



Cow Persons? How to Find Out Commentary on Marino and Allen (2017) The Psychology of Cows.

Kristin Andrews

Department of Philosophy, York University, Toronto, Canada

*Corresponding author (Email: Andrewsk@yorku.ca)

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If we come to find that cows have rich mental lives, are there ethically important consequences for how we relate to and treat them? A positive answer to this question motivates the review paper, but the question itself remains unexamined. While it might seem obvious that anything with a mental life is worthy of moral considerability, what that moral considerability amounts to will differ depending on the moral theory we accept, the context, and the particular mental capacities that the individual has. Furthermore, as we learn more about plants, it has become tempting to talk about plant minds, feelings, learning and cognition, and to examine the ethical implications (Pelizzon & Gagliano, 2015). Do pea plants or mimosa have a rich mental life too, and, if so, are there ethically important consequences?

As an attempt to tie the science to the ethics, we can turn to the concept of *person*. John Locke's influential account takes a person to be "a thinking intelligent being, that has reason and reflection, and can consider itself as itself, the same thinking thing, in different times and places" (Locke, 1690). Such a creature is, in philosopher Tom Regan's words, an "experiencing subject of a life" and hence, for Regan, has rights (Regan, 2004). It might be that there are moral patients that are not persons, such as ecosystems, stem cells, or works of art, but it is extraordinarily difficult to distinguish ethical patients from those things not worthy of moral considerations within the realm of non-persons. But everyone agrees that persons are worthy of moral consideration if anything is, so it is easier to defend moral status once some degree of personhood is evident. The line between persons and non-persons might be fuzzy, it might be under dispute, and we may come to reject the distinction whole cloth. But, at the beginning of the investigation into the moral status of a particular species, personhood is a good place to start, because we already have a vague idea of what persons are—we have a person stereotype, even if it has not been well-specified—and there is some reason to think that our take on what counts as a person is conceptually prior to our understanding of what is required for moral patienthood. By starting with this conceptually more basic notion of person, and by offering a sketch of the personhood stereotype, the relationship between particular cognitive and affective properties of a species and their moral status can be clarified. Scientists interested in determining a species' moral status can use the personhood stereotype to structure their future research, investigating just those properties associated with personhood. Not all cognitive properties need be morally relevant, so beginning an investigation into moral standing by looking at intelligence or some arbitrary list of cognitive abilities might not be the best strategy. For example,

though cows have spatial cognitive abilities, such abilities don't have explicit moral implications on any major ethical theory.

Drawing on what philosophers have said about personhood (Chan & Harris, 2011; DeGrazia, 1997, 2007; Locke, 1690; Rowlands, 2016; Varner, 2012), I (Andrews, 2017) have developed a personhood stereotype consisting of the following properties:

1. Consciousness or sentience
2. A sense of self that persists through time; self-awareness
3. Rational problem solving
4. Autonomy with free will
5. Sociability
6. Moral agency
7. Value one's own existence
8. Communicative capacity
9. Narrative story of one's own life
10. Personality

Many of these properties come in degrees. One might have some communicative capacity without full-blown language. One might be sensitive to moral features of the world without representing moral principles. And one might have the ability to think about the future without having a full-blown sense of self, or a narrative story of own's life. A person doesn't need to have a highly developed form of all these properties. Furthermore, a person doesn't need to have all of them to be considered a person. Consider the child who lacks a narrative story of self, or the psychopath who isn't moved by moral considerations, or the depressed person who doesn't value their own existence. This list serves to demonstrate ways in which one might be a person, and hence to be morally considerable. It provides a stereotype of person—a set of beliefs about the personal attributes of a category of individuals. I hope it also provides a useful guide for doing science that can be used in making ethical arguments about the treatment of animals.

How do cows fare on this list? **Consciousness** can be understood as sentience, or being able to experience. While the term isn't used in the article, the evidence presented that cows experience emotions—reactivity in terms of fear, nervousness and discomfort, and social bonding associated with stress reduction—indicates that cows are conscious in this sense. **Sociability** and **personality** (or individual differences that are stable in similar situations) are also evident, and given consciousness plus high reactivity, arguably cows **value their own existence** in some sense.

There is little discussion of anything that might look like **moral agency**, **communicative abilities**, or **having a narrative story of one's life**. Future research could investigate the presence of these properties. Moral agency could be investigated in terms of behaviors such as cooperation, punishment, variable treatment of different individuals (such as the young or weak vs. the strong), obedience to authority, guilt behaviors, mutualism or reciprocity, and solidarity behaviors. The reported existence of maternal care bonding and distress at the removal of the calf demonstrates a biological care response that may be further investigated; we can ask whether such emotional responses are directed to unrelated individuals, and whether nonfunctional grief behaviors follow the death or removal of a calf. Having a narrative story of one's life could be investigated by looking for evidence of mental time travel or episodic thinking about past and future in cows. Methods for studying communicative abilities are familiar from ethology and animal behavior, and could be adapted to examine possible cow communicative behaviors.

Other properties are less clear. The stated evidence that cows are **rational problem solvers** comes primarily from the maze learning and invisible displacement tasks. Cows can learn, but not all learning indicates rationality. Future research could examine cows' ability to solve puzzles that require logical thinking or abstract representations of possibility. For example, cows might be given a version of the Chrysippus dog problem such as has been given to animals such as pigeons (Lauffer, Castro, & Wasserman, 2017). The Stoic philosopher proposed this behavior as evidence of rationality: a dog tracks a rabbit down a path, and, arriving at a three-way crossroad, the dog quickly sniffs the first two paths; not finding the scent in either of the first two options, he immediately runs down the third path without

another sniff. It appears the dog engages in a reasoning style that takes the form of disjunctive syllogism: A or B or C. But, neither A nor B. Therefore C.

The evidence presented as indicating that cows have **self-awareness** is perhaps the weakest. Cows in a maze-learning task who controlled delivery of their own reward responded more positively in anticipation of reward than did cows who didn't control delivery. The increased excitement is explained in terms of the cow recognizing that they can control the delivery of reward. Alternatively, the control may make the reward more rewarding without this self-knowledge—the feeling of control itself may be rewarding, without needing to know what that feeling is, i.e., without metacognitive abilities. The advances in research on metacognition in monkeys (e.g. Basile et al., 2015) and apes (e.g. Call & Carpenter, 2001) may be used to design experiments to test for metacognitive abilities in cows. It may be there, but the current state of research doesn't provide sufficient evidence.

Evidence for **autonomy or free will** could be derived from the other properties, such as rationality. Or, as we come to know more about human behavior, and to challenge philosophical views of libertarian free will, we might decide to abandon that requirement for personhood—despite the common view that in order to be a person you must be able to act differently than you in fact acted.

As a first step toward an argument that cows are moral patients, the article offers evidence that ethicists can use to make their arguments. But, perhaps more importantly, Marino and Allen show us that much more research needs to be done.

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