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Recommended Citation

Visak, T., & Balcombe, J. (2013). The applicability of the self-fulfillment account of welfare to nonhuman animals, babies, and mentally disabled humans. *Philosophy & Public Policy Quarterly*, 31(2), 27-34.

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The Applicability of the Self-fulfillment Account of Welfare to Nonhuman Animals, Babies, and Mentally Disabled Humans

Tatjana Visak and Jonathan Balcombe

The latest and arguably most promising philosophical account of welfare is Daniel Haybron's self-fulfillment account (Haybron 2008). Roughly, according to Haybron, welfare consists of three aspects: (1) emotional flourishing, (2) success in identity-related projects, and (3) the fulfillment of the individual's sub-personal nature. The latter refers to aspects of her nature that are not related to her personal idiosyncrasies or her "self." Haybron mentions health, vitality, and bodily pleasure in this regard, since these things, according to Haybron, benefit us simply because of the sort of creature we are. So, strictly speaking, only emotional flourishing and success in identity-related projects are aspects of self-fulfillment. However, the focus on self-fulfillment distinguishes Haybron's account of welfare from better-known varieties of eudaimonism, which define welfare in terms of nature-fulfillment. These other forms of eudaimonism do not focus on the individual and its idiosyncrasies at all. They are perfectionist and externalist, rather than nonperfectionist and internalist.

The self-fulfillment account of welfare has never, to our knowledge, been tested with regard to the virtue of generality, which is one of the four cardinal virtues for theories of welfare that L.W. Sumner famously introduced (Sumner 1996, 14). The virtue of generality holds that a theory of welfare should be applicable to all beings with welfare:

We make welfare assessments . . . concerning a wide variety of subjects. Besides the paradigm case of adult human persons, our welfare vocabulary applies just as readily to children and infants, and to many non-human beings. It is

perfectly natural for me to say that my cat is doing well, that having an ear infection is bad for her, that she has benefited from a change of diet, and so on. In making these judgments it certainly seems to me that I am applying exactly the same concept of welfare to my cat that I habitually apply to my friends. A theory of welfare will therefore . . . be incomplete if it covers only them and ignores her. (14)

In this paper we will argue that generality is a virtue of Haybron's account of welfare. Indeed, reflecting on the applicability of his theory to nonhuman animals will give us a better understanding of its applicability to humans. We will first focus on self-fulfillment and suggest an interpretation of Haybron's account according to which the self-fulfillment of an individual consists in the fulfillment of the aspects of the self that are applicable to that particular individual. This makes Haybron's account of welfare applicable to all sentient beings. Then we will focus on sub-personal nature-fulfillment and argue that the same interpretation leads to the conclusion that Haybron's account of welfare recognizes even nonsentient beings as welfare subjects. We suggest a way of avoiding this latter conclusion.

The Animal's Self

According to Haybron, happiness, which he conceives of as emotional flourishing, is part of self-fulfillment, because it concerns the fulfillment of the individual's emotional nature, or – more precisely – her emotional self. After all, as Haybron puts it: “[H]appiness bears a special relation to the

self: the facts about what makes us (authentically) happy partially define who we are, our selves” (Haybron 2008, 178). According to Haybron, an individual’s emotional flourishing encompasses her emotions, moods, and mood propensities, where the latter are inclinations to be in a certain mood. So, like hedonism, Haybron conceives of happiness in terms of mental states, broadly conceived. However, unlike hedonism, the mental states that Haybron considers relevant for happiness are not simply pleasant or unpleasant experiences, but rather emotions, moods, and mood propensities.¹

There is broad consensus that mammals and birds, at least, experience pleasure and pain (Rollin 1991; Panksepp 2004, 303-07; Balcombe 2006), and growing agreement that these capacities extend to all vertebrates (Stoskopf 1994; Braithwaite 2010) and perhaps beyond (Sherwin 2001; Elwood 2011). More broadly, they seem to experience enjoyment and suffering. For example, rough-and-tumble play in rats has been shown to raise their levels of the “pleasure hormone” dopamine (Siviy et al. 1996), and experienced rats will hurry to the hand of a trusted human to be tickled, which induces high levels of ultrasonic chirps associated in other contexts with positive affect (Burgdorf and Panksepp 2001; Panksepp and Burgdorf 2003). Chickens inflicted with joint pain prefer water adulterated with an analgesic, switching to pure water when their pain subsides (Danbury et al. 2000). And the degree of cage-impoverishment in captive mice and rats correlates to their self-administration of an anxiolytic drug (Sherwin and Olsson 2004), or amphetamines, respectively (Bardo et al. 2001), presumably because these substances provide relief from negative affective states (for example, anxiety, frustration), as they do for humans. It is a common practice, therefore, to apply hedonistic accounts of welfare to nonhuman animals.

However, do nonhuman animals also experience the deeper emotions, moods, and mood propensities that Haybron’s emotional-state account of happiness refers to? Can these animals be truly happy or unhappy in that sense? Studies with rats and with starlings have documented pessimistic response biases when the subjects are subjected to days of unstimulating confinement, and more optimistic biases by conspecifics kept in enriched environments

(Harding et al. 2004; Bateson and Matheson 2007; Matheson et al. 2008). Persecuted chimpanzees and elephants are vulnerable to psychological breakdown (Bradshaw et al. 2005; Brüne et al. 2006), and baboon mothers whose infants have died show patterns of hormone changes that parallel those of bereaved women, and they seek therapy by expanding their social (grooming) networks (Engh et al. 2006). Few animal studies have sought to address pleasure, let alone happiness, but there are numerous accounts of animals showing joyous affect in such circumstances as play, mischief, liberation, and even humor (see Balcombe 2006). Moreover, capacities for such negative moods as bereavement, depression, and pessimism suggest that positive moods are also present. It can always be questioned where the line ought to be drawn dividing highly sentient from less- or nonsentient animals (Wise 2002). It is not a static line, and as the above-cited examples illustrate, new information has so far been expanding the inclusion zone.

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Haybron conceives of emotional nature, that is, one’s disposition to be happy in certain circumstances and not in others, as an aspect of the self, next to other aspects, such as (1) the individual’s social identity, which concerns her social role and how others see her; (2) the individual’s character, which concerns morally or ethically relevant aspects of the individual; (3) the individual’s temperament, for instance whether she is generally cheerful, extroverted, depressed, and so on; and (4) the individual’s self-understanding, which refers to her understanding of her life, ideals, projects, and relationships (Haybron 2008, 184). These aspects of the self bear on what makes the individual happy and on the individual’s identity-related projects. So, let us explore to what extent these aspects of the self are applicable to nonhuman animals.

It seems that at least some animals, notably

social animals, do have a social identity and projects that are related to that identity. Animals' roles are nuanced and dynamic, varying across social, temporal, and geographical axes. Most temperate-zone songbirds, for instance, have a nonbreeding season on their southerly wintering grounds, a period of migration, a reproductive season in the north, followed by a return migration during the autumn. Reproduction alone encompasses many projects, including courting, mating, nest-building, incubation, food provisioning, and in many cases territory maintenance. In some bird species, breeding pairs are helped at the nest by nonbreeders, who may include a prior year's offspring, unrelated conspecifics, or in at least one species, grandparents (Skutch and Gardner 1999; Richardson et al. 2007). These sorts of roles form an individual's social identity. Furthermore, these roles are fluid; nest-helpers, for instance, may suddenly find themselves in the role of parent should a primary parent be lost (Blackmore and Heinsohn 2007).

One might object that the social roles of animals, as opposed to humans, are not expressions of individual idiosyncrasies, and thus are not really aspects of the individual's self-fulfillment. For both humans and nonhumans it is hard to determine which aspects of our social roles are expressions of individual idiosyncrasies and which are expressions of our sub-personal nature-fulfillment. For instance, in some respects my being a mother may be an expression of my sub-personal nature-fulfillment. In other respects, my particular way of fulfilling that role may be an aspect of my self-fulfillment. In the fulfillment of social roles of humans and nonhumans, both self-fulfillment and nature-fulfillment may be present to varying degrees.

Do animals possess a moral character? The idea that animals might possess any degree of moral character was dismissed until recently, and remains controversial. However, social living fosters many forms of virtuous behavior, for which there are robust adaptive foundations, most notably kin-selection and reciprocal altruism. When you live among and co-depend upon others of your kind, it behooves you to show consideration for others. Cooperation, nurturance, consideration, and empathy are widespread animal behaviors (De Waal 1996; Bekoff and Pierce 2010). That these behaviors are accompanied by positive emotions is informed

by studies in which animals show a negative response to unfair treatment. Studies in which two monkeys alternately exchange tokens for a slice of cucumber from a human experimenter, or in which two dogs offer a paw for a handshake, proceed smoothly through many trials if the exchange is equitable. But if one monkey starts receiving a preferred grape, the other will no longer accept cucumber (Brosnan and de Waal 2003; video: http://www.youtube.com/watch?v=Hbb27GQ_XII [accessed July 22, 2013]), and if only one of the two dogs receives a treat for a paw-shake, the other stops offering a paw much sooner than if both, or none, are given treats (Range et al. 2009).

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Do animals have temperaments? Research on temperaments of individual animals, also called "personalities" or "coping styles," shows, for instance, that individual sticklebacks differ consistently across time and contexts as to how shy or bold, explorative or avoiding, active, aggressive, or sociable they are (Bell and Sih 2007). Similar observations have been recorded about the boldness of individual tits (Carere and Van Oers, 2004), the fearfulness, understanding, extroversion, and dominance of individual gorillas (Weiss et al. 2012), and other temperaments of many other animals.

Do animals have self-understanding? Once again, it was believed not so until Gordon Gallop showed that chimpanzees would inspect themselves and notice a mark placed surreptitiously on their forehead when presented with a mirror (Gallop 1970). Subsequently, other great apes, dolphins, elephants, and magpies have passed the mirror self-recognition test, and at least one study provides evidence for it in monkeys (Rajala et al. 2010). It should be added that failure to pass a mirror self-recognition test may not indicate a lack of a sense of self in a nonhuman animal. Related capacities include theory of mind – the ability to attribute mental states to oneself and others – and metacognition, an awareness of one's own

knowledge. Evidence for both of these abilities has been garnered for nonhumans (for example, Foote and Crystal 2007; Horowitz 2009).

It holds for humans and for nonhuman animals that different aspects of the self are applicable to any particular individual to a particular degree, or not at all, depending on her species and on her level and stage of development. For instance, it seems odd to talk about the moral character of a newborn human baby. The self-understanding of a particular mentally disabled human can be very limited. Denying that the baby or the mentally disabled human are subjects of welfare, however, would not only reflect very badly on the theory's generality. It would also severely diminish the theory's fidelity, which is a different but related cardinal virtue of accounts of welfare that Sumner distinguishes. It says that the account should correspond to the concept of welfare, as commonly understood, rather than talking about something completely different.

The self-fulfillment theory of welfare may account for these cases in the following way: We suggest that if aspects of the self are not applicable to any particular individual, they are not part of her welfare. Thus, these aspects may be left out of consideration. The fulfillment of all aspects of the self that are applicable to any particular individual, in turn, accounts for that individual's welfare. In that way, it seems that Haybron's self-fulfillment account of welfare can live up to the virtue of generality: It can "cover all core cases" and "provide a principled resolution of the peripheral cases" (Sumner 1996, 18). The cases where we doubt whether any aspect of the self applies are typically the cases where we doubt whether the being can be affected in her welfare and thus whether the concept of welfare applies. Nevertheless, we should always be cautious before striking an animal off the welfare list. Clams, for instance, are in the same phylum as cephalopod mollusks (octopi and squids), at least one member of which has been deemed worthy of protection under animal welfare law (Animals Scientific Procedures Act 1986).

A noteworthy implication of this interpretation of Haybron's account of welfare is that losing the potential for a certain aspect of self-fulfillment does not in itself count as harmful for the individual. After all, the individual's welfare would simply be assessed on the basis of the aspects that were still

available. If the individual could not be considered the same individual anymore, in a relevant sense, the loss would be considered harmful, though, because it would deprive the individual of all her future welfare.

Animal Nature

The third aspect of welfare, which Haybron more tentatively suggests including, is the fulfillment of the individual's sub-personal nature. According to Haybron, how well off an individual is may depend not only on the extent to which the individual fulfills her emotional self and succeeds in her identity-related projects. It may also depend on how the individual fares with regard to some other aspects that do not concern her personality. What Haybron has in mind here are criteria such as health, vitality, and physical pleasure. What is healthful for an individual, according to Haybron, does not depend on her personality. It is simply determined by the sort of creature the individual is. His idea is, for instance, that exercise is healthful for humans, simply because of the sort of beings we humans have evolved to be. Haybron refers to these aspects of our natures as our "nutritive" or "animal natures," indicating that certain things are good for us simply because of the sort of animal we are.

This aspect of Haybron's account of welfare can straightforwardly be applied to nonhuman animals. Theories of animal welfare typically include the criterion that animals are better off to the extent that they can live according to their species-specific nature (Webster 1994; Ohl and Van der Staay 2011). For instance, since the pig evolved as a terrestrial forager, living on an earthen substrate contributes to her flourishing, and it is part of the volant bird's nature-fulfillment to fly. Indeed, with regard to nonhuman animals, concern with their welfare has focused nearly exclusively on sub-personal nature-fulfillment. There has been very little attention to individual idiosyncrasies and self-fulfillment, properly speaking. Only recently, and mainly with regard to pets, individual idiosyncrasies are being mentioned in relation to animal welfare (Yeates 2013).

What are the implications for the generality of Haybron's account of welfare? Physical pleasure, health, and vitality are applicable to all animals,

including humans at various stages and levels of development. Physical pleasure does not apply to nonsentient beings. However, health and vitality are applicable to nonsentient individuals as well. It is conceivable to speak about the health and vitality of a nonsentient embryo and fetus, the health and vitality of a bug or spider, and the (assumably poor) health and vitality of a permanently comatose patient. Furthermore, one may even speak about the health and vitality of plants. Thus, our above proposal concerning the applicability of Haybron's account to a wide range of welfare subjects - which is to ignore the aspects of welfare that are not applicable to any particular individual - leads to the conclusion that Haybron's account of welfare is applicable to trees, bugs, embryos, or comatose patients. To the extent that at least some of the aspects of welfare apply to any particular individual, this individual is, according to that interpretation, a subject of welfare.

Vitality and health may count toward an individual's welfare only to the extent that they affect the individual's emotional flourishing or her success in fulfilling her identity-related projects.

We are not sure whether Haybron would happily embrace this implication, which certainly deviates from many prominent accounts of welfare, in particular subjectivist accounts such as hedonism and preferentialism. Many consider welfare as inherently subjective. For instance, Sumner explains that welfare literally takes the point of view of the subject, so that unless there is something that it is like to be creature x, creature x cannot have welfare (Sumner 1996). On the other hand, Aristotelian eudaimonistic accounts of welfare or objective-list accounts of welfare, with items such as health and vitality on the list, do not exclude nonsentient welfare subjects. Acceptance of nonsentient welfare subjects may also be in line with common-sense psychology. After all, many people normally speak about the (poor) welfare of a comatose patient, about a bug being made worse off by losing a leg, or even about the flourishing of a plant.

Welfare, Self, and Animal Nature

Here is a possible revision of Haybron's account of welfare that avoids the conclusion that nonsentient individuals are subjects of welfare. One may not include the fulfillment of the individual's sub-personal nature as a separate aspect of welfare. Instead, sub-personal nature fulfillment can be included, where relevant, as a part of emotional flourishing and the fulfillment of identity-related projects. To the extent that sub-personal nature-fulfillment does not bear on these two things, it can be left out of the definition of welfare. Vitality and health, for instance, may count toward an individual's welfare only to the extent that they affect the individual's emotional flourishing or her success in fulfilling her identity-related projects. In that sense, only beings that can flourish emotionally or have identity-related projects, and thus only sentient beings, are subjects of welfare. This would deviate from Haybron's current position since he holds that sub-personal nature-fulfillment directly contributes to an individual's welfare. For instance, he considers being healthy good for a person, in and of itself, whether the person desires and enjoys it or not.

It may seem odd to consider health to be only instrumentally valuable for welfare. However, this view of the value of health is in line with hedonist and preferentialist accounts of welfare. If one's ill health does not in any way - neither directly nor indirectly, neither in the short nor the long run - negatively affect one's experienced quality of life, then arguably one's welfare is not negatively affected. This scenario is empirically extremely unlikely, though, and this may explain why the idea that health is not an aspect of welfare seems odd.

Although Haybron currently holds that sub-personal nature-fulfillment counts directly toward welfare, doing away with this assumption may improve his theory in various ways. For instance, contrary to what Haybron suggests, the distinction between self-fulfillment and sub-personal nature-fulfillment cuts across the two other aspects of welfare, namely emotional flourishing and success in identity-related projects. So, positing sub-personal nature-fulfillment as a third aspect of welfare, besides these two, seems not to get things right. Instead, the fulfillment of an individual's sub-personal nature is an important aspect of her

emotional flourishing and of her identity-related projects.

Support for this reading can be found in the following citation where Haybron refers to bears in an analogy for pointing out the limitations of current happiness research:

A further limitation of most research... is the homogeneity of the populations studied. To an Amish farmer or San hunter, or the fisherman on the island mentioned..., the affluent Westerners who mostly get studied may seem to be leading pretty near identical ways of life. If all your subjects live in similar environments, then of course the role of environment in determining happiness is going to seem limited. It is as if one were to run a series of studies on zoo bears and circus bears, find not much difference in well-being between the groups, and conclude that it doesn't matter very much what environment you put bears in.

Here, Haybron seems to suggest that certain environments make bears happier and certain environments make humans happier. If this is true, happiness or emotional flourishing partly consists in nature-fulfillment rather than only in self-fulfillment. Thus, emotional flourishing and nature-fulfillment are not separate aspects of welfare, but the former contributes to the latter.

Welfare, according to Haybron, consists in self-fulfillment, in particular in emotional flourishing and success with regard to identity-related projects.

Another piece of support can be found in Haybron's discussion of the benefits of exposure to natural environments, notably trees, for human welfare. Haybron cites evidence that exposure to nature contributes positively to our emotions, moods, and mood propensities (Haybron 2011). If so, it holds because of the sort of creature we have evolved to be, rather than because of individual idiosyncrasies. Thus, emotional flourishing partly consists in the fulfillment of our sub-personal natures.

Last, Haybron's motivation for studying happiness was evoked by his belief that the people on an island where he spent much of his childhood were leading happier lives than the mainlanders

among whom he usually lived. This, as well, suggests that certain environments and lifestyles seem to enhance our happiness and welfare, simply because of the sort of creature we have evolved to be: the fulfillment of our sub-personal natures contributes significantly to our emotional flourishing rather than being a separate aspect of welfare.

Likewise, what we take physical pleasure in expresses both our sub-personal natures and our individual idiosyncrasies. Haybron lists physical pleasure under sub-personal nature-fulfillment. However, what we take physical pleasure in does not depend only on our sub-personal natures. Even for broccoli – Haybron's example of what humans take pleasure in simply because of the sort of creatures we are – it does not hold that all humans like it. The same is true for other physical "pleasures," such as cold showers, sunbaths, saunas, massages, and various sexual practices. Instead of listing physical pleasures under sub-personal nature-fulfillment, one might conceive of them as an aspect of emotional flourishing.

Conclusion

We have not endorsed here any particular position on the question of what entities should be ascribed welfare. Instead, we have explored the generality of Haybron's account of welfare. After all, in order to point out the implications of the self-fulfillment account of welfare for (welfarist) moral theory and welfare-directed policy-making, one needs to understand what this account entails, and whom it applies to.

Welfare, according to Haybron, consists in self-fulfillment, in particular in emotional flourishing and success with regard to identity-related projects. Haybron distinguishes several aspects of the self that bear on emotional flourishing and identity-related projects. These aspects of the self are applicable to nonhuman animals and to human beings to different degrees or not at all. We suggest an interpretation of Haybron's account of welfare according to which the self-fulfillment of an individual consists in fulfilling the aspects of the self that apply to that particular individual.

This interpretation of the self-fulfillment account of welfare has the virtue of generality. It also has the

virtue of fidelity, because any account of welfare that yielded the conclusion that babies, mentally disabled humans, and animals lack welfare would not seem to be in line with our common understanding of welfare.

Besides self-fulfillment, Haybron tentatively proposes taking on board the fulfillment of the individual's sub-personal nature as a third aspect of welfare. Including this as a separate aspect of welfare implies that nonsentient animals, comatose patients, and arguably even plants are subjects of welfare. If we do not include the fulfillment of the individual's sub-personal nature as a separate aspect of welfare, we avoid the inclusion of nonsentient beings as welfare subjects. This would imply, *contra* Haybron's current position, that sub-personal nature-fulfillment is only instrumentally valuable for welfare.

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The authors thank an anonymous reviewer for very helpful comments.

Notes:

¹ Although it is clear that emotions and moods are mental states, it is debatable whether Haybron is right in conceiving of mood propensities as mental states too. Arguably, if these concern the likelihood of being in a certain mood, they may not be themselves emotional states, since they are not themselves something that the individual consciously experiences. On the other hand, if mood propensities are not mental states, in the sense of states of the mind, then what are they?

Sources:

- Animals (Scientific Procedures) Act. 1986. Eliz. II, c 14, HMSO, London.
- Balcombe J. P. 2006. *Pleasurable Kingdom: Animals and the Nature of Feeling Good*. London: Macmillan.
- Bardo, M.T., J. E. Klebaur, J. M. Valone, and C. Deaton. 2001. "Environmental Enrichment Decreases Intravenous Self-administration of Amphetamine in Female and Male Rats." *Psychopharmacology (Berlin)* 155 (3): 278-84.
- Bateson, M., and S. M. Matheson. 2007. "Performance on a Categorisation Task Suggests That Removal of Environmental Enrichment Induces 'Pessimism' in Captive European Starlings (*Sturnus vulgaris*)." *Animal Welfare* 16 (Supplement 1): 33-36.
- Bekoff, M., and J. Pierce. 2010. *Wild Justice: The Moral Lives of Animals*. Chicago: University of Chicago Press.
- Bell, A. M., and A. Sih. 2007. "Exposure to Predation Generates Personality in Threespined Sticklebacks (*Gasterosteus aculeatus*)." *Ecology Letters* 10 (9): 828-34.
- Blackmore, C. J., and R. Heinsohn. 2007. "Variable Mating Strategies and Incest Avoidance in Cooperatively Breeding Grey-crowned Babbler." *Animal Behaviour* 75 (1): 63-70.
- Bradshaw, G. A., A. N. Schore, J. H. Poole, C. J. Moss, and J. L. Brown. 2005. "Elephant Breakdown." *Nature* 433 (7028): 807.
- Braithwaite V. 2010. *Do Fish Feel Pain?* Oxford: Oxford University Press.
- Brosnan, S. F., and F. B. M. de Waal. 2003. "Monkeys Reject Unequal Pay." *Nature* 425: 297-99.
- Brüne, M., U. Brüne-Cohrs, W. C. McGrew, and S. Preuschoft. 2006. "Psychopathology in Great Apes: Concepts, Treatment Options and Possible Homologies to Human Psychiatric Disorders." *Neuroscience and Biobehavioral Reviews* 30 (8): 1246-59.
- Burgdorf, J., and J. Panksepp 2001. "Tickling Induces Reward in Adolescent Rats." *Physiology and Behavior* 72 (1-2): 167-73.
- Carere, C., and K. Van Oers. 2004, "Shy and Bold Great Tits (*Parus major*): Body Temperature and Stress Rate in Response to Handling Stress." *Physiology and Behavior* 82 (5): 905-12.

- Danbury, T. C., C. A. Weeks, J. P. Chambers, A. E. Waterman-Pearson, and S. C. Kestin. 2000. "Self-selection of the Analgesic Drug, Carprofen, by Lame Broiler Chickens." *Veterinary Record* 146 (11): 307-11.
- de Waal F., 1996. *Good Natured: The Origins of Right and Wrong in Humans and Other Animals*. Cambridge, Mass.: Harvard University Press.
- Elwood, R. W. 2011. "Pain and Suffering in Invertebrates?" *ILAR Journal* 52 (2):175-84.
- Engl, A. E., J. C. Beehner, T. J. Bergman, P. L. Whitten, R. R. Hoffmeier, R. M. Seyfarth, and D. L. Cheney. 2006. "Female Hierarchy Instability, Male Immigration, and Infanticide Increase Glucocorticoid Levels in Female Chacma Baboons." *Animal Behaviour* 71 (5): 1227-37.
- Foote, L. A., and J. D. Crystal. 2007. "Metacognition in the Rat." *Current Biology* 17 (6): 551-55.
- Gallop, G. G. 1970. "Chimpanzees: Self-recognition." *Science* 167 (3914): 86-87.
- Harding, E. J., E. S. Paul, and M. Mendl. 2004. "Animal Behavior: Cognitive Bias and Affective State." *Nature* 427 (6972): 312.
- Haybron, D. M. 2008. *The Pursuit of Unhappiness: The Elusive Psychology of Well-Being*. Oxford: Oxford University Press.
- . 2011. "Central Park: Nature, Context, and Human Wellbeing." *International Journal of Wellbeing* 1 (2): 235-54.
- Horowitz, A. 2009. "Attention to Attention in Domestic Dog (*Canis familiaris*) Dyadic Play." *Animal Cognition* 12 (1): 107-18.
- Matheson, S. M., L. Asher, and M. Bateson. 2008. "Larger, Enriched Cages Are Associated with 'Optimistic' Response Biases in Captive European Starlings (*Sturnus vulgaris*)." *Applied Animal Behaviour Science* 109: 374-83.
- Ohl, F., and F. J. Van der Staay. 2011. "Animal Welfare: At the Interface between Science and Society." *Veterinary Journal* 192 (1): 13-19.
- Panksepp, J. 2004. *Affective Neuroscience: The Foundations of Human and Animal Emotions*. Oxford: Oxford University Press.
- Panksepp, J., and J. Burgdorf. 2003. "'Laughing' Rats and the Evolutionary Antecedents of Human Joy?" *Physiology and Behavior* 79 (3): 533-47.
- Rajala, A. Z., K. R. Reininger, K. M. Lancaster, and L. C. Populin. 2010. "Rhesus Monkeys (*Macaca mulatta*) Do Recognize Themselves in the Mirror: Implications for the Evolution of Self-Recognition." *PLoS ONE* 5 (9): e12865. Accessed July 22, 2013. <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0012865>.
- Range, F., L. Horn, A. Viranyi, and L. Huber. 2009. "Effort and Reward: Inequity Aversion in Domestic Dogs?" *PNAS* 106 (1): 340-45.
- Richardson, D. S., T. Burke, and J. Komdeur. 2007. "Grandparent Helpers: The Adaptive Significance of Older Post-dominant Helpers in the Seychelles Warbler." *Evolution* 61 (12): 2790-800.
- Rollin B. 1989. *The Unheeded Cry: Animal Consciousness, Animal Pain, and Science*. New York: Oxford University Press.
- Sherwin, C. M. 2001. "Can Invertebrates Suffer? Or, How Robust is Argument-by-Analogy?" *Animal Welfare* 10: S103-18.
- Sherwin, C. M., and I. A. S. Olsson. 2004. "Housing Conditions Affect Self-administration of Anxiolytic by Laboratory Mice." *Animal Welfare* 13 (1): 33-39.
- Siviy, S. M., A. E. Fleischhauer, L. A. Kerrigan, and S. J. Kuhlman. 1996. "D2 Dopamine Receptor Involvement in the Rough-and-Tumble Play Behavior of Juvenile Rats." *Behavioral Neuroscience* 110 (5): 1168-76..
- Skutch, A. F., and D. Gardner. 1999. *Helpers at Birds' Nests: A Worldwide Survey of Cooperative Breeding and Related Behavior*. Ames: University of Iowa Press.
- Stoskopf, M. K. 1994. "Pain and Analgesia in Birds, Reptiles, Amphibians, and Fish." *Investigative Ophthalmology & Visual Science* 35 (2): 775-80.
- Sumner, L. W. 1996. *Welfare, Happiness and Ethics*. Oxford: Oxford University Press.
- Webster, J. 1994. *Animal Welfare: A Cool Eye towards Eden*. Oxford: Blackwell Science.
- Weiss, A., M. C. Gartner, K. C. Gold, and T. S. Stoinski. 2012. "Extraversion Predicts Longer Survival in Gorillas: An 18-year Longitudinal Study." *Proceedings of the Royal Society B*, 280 (1752): 2012-31.
- Yeates, J. 2013. "How Happy Does a Happy Animal Have To Be (and How Can We Tell)?" *RSPCA Australia Scientific Seminar, Melbourne University, February 27 2013*.