 1, 13-14 (2d Dept. 1987); *Matter of Mark C.H.*, 28 Misc. 3d 765, 775 n.25 (Sur. Ct. 2010) (quoting *Saikewicz*, 373 Mass. at 746); *In re New York Presbyterian Hosp.*, 181 Misc. 2d 142, 151 n.6 (Sup. Ct. 1999).³²

³¹ This common law right under New York law is coextensive with the liberty interest protected by the Due Process Clause of the New York Constitution. *Matter of Fosmire v. Nicoleau*, 75 N.Y.2d 218, 226 (1990); *Rivers*, 67 N.Y.2d at 493.

³² “[I]t is inconsistent with our fundamental commitment to the notion that no person or court should substitute its judgment as to what would be an acceptable quality of life for another.” *O'Connor*, 72 N.Y. 2d at 530. But see *id.* at 537 (Hancock, J. concurring) (criticizing *Storar* as it “ties the patient’s right of self-determination and privacy solely to past expressions of subjective intent”); *id.* at 540-41 (Simons, J., dissenting) (criticizing *Storar*’s refusal to adopt a substituted judgment rule). In 2002, the legislature adopted a substituted judgment rule, SCPA 1750(2).

Chimpanzees' capacities for autonomy and self-determination, which subsume many of their numerous complex cognitive abilities, as set forth in the Expert Affidavits, include possession of an autobiographical self, episodic memory, self-consciousness, self-knowingness, self-agency, referential and intentional communication, empathy, a working memory, language, metacognition, numerosity, and material, social, and symbolic culture, their ability to plan, engage in mental time-travel, intentional action, sequential learning, mediational learning, mental state modeling, visual perspective-taking, cross-modal perception; their ability to understand cause-and-effect and the experiences of others, to imagine, imitate, engage in deferred imitation, emulate, to innovate and to use and make tools.

In June 2013, the NIH recognized the ability of chimpanzees to choose and self-determine. Accepted Recommendation EA7 states: "The environmental enrichment program developed for chimpanzees must provide for relevant opportunities for *choice and self determination*." (Wise Aff. Ex. A, p. 11) (*Stanley*) (emphasis added). The NIH noted "[a] large number of commenters who responded to this topic strongly supported this recommendation as a way to ensure both the complexity of the captive environment and chimpanzees' ability to *exercise volition with respect to activity, social grouping, and other opportunities*." (*Id.*) (emphasis added).

Autonomous, self-determined, able to choose how to live his life, Tommy is entitled to common law personhood and the common law right to bodily liberty protected by New York common law habeas corpus.

3. Tommy is entitled to the common law equality right to bodily liberty that the common law of habeas corpus protects.

Tommy is entitled to common law personhood and the right to bodily liberty as a matter of common law equality, too. Equality has always been a vital New York value, embraced by constitutional law, statutes, and common law.³³ Article 1, § 11 of the New York Constitution

³³ Equality is a fundamental value throughout Western jurisprudence. See *Vriend v. Alberta*, 1 R.C.S. 493, 536 (Canadian Supreme Court 1998) (Cory and Iacobucci, JJ) ("The concept and principle of equality is almost intuitively understood and cherished by all."); *Miller v. Minister of Defence*, H CJ 4541/94, 49(4)

contains both an Equal Protection Clause, modeled on the Fourteenth Amendment to the United States Constitution, and an anti-discrimination clause. “[T]he principles expressed in those sections [of the Constitution] were hardly new.” *Brown v. State*, 89 N.Y.2d 172, 188 (1996). As the Court of Appeals explained:

The Equal Protection Clause of the Fourteenth Amendment had been thoroughly debated and adopted by Congress and ratified by our Legislature after the Civil War, and the concepts underlying it are older still. Indeed, cases may be found in which this Court identified a prohibition against discrimination in the Due Process Clauses of earlier State Constitutions, clauses with antecedents traced to colonial times (*see* [citation omitted] Charter of Liberties and Privileges, 1683, § 15, reprinted in 1 Lincoln, Constitutional History of New York, at 101).

Id.

New York equality values are embedded into New York common law. For example, under the common law, such private entities as common carriers, victualers, and innkeepers may not discriminate unreasonably or unjustly. *See, e.g., Hewitt v. New York, N.H. & H.R. Co.*, 284 N.Y. 117, 122 (1940) (quoting *Root v. Long Island R. Co.*, 114 N.Y. 300, 305 (1889) (“At common law, railroad carriers are under a duty to serve all persons without unjust or unreasonable advantage to any. So this court has said that a carrier should not ‘be permitted to unreasonably or unjustly discriminate against other individuals to the injury of their business where the conditions are equal.’”)); *New York Tel. Co. v. Siegel-Cooper Co.*, 202 N.Y. 502, 508 (1911) (quoting *Lough v. Outerbridge*, 143 N.Y. 271, 278 (1894) (“‘His charges must, therefore, be reasonable, and he must not unjustly discriminate against others.’”)); *People v. King*, 110 N.Y.

P.D. 94, ¶6 (Israel High Court of Justice 1995) (Strasberg-Cohen, T., J.) (“It is difficult to exaggerate the importance and stature of the principle of equality in any free democratic society.”); *Israel Women’s Network v. Government*, HCJ 453/94. 454/94, ¶22 (Israel High Court of Justice 1994) (“The principle of equality, which . . . ‘is merely the opposite of discrimination’ . . . has long been recognized in our law as one of the principles of fairness and justice which every public authority is commanded to withhold.”) (citation omitted); *Mabo v. Queensland* (no. 2), 175 CLR 1 F.C. 92-014, ¶29 (Australian Supreme Court 1992) (“equality before the law . . . is [an] aspiration[] of the contemporary Australian legal system”). *See also* Alexis de Toqueville, *Democracy in America*, Book II, Chapter 1, at 65 (Digireads.com Publishing 2007) (“Democratic nations are at all times fond of equality . . . for equality their passion is ardent, insatiable, incessant, invincible; they call for equality in freedom; and if they cannot obtain that, they still call for equality in slavery.”); United States Declaration of Independence (July 4, 1776) (“all men are created equal”).

418, 427 (1888) (“By the common law, innkeepers and common carriers are bound to furnish equal facilities to all, without discrimination, because public policy requires them so to do.”).

The common-law duty-to-serve on a non-discriminatory basis doctrine is concerned with two distinct yet overlapping interests: equality and autonomy.

The origins of the duty to serve and the recent direction of the case law suggest that a basic concern for individual autonomy animates the duty to serve. This concern recognizes the vulnerability of individuals to the arbitrary and unreasonable power of private entities. Realizing the importance to the individual of some goods, services, and associations, the duty to serve seeks to limit the power of the controlling entities by allowing exclusion only when based on fair and reasonable grounds.

Note, *The Antidiscrimination principle in the Common Law*, 102 HARVARD L. REV. 1993, 2001 (1989) (discussing the values underlying the antidiscrimination principle in the common law and concluding that the interests in equality often override property interests). Common law equality, which forbids discrimination founded on unreasonable means or unjust ends, also prohibits racial discrimination, and New York “has led in the proclamation and extension of its liberal policy favoring equality and condemning [racial] discrimination.” *In re Young*, 211 N.Y.S 2d 621, 626 (Sup. Ct. 1961).

The Expert Affidavits demonstrate that genetically, physiologically, and psychologically, Tommy’s interests in exercising his autonomy and self-determination is as fundamental to him as it is to a human being. Recall the United States Supreme Court’s admonition that “[n]o right is held more sacred, or is more carefully guarded, by *the common law*, than the right of every individual to the possession and control of his own person[.]” *Botsford*, 141 U.S. at 251 (emphasis added).³⁴

However, New York equality is not merely a product of its constitutions, statutes, and common law operating independently. Two decades ago, Chief Justice Kaye confirmed that the two-way street between common law decision-making and constitutional decision-making had

³⁴ On this ground alone, this Court must eventually hold (after it issues the Order to Show Cause) that, as a matter of common law equality, Tommy is entitled to bodily liberty, and his right is protected by the common law of habeas corpus.

resulted in a “common law decision making infused with constitutional values.” Judith S. Kaye, *supra*, at 747. In harmony with the common law equality principles that forbid private discrimination founded on unreasonable means or unjust ends, the common law of equality embraces, at a minimum, its sister fundamental constitutional equality value—embedded within the New York and the United States Constitutions—that prohibits discrimination based on irrational means or illegitimate ends. *Romer v. Evans*, 517 U.S. 620, 633 (1996) (quoting *Sweatt v. Painter*, 339 U.S. 629, 635 (1950) (““Equal protection of the laws is not achieved through indiscriminate imposition of inequalities.””)).³⁵

Common law equality decision-making differs from constitutional equal protection decision-making in that it has nothing to do with a “respect for the separation of powers.” *Cleburne v. Cleburne Living Ctr., Inc.*, 473 U.S. 432, 441-42 (1985). Instead it applies constitutional equal protection values to an evolving common law. The outcomes of similar common law and constitutional cases may therefore be different.

For example, in *Hernandez v. Robles*, 7 N.Y.3d 338 (2006), the Court of Appeals affirmed the constitutionality of New York’s statutory limitation of marriage to opposite-sex couples. “The critical question [wa]s whether a rational legislature could decide that these benefits should be given to members of opposite-sex couples, but not same-sex couples.” *Id.* at 358. The Court held the legislature could rationally conclude that same-sex relationships are more casual or temporary, to the detriment of children, and assume children do best with a mother and father. *Id.* at 359-60. In the face of a dissent that concluded, “I am confident that future generations will look back on today’s decision as an unfortunate misstep,” *id.* at 396 (Kaye, C.J., dissenting), the majority “emphasize[d] . . . we are deciding only this constitutional question. *It is not for us to say whether same-sex marriage is right or wrong.*” *Id.* at 366 (emphasis added).

³⁵ The New York Equal Protection Clause “is no broader in coverage than the federal provision.” *Under 21, Catholic Home Bur. for Dependent Children v. City of New York*, 65 N.Y.2d 344, 360 n.6 (1985).

In contrast, a classification's appropriateness is important to a court deciding the common law. It *should* decide what is right and wrong. Its job *is* to do the "right thing." Thus, when it is time for the Court to rule on the merits, the Court *should* recognize Tommy's common law personhood. This Court *should* determine that the classification of a chimpanzee as a "legal thing" invokes an illegitimate end. This Court *should* decide that Tommy has a common law right to bodily liberty sufficient to entitle him to a writ of habeas corpus and a chance to live the autonomous, self-determining life of which he is capable.

Tommy's common law classification as a "legal thing," unable to possess any legal rights, rests upon an illegitimate end. *Affronti v. Crosson*, 95 N.Y.2d 713, 719 (2001). *See, e.g., Goodridge v. Dep't of Public Health*, 440 Mass. 309, 330 (2003); *Cleburne*, 473 U.S. at 452 (Stevens, J., concurring).

Without such a requirement of legitimate public purpose it would seem useless to demand even the most perfect congruence between means and ends, for each law would supply its own indisputable - and indeed tautological fit: if the means chosen burdens one group and benefits others, then the means perfectly fits the end of burdening just those whom the law disadvantage and benefitting just those it assists.

Laurence H. Tribe, *American Constitutional Law* 1440 (second ed. 1988).

In *Romer*, the United States Supreme Court struck down the so-called "Amendment 2," because its purpose of repealing all existing anti-discrimination positive law based upon sexual orientation, was illegitimate. 517 U.S. at 626. It violated equal protection because "[i]t is at once too narrow and too broad. It identifies persons by a single trait and then denies them protection across the board." *Id.* at 633 (emphasis added). This statute was "simply so obviously and fundamentally inequitable, arbitrary, and oppressive that it literally violated *basic equal protection values*." *Equal. Found. of Greater Cincinnati, Inc. v. City of Cincinnati*, 128 F.3d 289, 297 (6th Cir. 1997), *cert. denied*, 525 U.S. 943 (1998) (emphasis added). *See Mason v. Granholm*, 2007 WL 201008 (E.D. Mich. 2007) (noting that *Romer* found that Colorado's Amendment 2 was "at once too narrow and too broad. It identifies persons by a single trait and then denies them protection across the board," the Court struck down an amendment to the

Michigan Civil Rights Act that prevented prisoners from suing for a violation of their civil rights while imprisoned as violating federal equal protection); *Goodridge*, 440 Mass. at 330 (same-sex marriage ban impermissibly “identifies persons by a single trait and then denies them protection across the board”).

As it would be a tautology for the Equal Protection Clause to fail to demand that a legitimate public purpose or set of purposes based on some conception of the general good be the legislative end, it would be a tautology to determine whether class members are similarly situated for all purposes. The true test is “whether they are similarly situated *for purposes of the law challenged.*” *Kerrigan v. Comm’r of Public Health*, 289 Conn. 135, 158 (2008) (emphasis added) (quoting *Stuart v. Comm’r of Correction*, 266 Conn. 596, 601-02 (2003)).

Denying Tommy his common law right to bodily liberty solely because he is a chimpanzee is a tautology. “[S]imilarly situated” [cannot] mean simply ‘similar in the possession of the classifying trait.’ All members of any class are similarly situated in this respect and consequently, any classification whatsoever would be reasonable by this test.” *Varnum v. O’Brien*, 763 N.W. 2d 862, 882-83 (Iowa 2009) (citations omitted). The “equal protection guarantee requires that laws treat all those who are similarly situated with respect to the purposes of law alike.” *Id.* In *Goodridge*, the Supreme Judicial Court of Massachusetts swept aside the argument that the legislature could refuse homosexuals the right to marry because the purpose of marriage is procreation, which they could not accomplish. 440 Mass. at 330. This argument “singles out the one unbridgeable difference between same-sex and opposite sex couples, and transforms that difference into the essence of legal marriage.” *Id.* at 333. No one doubts that, if Tommy were human, this Court would instantly issue a writ of habeas corpus and discharge him immediately. Tommy is imprisoned for one reason: he is a chimpanzee. Possessing that “single trait,” [he is] “denie[d] . . . protection across the board,” *Romer*, 517 U.S. at 633, to which his autonomy and ability to self-determine entitle him.

The great Yale historian of slavery, David Brion Davis, has recently written that human slaves were “animalized” to justify their brutal treatment and that “[t]he animalization of humans

first required the ‘animalization’ of animals.” David Brion Davis, *The Problem of Slavery in the Age of Emancipation*, 23 (2014). This required human “anthropodenial . . . a blindness to the humanlike characteristics of other animals, or the animal-like characteristics of ourselves.” *Id.* at 24.

All nonhuman animals were once believed unable to think, believe, remember, reason, and experience emotion. Richard Sorabji, *Animal Minds & Human Morals – The Origins of the Western Debate* 1-96 (1993). Today, not only do the Expert Affidavits and the June 13, 2013 NIH acceptance of The Working Group on the Use of Chimpanzees in NIH-Supported Research within the Council of Councils’ Recommendation confirm chimpanzees’ extraordinarily complex, often human-like, autonomy and ability to self-determine and expose those ancient, pre-Darwinian prejudices as untrue, but so does the 2011 report of the Institute of Medicine and National Research Council of the National Academies discussing the use of chimpanzees in biomedical research:

Chimpanzees live in complex social groups characterized by considerable interindividual cooperation, altruism, deception, and cultural transmission of learned behavior (including tool use). Furthermore, laboratory research has demonstrated that chimpanzees can master the rudiments of symbolic language and numericity, that they have the capacity for empathy and self-recognition, and that they have the human-like ability to attribute mental states to themselves and others (known as the “theory of mind”). Finally, in appropriate circumstances, chimpanzees display grief and signs of depression that are reminiscent of human responses to similar situations.³⁶

The Expert Affidavits attached to the Habeas Petition were submitted by some of the world’s greatest working natural scientists. They confirm chimpanzees’ extraordinarily complex, often human-like, autonomy and ability to self-determine. At every level, chimpanzees are today understood as beings entitled to extraordinary consideration; they have been edging toward personhood.

³⁶ *Chimpanzees in Biomedical and Behavioral Research - Assessing the Necessity* 27 (Bruce M. Altevogt, et. al, eds., The National Academies Press 2011).

For centuries New York courts have rejected slavery, the essence of which is a stripping the slave of her autonomy and harnessing it to the will of the master. *See Jack v. Martin*, 14 Wend. 507, 533 (N.Y. 1835) (“Slavery is abhorred in all nations where the light of civilization and refinement has penetrated, as repugnant to every principle of justice and humanity, and deserving the condemnation of God and man”). The famous *Lemmon* case, 20 N.Y. 562, is acknowledged as “one of the most extreme examples of hostility to slavery in Northern courts[.]” Paul Finkleman, *Slavery in the Courtroom* 57 (1985). In *Stanley*, Justice Jaffe noted that “‘times can blind us to certain truths and later generations can see that laws once thought necessary and proper in fact serve only to oppress.’” 16 N.Y.S.3d at 917-18 (quoting *Lawrence v. Texas*, 539 U.S. 558, 579 (2003)). The legal personhood of chimpanzees, at least with respect to their right to a common law writ of habeas corpus, is one of those truths; their legal thinghood has become an anachronism.³⁷

Humans who have never been sentient or conscious or possessed of a brain *should* have basic legal rights. But *if* humans bereft even of sentience are entitled to personhood, *then* this Court must either recognize Tommy’s just equality claim to bodily liberty or reject equality. Abraham Lincoln understood that the act of extending equality protects it: “[i]n giving freedom to the slave, we *assure* freedom to the free, honorable alike in what we give, and what we preserve.” 5 *Collected Works of Abraham Lincoln* 537 (Roy P. Basler, ed. 1953) (annual message to Congress of December 1, 1862) (emphasis in original). The act of denying equality in order to enslave, based on a single trait, jeopardizes the equality of all.

³⁷ As of February 2014, at least twenty-five large private research companies, including GlaxoSmithKline, PLC, Merck & Co., Inc., DuPont, AstraZeneca, PLC, Colgate-Palmolive Company, and Novo Nordisk have committed not to use chimpanzees in research. The Humane Society of the United States, “Companies with Invasive Chimpanzee Research Policies” (February 24, 2014), available at http://www.humanesociety.org/issues/chimpanzee_research/tips/companies_chimpanzee_policies.html#Uwz6CvldWSo (last viewed October 27, 2014). The Board of Editors of *Scientific American* recently called for the end of captivity for such cognitively complex nonhuman animals as great apes, cetaceans, and elephants. “Free Willy – And His Pals,” *Scientific American* 10 (March 2014).

The NhRP claims only that Tommy has a common law right to bodily liberty protected by the common law of habeas corpus. What, if any, other common law rights Tommy possesses will be determined on a case-by-case basis. In *Byrn*, the Court of Appeals noted that fetuses are “persons” for some purposes in New York, including inheritance, devolution of property, and wrongful death, while not being “persons in the law in the whole sense,” such as being subject to abortion. 31 N.Y.2d at 200. Equal protection

can only be defined by the standards of each generation. *See* Cass R. Sunstein, *Sexual Orientation and the Constitution: A Note on the Relationship Between Due Process and Equal Protection*, 55 U. CHI. L.REV. 1161, 1163 (1988) (“[T]he Equal Protection Clause looks forward, serving to invalidate practices that were widespread at the time of its ratification and that were expected to endure.”). The process of defining equal protection . . . begins by classifying people into groups. A classification persists until a new understanding of equal protection is achieved. The point in time when the standard of equal protection finally takes a new form is a product of the conviction of one, or many, individuals that a particular grouping results in inequality and the ability of the judicial system to perform its constitutional role free from the influences that tend to make society’s understanding of equal protection resistant to change.

Varnum, 763 N.W. 2d at 877-78.

4. The New York legislature has determined that some nonhuman animals are persons in the trust context.

New York *already* recognizes personhood rights in some nonhuman animals, including Tommy. Specifically, New York is among the states that allow nonhuman animals to be trust “beneficiaries.” *See* EPTL 7-8.1. *Stanley*, 16 N.Y.S.3d at 901 (noting that the statute provides “that a domestic or pet animal may be named as a beneficiary of a trust.”). Tommy is a beneficiary of an *inter vivos* trust created by the NhRP pursuant to EPTL 7-8.1 for the purpose of his care and maintenance.³⁸ Consequently, he is a “person” under that statute, as only “persons” may be trust beneficiaries. *Lenzner v. Falk*, 68 N.Y.S.2d 699, 703 (Sup. Ct. 1947); *Gilman v. McArdle*, 65 How. Pr. 330, 338 (N.Y. Super. 1883) (“Beneficiaries may be natural or artificial persons, but they must be persons . . . In general, any person who is capable in law of taking an interest in property, may, to the extent of his legal capacity, and no further, become entitled to

³⁸ A true and correct copy of the trust is attached to the Habeas Petition as Exhibit 9.

the benefits of the trust.”), *rev'd on other grounds*, 99 N.Y. 451 (1885). “Before this statute [EPTL 7-8.1] trusts for animals were void, because a private express trust cannot exist without a beneficiary capable of enforcing it, and because nonhuman lives cannot be used to measure the perpetuities period.” Margaret Turano, *Practice Commentaries*, N.Y. Est. Powers & Trusts Law 7-8.1 (2013). See *In re Mills' Estate*, 111 N.Y.S.2d 622, 625 (Sur. Ct. 1952); *In re Estate of Howells*, 260 N.Y.S. 598, 607 (Sur. Ct. 1932). New York did not even recognize honorary trusts for nonhuman animals, which lack beneficiaries. *In re Voorhis' Estate*, 27 N.Y.S.2d 818, 821 (Sur. Ct. 1941).

In 1996, the Legislature enacted EPTL 7-6 (now EPTL 7-8) (a), which permitted “domestic or pet animals” to be designated as trust beneficiaries.³⁹ This section thereby acknowledged these nonhuman animals as “persons” capable of possessing legal rights. Accordingly, in *In re Fouts*, 677 N.Y.S.2d 699 (Sur. Ct. 1998), the court recognized that five chimpanzees were “income and principal beneficiaries of the trust” and referred to its chimpanzees as “beneficiaries” throughout. In *Feger v. Warwick Animal Shelter*, 59 A.D.3d 68, 72 (2d Dept. 2008), the Appellate Division observed “[t]he reach of our laws has been extended to animals in areas which were once reserved only for people. For example, the law now recognizes the creation of trusts for the care of designated domestic or pet animals upon the death or incapacitation of their owner.”

In 2010, the legislature renumbered EPTL 7-6.1 as EPTL 7-8.1, removed “Honorary” from the statute’s title, “Honorary Trusts for Pets,” leaving it to read, “Trusts for Pets,”⁴⁰ and amended section (a) to read, in part: “A trust for the care of a designated domestic or pet animal is valid. . . . *Such trust shall terminate when the living animal beneficiary or beneficiaries of*

³⁹ The Sponsor’s Memorandum attached to the bill that became EPTL 7-6.1 (and now EPTL 7-8.1) stated the statute’s purpose was “to allow animals to be made the beneficiary of a trust.” Sponsor’s Mem. NY Bill Jacket, 1996 S.B. 5207, Ch. 159. The Senate Memorandum made clear the statute allowed “such animal to be made the beneficiary of a trust.” Mem. of Senate, NY Bill Jacket, 1996 S.B. 5207, Ch. 159.

⁴⁰ The Committee on Legal Issues Pertaining to Animals of the Association of the Bar of the City of New York’s report to the legislature stated, “we recommend that the statute be titled ‘Trusts for Pets’ instead of ‘Honorary Trusts for Pets,’ as honorary means unenforceable, and pet trusts are presently enforceable under subparagraph (a) of the statute.” N.Y. Bill Jacket, 2010 A.B. 5985, Ch. 70 (2010).

such trust are no longer alive.” (emphasis added). In removing “Honorary” and the twenty-one year limitation on trust duration, the legislature dispelled any doubt that a nonhuman animal was capable of being a trust beneficiary in New York. By allowing “designated domestic or pet animals” to be trust beneficiaries able to own the trust corpus, New York recognized these nonhuman animals as “persons” with the capacity for legal rights.

Justice Jaffe agreed with the NhRP’s interpretation of the pet trust statute in the *Stanley* case. The Court explained:

Moreover, some animals, such as pets and companion animals, are gradually being treated **as more than property**, if not quite as persons, . . . (*See generally Feger v. Warwick Animal Shelter*, 59 A.D.3d 68, 71–72, 870 N.Y.S.2d 124 [2d Dept 2008] [“Companion animals are a special category of property” and courts recognize their “cherished status”]; *see also People v. Garcia*, 29 A.D.3d 255, 812 N.Y.S.2d 66 [1st Dept 2006] [goldfish are companion animals protected by animal cruelty law]; *Raymond v. Lachmann*, 264 A.D.2d 340, 341, 695 N.Y.S.2d 308 [1st Dept 1999] [recognizing cherished status of pets and considering cat’s interests by awarding possession of her to defendant as “best for all concerned,” notwithstanding plaintiff’s actual ownership interest]; *Travis v. Murray*, 42 Misc.3d 447, 977 N.Y.S.2d 621 [Sup Ct, New York County 2013] [recognizing, in dispute over custody of dog in divorce proceeding, that dogs are seen as family members, and declining to apply strict property analysis, applying something akin to “best interests of the child” standard]). At least one New York court, recognizing that “a pet is not just a thing but occupies a special place somewhere in between a person and a piece of personal property,” found that a dog’s owner may be entitled to emotional distress damages for the wrongful destruction and loss of her dog, thereby departing from contrary precedent. (*Corso v. Crawford Dog & Cat Hosp., Inc.*, 97 Misc.2d 530, 531, 415 N.Y.S.2d 182 [Civ Ct, Queens County 1979]; . . .

Consonant with these recent trends, New York enacted section 7–8.1 (“Trusts for pets”) of the Estates, Powers and Trusts Law (EPTL), providing that a domestic or pet animal may be named as a beneficiary of a trust. (Pet. Memo. of Law, at 54–56; *see McKinley, Dog-Related Bills Flood Albany as Major Legislation Stalls*, New York Times, June 11, 2015, http://www.nytimes.com/2015/06/12/nyregion/dog-related-bills-floodalbaney-as-major-legislation-stalls.html?_r=0 [noting that dogs’ interests “are exceptionally well represented in Albany this year.”]).

Some commentators have described the current legal status of animals as “quasi-persons, being recognized as holding some rights and protections but not others.” (Eg, Matambanadzo, *Embodying Vulnerability: A Feminist Theory of the Person*, 20 Duke J Gender L & Policy at 61).

Stanley, 16 N.Y.S.3d at 912-13.

As EPTL 7-8.1 created legal personhood in those nonhuman animals within its reach, New York public policy already recognizes that at least some nonhuman animals are persons capable of possessing one or more legal rights.

IV. CONCLUSION

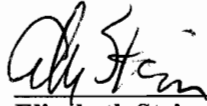
Tommy is an autonomous and self-determining being who can choose how to live his life and who possesses dozens of complex cognitive abilities that comprise and support his autonomy and bodily liberty. Moreover, he can shoulder duties and responsibilities both within chimpanzee societies and within human/chimpanzee societies. He is therefore entitled to legal personhood as a matter of common law liberty and equality, which in turn, entitles him to a writ of habeas corpus. He is further entitled to immediate discharge from what will otherwise be a decades-long imprisonment.

Professor Mathias Osvath made it clear that every day of Tommy's perpetual imprisonment is hellish, as chimpanzees "have a concept of their personal past and future and therefore suffer the pain of not being able to fulfill one's goals or move around as one wants; like humans they experience the pain of anticipating a never-ending situation." (Osvath Aff. at ¶16).

Tommy cannot be released to Africa or onto the streets of New York State. But he can be released from his imprisonment in New York. This Court should order him discharged from the Respondents' control and then determine where best to place him. The NhRP strongly recommends that he be delivered into the care of Save the Chimps in Ft. Pierce, Florida, forthwith, there to spend the rest of his life living as an autonomous, self-determining chimpanzee to the greatest extent possible in North America, amongst chimpanzee friends, climbing, playing, socializing, feeling the sun, and seeing the sky.

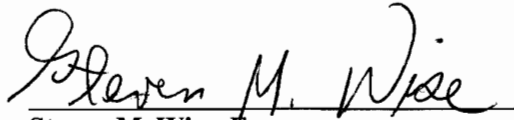
Dated: 12/2/2015

Respectfully submitted,



Elizabeth Stein, Esq.

Attorney for Petitioner
5 Dunhill Road
New Hyde Park, New York 11040
(516) 747-4726



Steven M. Wise, Esq.


Subject to *pro hac vice* admission
Attorney for Petitioner
5195 NW 112th Terrace
Coral Springs, Florida 33076
(954) 648-9864

Certification Pursuant to CPLR § 2105

CERTIFICATION PURSUANT TO CPLR § 2105

I, Elizabeth Stein, attorney for Petitioner-Appellant, hereby certify pursuant to Section 2105 of the CPLR that the foregoing papers constituting the Record on Appeal have been personally compared by me with the originals, and have been found to be true and complete copies of said originals, and the whole thereof, all of which are now on file in the office of the Clerk of the Supreme Court, County of New York.

Dated: October 7, 2016

By: 

Elizabeth Stein, Esq.

Attorney for Petitioner-Appellant