

Freshman Critical Thinking Seminar: Animal Ethics and Science **Spring 2012 – 11:10-12:00 Thursdays – Room 119, Heldenfelds**

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General description:

In this critical thinking seminar, we will discuss a variety of ways in which scientific research can inform our thinking about ethics and our relationships with non-human animals. Each week, we will read either a philosophical text that describes and defends one way of thinking about whether (or *not*) animals matter, morally speaking, or a scientific text that sheds light on what a philosophical view about animals and ethics implies in practice. The philosophical views discussed will include the following:

1. Animal welfare: the view that the ability to feel pain is what makes animals “count,” morally speaking, and that what we should try to do is minimize suffering.
2. Animal rights: the view that it is having certain cognitive capacities that qualifies animals for moral rights, and that moral rights are “trump cards” against arguments to the effect that harming an individual would minimize suffering.
3. Neo-Cartesianism and anthropocentrism: views that deny all moral consideration to non-human animals, either because they are not conscious, or because they lack certain cognitive capacities.

Examples of relevant scientific research that we will discuss include:

- A. Studies of pain perception in non-human animals: for instance, studies that ask whether or not fish can feel pain, and studies suggesting that animals that are totally incapable of perceiving pain might still be able to learn in complicated ways. Such studies are obviously relevant to the application of “animal welfare” views as described above.
- B. Studies of mirror self-recognition, language acquisition, memory, and what’s called “using a theory of mind.” Such studies are relevant in various ways to the application of both “animal rights” views and “Neo-Cartesianism and anthropocentrism” as described above.

No previous exposure background in philosophy or science will be presumed. Students must, however, be committed to (a) studying philosophical views via reasoned debate informed by the best relevant empirical research currently available and (b) adhering to such usual standards of classroom etiquette as responding to others’ positions in a respectful way, not monopolizing the discussion, and so on.

Prerequisite: Freshman standing in a College of Liberal Arts major.

Course requirements: Grades of either “pass” or “fail” will be assigned based on attendance, participation, and a series of four short “critical responses.” A passing grade can be earned only if all assignments are completed in satisfactory form and all classes are attended, except those excused under student rule #7 (<http://student-rules.tamu.edu/rule07>).

Attendance: Students are advised to be aware of their responsibility for reporting excused absences pursuant to section 7.3 of the student rules, which states:

Students may be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Section 7.1, or other reason deemed appropriate by

the student's instructor. Except in the case of the observance of a religious holiday, to be excused the student must notify his or her instructor in writing (acknowledged e-mail message is acceptable) prior to the date of absence if such notification is feasible. In cases where advance notification is not feasible (e.g. accident, or emergency) the student must provide notification by the end of the second working day after the absence. This notification should include an explanation of why notice could not be sent prior to the class.

Four “critical responses”: These will be very short essays describing and critiquing an argument, an experimental protocol, or the data analysis and interpretation given in one of the assigned readings. They may be a maximum of one page in length, single-spaced on one side of the page in type no smaller than that used in the body of this syllabus. In the course of the semester, half of each student’s critical response essays must be on assigned empirical/scientific readings and half must be on assigned philosophical readings. Each critical response essay must be turned in 24 hours in advance of the class meeting at which the reading in question will be discussed, by emailing it to everyone in the class as an attachment in PDF format. All critical response essays are considered required reading for the class meeting in question, so check your email for them 24 hours in advance of each class meeting. An individual student may not turn in more than one critical response essay for a given class period, and each student must turn in half of their critical response essays by the end of the 7th week of classes.

Class email list: All students are required to subscribe to and read regularly the course email list (ANIMALETHICS@LISTSERV.TAMU.EDU), which they will also use to email copies of their “reaction papers” to class members.

Miscellaneous policies:

Americans with Disabilities Act (ADA) policy statement: The Americans with Disabilities Act (ADA) is a federal antidiscrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities in Room 118 of Cain Hall, on the Internet at <http://studentlife.tamu.edu/ssd/>, or by telephone at 979-845-1637.

Academic Integrity Statement: The Aggie Honor Code states that “An Aggie does not lie, cheat, or steal or tolerate those who do.” Effective September 1, 2004, Texas A&M University has an Honor Code that defines campus policy on academic misconduct. The Aggie Honor System is charged with the enforcement of this Code. Students are advised to familiarize themselves with definitions of "academic misconduct" and procedures for handling it under Rule #20 of the TAMU Student Rules: <http://student-rules.tamu.edu/rule20.htm>. Ignorance of these definitions and procedures does not exclude a student from prosecution under the system.

Topics and readings: Readings for the course will be available from a password-protected portion of the class web site: <http://philosophy.tamu.edu/~gary/animalethics/>. Students registered for the course will be able to retrieve copies of assigned readings using a user ID: _____ and password: _____ that will be given out in class.

Note: The remainder of this document is a list representative of the kinds of readings we will discuss, but we will not have time to cover all of the numbered topics, and we will not be able to cover anywhere near all of the specific readings listed below under any topic. So consider the following list as a large bibliography of possible readings from which we will select a small number of readings as we proceed.

1. Philosophical essays:

- (A) Allen, Colin, and Marc Bekoff. 1997. "Consciousness: Essential or Dispensable?" In Allen and Bekoff, *Species of Mind*, pp. 139-159. Cambridge: MIT Press.
- (B) Carruthers, Peter. 1989. "Brute Experience." *Journal of Philosophy* 86:258-69.
- (C) Cohen, Carl. 1986. "The Case for the Use of Animals in Biomedical Research." *New England Journal of Medicine* 315:865-69.
- (D) Macphail, Euan. 1998. "Minds and Machines." In MacPhail, *The Evolution of Consciousness*, pp. 204-37. New York: Oxford University Press.
- (E) Regan, Tom. "The Animal Rights Debate." Paper presented at Texas A&M University, February 1999.
- (F) Rollin, Bernard. 1995. "The New Social Ethic for Animals." In *Farm Animal Welfare*, pp. 1-26. Ames: Iowa State University Press.
- (G) Singer, Peter. 1975. "All Animals are Equal." In *Animal Liberation*, pp. 1-27. New York: Avon Books.
- (H) Singer, Peter. 1987. "Life's Uncertain Voyage." In P. Pettit, R. Sylvan, and J. Norman, eds., *Metaphysics and Morality: Essays in Honor of J.J.C. Smart*, pp. 154-72. New York: Oxford University Press.
- (I) Sober, Elliott. 2000. "Evolution and the Problem of Other Minds." *Journal of Philosophy* 97:365-386.
- (J) VanDeVeer, Donald. 1979. "Interspecific Justice." *Inquiry* 22:55-79.
- (K) Varner, Gary. 1998. "The Principle of Inclusiveness: Establishing Priorities Among Interests," in *In Nature's Interests? Interests, Animal Rights, and Environmental Ethics*. New York: Oxford University Press.
- (L) Varner, Gary. 2003. "Animals." In Gary Comstock, ed., *Life Science Ethics*, pp. 141-168. Ames: Iowa State University Press.
- (M) Varner, Gary. 2009. "Utilitarianism and the Evolution of Ecological Ethics." *Science and Engineering Ethics* 14:551-73.
- (N) Varner, Gary. 2010. "A Harean Perspective on Humane Sustainability." *Ethics and the Environment* 15:31-49.
- (O) Varner, Gary. Forthcoming. "Introduction" to *Personhood, Ethics, and Animal Cognition*. New York: Oxford University Press.

2. Conceptualizing and assessing "animal welfare":

- (A) Curtis, Stanley. 2007. "Performance Indicates Animal State of Being: A Cinderella Axiom?" *The Professional Animal Scientist* 23:573-83.
- (B) Duncan, Ian. 1996. "Animal Welfare Defined in Terms of Feelings." *Acta Agric. Scand. Sect. A, Animal Sci. Suppl.* 27:29-35.
- (C) Federation of Animal Science Societies (FASS). 2010. *Guide for the Care and Use of Agricultural Animals in*

Research and Teaching. http://www.fass.org/docs/agguide3rd/Ag_Guide_3rd_ed.pdf.

- (D) Fraser, D. 1995. "Science, Values, and Animal Welfare: Exploring the 'Inextricable Connection'." *Animal Welfare* 4:103-17.
- (E) Fraser, D. 1999. "Animal ethics and animal welfare science: bridging the two cultures." *Applied Animal Behaviour Science* 65:171-89.
- (F) Gregory, N.G., L.J. Wilkins, S.D. Eleperuma, A.J. Ballantyne, and N.D. Overfield. 1990. "Broken Bones in Domestic Fowls: Effect of Husbandry System and Stunning Method in End-of-Lay Hens." *British Poultry Science* 31:59-69.
- (G) Hill, J.A. 1983. "Indicators of Stress in Poultry." *World's Poultry Science Journal* 39:24-31.
- (H) Kirkden, Richard D. and Edmond A. Pajor. 2006. "Using preference, motivation and aversion tests to ask scientific questions about animals' feelings." *Applied Animal Behaviour Science* 100:29-47.
- (I) Ladewig, Jan. 2005. "Of mice and men: Improved welfare through clinical ethology." *Applied Animal Behaviour Science* 92:183-92.
- (J) Mason, G. and M. Mendl. 1993. "Why is there no simple way of measuring animal welfare?" *Animal Welfare* 2:301-19.
- (K) Mench, Joy A. 1998. "Thirty Years After Brambell: Whither Animal Welfare Science?" *Journal of Applied Animal Welfare Science* 1:92-102.
- (L) Sandøe, P. & Simonsen, H.B. 1992. "Assessing animal welfare. Where does science end and philosophy begin?" *Animal Welfare* 1: 257-267.
- (M) Stafleu, F.R., Grommers, F.J. & Vorstenbosch, J. 1996. "Animal welfare, evolution and erosion of a moral concept." *Animal Welfare* 5: 225-34.
- (N) Tannenbaum, Jerrold. 1991. "Ethics and animal welfare: The inextricable connection." *Journal of the American Veterinary Medical Association* 198:1360-76.

3. Pain

- (A) Allen, Colin. 2004. "Animal Pain." *Nous* 38:617-43.
- (B) DeGrazia, David. 1996. "Feelings," in *Taking Animals Seriously*. New York: Cambridge University Press.
- (C) Rose, James D. 2002. "The Neurobehavioral Nature of Fishes and the Question of Awareness and Pain." *Reviews in Fisheries Science* 10:1-38.
- (D) Rose, Margaret, and David Adams. 1989. "Evidence for Pain and Suffering in Other Animals." In Gill Langley, ed., Animal Experimentation: The Consensus Changes, pp. 42-71. New York: Chapman and Hall.
- (E) Shriver, Adam. 2006. "Minding Mammals." *Philosophical Psychology* 19:433-42.
- (F) Sneddon, Lynne U., Victoria A. Braithwaite, and Michael J. Gentle. 2003. "Do fish have nociceptors? Evidence for the evolution of a vertebrate sensory system." *Proceedings of the Royal Society of London B* 270:1115-21.
- (G) Varner, Gary E. 1998. "Table 2.3: Comparisons Relevant to consciousness of pain in the animal kingdom." From Varner, *In Nature's Interests? Interests, Animal Rights and Environmental Ethics* (Oxford University Press, 1998), p. 53.

4. Desires, learning, and planning

- (A) Benson, Janette B. 1997. "The Development of Planning: It's About Time." In Sarah L. Friedman and Ellin Kofsky Scholnick eds., *The Developmental Psychology of Planning*, pp. 43-75. Mahwah, New Jersey: Lawrence Erlbaum Associates.
- (B) Bitterman, Martin. 1965. "The Evolution of Intelligence." *Scientific American* 212:92-100.
- (C) Bitterman, Martin. 1975. "The Comparative Analysis of Learning." *Science* 188:699-709.
- (D) DeGrazia, David. "Desires and Beliefs." 1996. *Taking Animals Seriously*. New York: Cambridge University Press.
- (E) Drücker, G. and B. Rensch. 1976. "The Solution of Patterned String Problems by Birds." *Behaviour* 62:164-72.
- (F) Emery, N.J. and N.S. Clayton. 2001. "Effects of experience and social context on prospective caching strategies by scrub jays." *Nature* 414:443-46.
- (G) Funk, Mildred Sears. 2002. "Problem solving skills [on string-pulling problems] in young yellow-crowned parakeets (*Cyanoramphus auriceps*)." *Animal Cognition* 5:167-76.
- (H) Grau, James W. 2002. "Learning and Memory Without a Brain." In Marc Bekoff, Colin Allen, and Gordon M. Burghardt, eds., *The Cognitive Animal: Empirical and Theoretical Perspectives on Animal Cognition*, pp. 77-87. Cambridge: MIT Press.
- (I) Grau, Jim. 2001. "Instrumental Conditioning." In W.E. Craighead and C.B. Nemeroff, eds., *The Corsini Encyclopedia of Psychology and Behavioral Science*, 3rd ed., pp. 767-69. New York: Wiley.
- (J) Haith, Marshall M. 1997. "The Development of Future Thinking as Essential for the Emergence of Skill in Planning." In Sarah L. Friedman and Ellin Kofsky Scholnick eds., *The Developmental Psychology of Planning*, pp. 25-42. Mahwah, New Jersey: Lawrence Erlbaum Associates.
- (K) Harlow, Harry F. 1949. "The Formation of Learning Sets." *Psychological Review* 56:51-55.
- (L) Heinrich, Bernd. 1995. "An Experimental Investigation of Insight [string pulling] in Common Ravens (*Corvus Corax*)." *The Auk* 112(4):994-1003.
- (M) Hunter, M.W. and A.C. Kamil. 1971. "Object-discrimination learning set and hypothesis behavior in the northern bluejay (*Cynaocitta cristata*)." *Psychonomic Science* 22:271-73.
- (N) Hulse, Donovan, Cynthia N. Read, and Timothy Schroeder. 2004. "The Impossibility of Conscious Desire." *American Philosophical Quarterly* 41:73-80.
- (O) Jalles-Filho, E., R.G.T. da Cunha, and R.A. Salm. 2001. "Transport of tools and mental representation: Is capuchin monkey tool behavior a useful model for Plio-Pleistocene hominid technology?" *Journal of Human Evolution* 40:365-77.
- (P) Kamil, A.C., M. Lougee, and R.J. Schulman. 1973. "Learning-set behaviour in the learning-set experienced blue-jay." *Journal of Comparative & Physiological Psychology* 82:394-405.
- (Q) Krützen, Michael, Janet Mann, Michael R. Heithaus, Richard C. Connor, Lars Bejder, and William B. Sherwin. 2005. "Cultural transmission of tool use in bottlenose dolphins." *Proceedings of the National Academy of Science* 102:8939-8943.
- (R) Kuczaj, Stan A. II and Rachel Thames Walker. 2006. "How Do Dolphins Solve Problems?" In Edward A. Wasserman and Thomas R. Zentall, eds., *Comparative Cognition: Experimental Explorations of Animal*

Intelligence, pp. 580-601.

- (S) Levin, Luis E. and Enrique Vergara 1987. "Reversal Learning in Groups of the Schooling Fish *Aphyocharax erithurus* on an Avoidance Paddle." *Journal of Comparative Psychology* 1010:317-21.
- (T) Mackintosh, N.J. and J. Mackintosh. 1964. "Performance of *Octopus* Over a Series of Reversals of a Simultaneous Discrimination." *Animal Behaviour* 12:321-24.
- (U) Mulcahy, Nicholas J. and Josep Call. 2006. "Apes Save Tools for Future Use." *Science* 312:1038-40.
- (V) Pepperberg, Irene M. 2004. "'Insightful' string-pulling in Grey parrots (*Psittacus erithacus*) is affected by vocal competence." *Animal Cognition* 7:263-66.
- (W) Plotnik, Rodney J. and Robert B. Tallarico. 1966. "Object-quality learning-set formation in the young chicken." *Psychonomic Science* 5:195-96.
- (X) Raby, C.R., D.M. Alexis, A. Dickinson and N.S. Clayton. 2007. "Planning for the future by western scrub-jays." *Nature* 445:919-21.
- (Y) Schusterman, R.J. 1964. "Successive discrimination-reversal training and multiple discrimination training in one trial learning by chimpanzees." *Journal of Comparative & Physiological Psychology* 58:153-56.
- (Z) Templeton, Jennifer J. 1998. "Learning from others' mistakes: a paradox revisited." *Animal Behavior* 55:79-85.
- (AA) Varner, Gary. 1998. "Localizing Desire," in *In Nature's Interests Interests? Interests, Animal Rights and Environmental Ethics*. New York: Oxford University Press.
- (BB) Zeldin, Robert K. and David S. Olton. 1986. "Rats Acquire Spatial Learning Sets." *Journal of Experimental Psychology* 12:412-19.

5. Language

- (A) DeGrazia, David. 1996. "Self-awareness, Language, Moral Agency, and Autonomy," in *Taking Animals Seriously*. New York: Cambridge University Press.
- (B) Fouts, Roger S., Mary Lee A. Jensvold, and Deborah H. Fouts. "Chimpanzee Signing: Darwinian Realities and Cartesian Delusions." In Marc Bekoff, Colin Allen, and Gordon M. Burghardt, eds., *The Cognitive Animal: Empirical and Theoretical Perspectives on Animal Cognition*, pp. 285-91. Cambridge: MIT Press.
- (C) Herman, L.M., S. Kuczaj III, and M.D. Holder. 1993. "Responses to anomalous gestural sequences by a language-trained dolphin: Evidence for processing of semantic relations and syntactic information." *Journal of Experimental Psychology: General* 122:184-94.
- (D) Herman, Louis M. 2002. "Exploring the Cognitive World of the Bottlenosed Dolphin." In Mark Bekoff, Colin Allen, and Gordon M. Burghardt, eds., *The Cognitive Animal*, pp. 275-83. Cambridge: MIT Press.

6. Mirror self-recognition

- (A) Amsterdam, Beulah. 1972. "Mirror Self-Image Reactions Before Age Two." *Developmental Psychobiology* 5:297-305.
- (B) Broom, D.M., Hilana Sena, and Kiera L. Moynihan. 2009. "Pigs learn what a mirror image represents and use it to obtain information." *Animal Behaviour* 78:1037-41.
- (C) Gallup, Gordon. 1970. "Chimpanzees: Self-Recognition." *Science* 167:86-87.
- (D) Gallup, Gordon, James R. Anderson, and Daniel J. Shillito. 2002. "The Mirror Test." In Marc Bekoff, Colin

- Allen, and Gordon M. Burghardt, eds., *The Cognitive Animal: Empirical and Theoretical Perspectives on Animal Cognition*, pp. 325-333. Cambridge: MIT Press.
- (E) Hyatt, Charles W., Troy Metzler, Brian French, and Deborah Fahrenbruck. 2003. "Mirrors as Enrichment for Asian Elephants (*Elephas maximus*)."
Journal of the Elephant Managers Association 14(3):12-16.
- (F) Hyatt, W. and W.D. Hopkins. 1994. "Self awareness in bonobos and chimpanzees: A comparative approach." In Sue Taylor Parker, Robert W. Mitchell, and Maria L. Boccia. 1994. *Self-Awareness in Animals and Humans: Developmental Perspectives*, pp. 248-53. New York: Cambridge University Press.
- (G) Menzel, E. E.S. Savage-Rumbaugh and J. Lawson. 1985. "Chimpanzee (*Pan troglodytes*) spatial problem solving with the use of mirrors and televised equivalents of mirrors." *Journal of Comparative Psychology* 99:211-17.
- (H) Patterson, F.G.P. and R. H. Cohn. 1994. "Self-recognition and self-awareness in lowland gorillas." In Sue Taylor Parker, Robert W. Mitchell, and Maria L. Boccia. 1994. *Self-Awareness in Animals and Humans: Developmental Perspectives*, pp. 273-90. New York: Cambridge University Press.
- (I) Pepperberg, Irene, Sean E. Garcia, Eric C. Jackson, and Sharon Marconi. 1995. "Mirror Use by African Grey Parrots (*Psittacus erithacus*)."
Journal of Comparative Psychology 109:182-195.
- (J) Plotnik, Joshua M., Frans B.M. de Waal, and diana Reiss. 2006. "Self-recognition in an Asian elephant." *Proceedings of the National Academy of Sciences* 103:17053-57.
- (K) Povinelli, Daniel J. 1989. "Failure to Find Self-Recognition in Asian Elephants (*Elephas maximus*) in Contrast to Their Use of Mirror Cues to Discover Hidden Food." *Journal of Comparative Psychology* 103:122-131.
- (L) Priori, Helmut, Ariane Schwarz, and Onur Güntürkün. 2009. "Mirror-Induced Behavior in the Magpie (*Pica pica*): Evidence of Self-Recognition." *PLoS Biology* 6:1642-50.
- (M) Reiss, Diana and Lori Marino. 2001. "Mirror self-recognition in the bottlenose dolphin: A case of cognitive convergence." *Proceedings of the National Academy of Science* 98:5937-5942.
- (N) Shillito, D.J., G.G. Gallup Jr., and B.B. Beck. 1999. "Factors affecting mirror behavior in western lowland gorillas, *Gorilla gorilla*." *Animal Behavior* 57:999-1004.
- (O) Shumaker, Robert W. and Karyl B. Swartz. 2004. "Cognition: Mirror Self-Recognition." In Marc Bekoff, ed., *Encyclopedia of Animal Behavior*, vol 1, pp. 308-12.
- (P) Suarez, S. and G.G. Gallup Jr. 1981. "Self-recognition in chimpanzees and orangutans, but not gorillas." *Journal of Human Evolution* 10:157-88.

7. Episodic memory and autothetic consciousness

- (A) Clayton, N.S., D.P. Griffiths, N.J. Emery, and A. Dickinson. 2001. "Elements of episodic-like memory in animals." *Philosophical Transactions of the Royal Society of London B* 356:1483-91.
- (B) Clayton, N.S. and A. Dickinson. 1998. "Episodic-like memory during cache recovery by scrub jays." *Nature* 395:272-74.
- (C) Dere, E., E. Kart-Teke, J.P. Huston, and M.A. De Souza Silva. 2006. "The case for episodic memory in animals." *Neuroscience and Biobehavioral Reviews* 30:1206-24.
- (D) Eichenbaum, Howard, Norbert J. Fortin, Ceren Ergorul, Sean P. Wright, Kara L. Agster. 2005. "Episodic recollection in animals: 'If it walks like a duck and quacks like a duck...'" *Learning and Motivation* 36:190-207.

- (E) Hampton, Robert R. and Bennett L. Schwartz. 2004. "Episodic memory in nonhumans: what, and where, is when?" *Current Opinion in Neurobiology* 14:1-6.
- (F) Howe, Mark and Mary L. Courage. 1993. "On Resolving the Enigma of Infantile Amnesia." *Psychological Bulletin* 113:305-26.
- (G) Howe, Mark L., Mary L. Courage, and Carole Peterson. 1994. "How Can I Remember When 'I' Wasn't There: Long-term Retention of Traumatic Experiences and Emergence of the Cognitive Self." *Consciousness and Cognition* 3:327-55.
- (H) Menzel, Charles R. 1999. "Unprompted Recall and Reporting of Hidden Objects by a Chimpanzee (*Pan troglodytes*) After Extended Delays." *Journal of Comparative Psychology* 113:426-34.
- (I) Mercado, E., S.O. Murray, R.K. Uyeyama, A.A. Pack, and L.M. Herman. 1998. "Memory for recent actions in the bottlenosed dolphin (*Tursiops truncatus*): repetition of arbitrary behaviors using an abstract rule." *Animal Learning & Behavior* 26:210-18.
- (J) Perner, Josef and Ted Ruffman. 1995. "Episodic Memory and Auto-noetic Consciousness: Developmental Evidence and a Theory of Childhood Amnesia." *Journal of Experimental Child Psychology* 59:516-548.
- (K) Perner, Josef and Birgit Lang. 1999. "Development of theory of mind and executive control." *Trends in Cognitive Science* 3:337-44.
- (L) Roberts, William A. "Are Animals Stuck in Time?" *Psychological Bulletin* 128:473-89.
- (M) Schechtman, Marya. 1994. "The Truth about Memory." *Philosophical Psychology* 7:3-18.
- (N) Schwartz, Bennett L., Megan L. Hoffman, and Siân Evans. 2005. "Episodic-like memory in a gorilla: A review and new findings." *Learning and Motivation* 36:226-44.
- (O) Schwartz, B.L., C.A. Meissner, M. Hoffman, S. Evans, and L.D. Frazier. 2004. "Event memory and misinformation effects in a gorilla (*Gorilla gorilla gorilla*)." *Animal Cognition* 7:93-100.
- (P) Suddendorf, Thomas and Janie Busby. 2005. "Making decisions with the future in mind: Developmental and comparative identification of mental time travel." *Learning and Motivation* 36:110-25.
- (Q) Suddendorf, Thomas and Michael C. Corballis. 1997. "Mental Time Travel and the Evolution of the Human Mind." *Genetic, Social, and General Psychological Monographs* 123:133-67.
- (R) Tulving, Endel. 1985. "Memory and Consciousness." *Canadian Psychology* 26:1-12.
- (S) Tulving, Endel and H.J. Markowitsch. 1994. "What do Animal-models of Memory Model?" *Behavioral and Brain Sciences* 17:498-499.
- (T) Tulving, Endel and Hans J. Markowitsch. 1998. "Episodic and Declarative Memory: Role of the Hippocampus." *Hippocampus* 8: 198-204.
- (U) Tulving, Endel. 2002. "Episodic Memory and Common Sense: How Far Apart?" In A.D. Baddeley, M. Conway, and J. Aggleton eds., *Episodic Memory: New Directions in Research*, pp. 269-288. New York: Oxford University Press.
- (V) Tulving, Endel. 2002. "Chronesthesia: Conscious Awareness of Subjective Time." In Donald T. Stuss and Robert T. Knight, eds., *Principles of Frontal Lobe Function*, pp. 311-25. New York: Oxford University Press.
- (W) Wheeler, Mark A., Donald T. Stuss, and Endel Tulving. 1997. "Toward a Theory of Episodic Memory: The Frontal Lobes and Auto-noetic Consciousness." *Psychological Bulletin* 121:331-54.

- (X) Zentall, Thomas R. 2005. "Animals May Not Be Stuck in Time." *Learning and Motivation* 36:208-25.
- (Y) Zental, T.R., T.S. Clement, R.S. Bhatt, and J. Allen. 2001. "Episodic-like memory in pigeons." *Psychonomic Bulletin & Review* 8:685-90.

8. "Using a 'theory of mind'"

- (A) Call, J., Hare, B., Carpenter, M. & Tomasello, M. 2004. "'Unwilling' versus 'unable': chimpanzees understanding of human intentional action." *Developmental Science* 7:488-498.
- (B) Emery, N.J. and N.S. Clayton. 2001. "Effects of experience and social context on prospective caching strategies by scrub jays." *Nature* 414:443-46.
- (C) ----- 2009 Stulp, Emery, Verhulst and Clayton, "Western scrub-jays conceal auditory information when competitors can hear but cannot see." *The Royal Society, Biol Lett* 2009;5 583-585
- (D) Hare, Brian, J. Call, B. Agnetta, and M. Tomasello. 2000. "Chimpanzees know what conspecifics do and do not see." *Animal Behaviour* 59:771-786.
- (E) Hare, B., Call, J. & Tomasello, M. 2001. "Do chimpanzees know what conspecifics know?" *Animal Behaviour*, 61, 139-151.
- (F) Hare, B., Addessi, E., Call, J., Tomasello, M. & Visalberghi, E. 2003. "Do capuchin monkeys (*Cebus apella*) know what conspecifics do and do not see?" *Animal Behaviour*. 65, 131-142.
- (G) Herman, Louis M., Adam A. Pack et al. 1999. "Dolphins (*Tursiops truncatus*) Comprehend the Referential Character of the Human Pointing Gesture." *Journal of Comparative Psychology* 113:pp. 347-364.
- (H) Herrmann, Esther, Josep Call, María Victoria Hernández-Lloreda, Brian Hare, and Michael Tomasello. 2007. "Humans Have Evolved Specialized Skills of Social Cognition: The Cultural Intelligence Hypothesis." *Science* 317:1360-66.
- (I) Nissani, Moti. 2004. "Theory of mind and insight in chimpanzees, elephants, and other animals?" In L.H.Rogers and G. Kaplan, eds., *Comparative vertebrate cognition: Are primates superior to non-primates?* pp. 227-61. New York: Kluwer Academic Publishing.
- (J) Povinelli, D. J. 1994. "Comparative Studies of Mental State Attribution: A Reply to Heyes." *Animal Behaviour* 48:239-41.
- (K) Povinelli, D.J. and T.J. Eddy. "What young chimpanzees know about seeing." *Monographs of the Society for Research in Child Development* 61(3):1-152.
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