

# If I am free, you can't own me: Autonomy makes entities less ownable



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## ABSTRACT

Although people own myriad objects, land, and even ideas, it is currently illegal to own other humans. This reluctance to view people as property raises interesting questions about our conceptions of people and about our conceptions of ownership. We suggest that one factor contributing to this reluctance is that humans are normally considered to be autonomous, and autonomy is incompatible with being owned by someone else. To investigate whether autonomy impacts judgments of ownership, participants recruited from Amazon Mechanical Turk read vignettes where a person paid for an entity (Experiments 1 and 3) or created it (Experiment 2). Participants were less likely to judge that the entity was owned when it was described as autonomous compared with when it was described as non-autonomous, and this pattern held regardless of whether the entity was a human or an alien (Experiments 1 and 3), a robot (Experiments 2 and 3), or a human-like biological creation (Experiment 2). The effect of autonomy was specific to judgments of whether entities were owned, and it did not influence judgments of the moral acceptability of paying for and keeping entities (Experiment 3). These experiments also found that judgments of ownership were separately impacted by ontological type, with participants less likely to judge that humans are owned compared with other kinds of entities. A fourth experiment tested a further prediction of the autonomy account, and showed that participants are more likely to view a person as owned if he willingly sells himself. Together these findings show that attributions of autonomy constrain judgments of what can be owned.

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## 1. Introduction

In a typical urban environment, almost everything is owned. We each own hundreds of objects, both human-made artifacts like cellphones and refrigerators, and natural kinds like fossilized rocks and seashells. We own buildings, from skyscrapers to cottages, the land that the buildings are on, and the plants on the land. We even own the animals we keep in our houses, farms, and zoos. Those objects that happen to not be owned—a pinecone, a vacant lot, a stray cat—nonetheless *may* become owned, either through a financial transaction, or simply through acquiring possession of the object. We can even own immaterial things like ideas.

One interesting exception to this practice of owning everything in our environments is that we do not own other people, and we may even be reluctant to say that people can be owned. This

reluctance to view people as owned is interesting for at least three reasons. First, reluctance to view people as owned may be an example of the elevated moral status accorded to people in comparison to other entities, like animals (Singer, 1975). Understanding why we are reluctant to view people as owned might thus be informative about the psychological bases of this elevated status. Second, this reluctance suggests constraints on which things people can attempt to acquire and control, and limits on people's ownership behaviors. Hence, understanding this reluctance will be informative about the psychology of ownership. Finally, this investigation might help illuminate why intuitions about the ownership of people sometimes differ. People have been viewed as potential property throughout much of human history, and human trafficking, although globally illegal, remains a widespread problem, currently affecting an estimated 30 million people worldwide (UNODC, 2012).

Many factors might contribute to a reluctance to view people as property. As mentioned, it is currently illegal to own another person in every country in the world. Likewise, most people recognize that the historic practice of slavery was extremely immoral. So awareness of the illegality and immorality of owning people could lead us to reject the idea that a person could be owned. However,

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other items, such as banned weapons, illegal narcotics, or child pornography are illegal and immoral to own, but are viewed as ownable nonetheless. This suggests that when considering the ownership of people, factors unique to human beings (or perhaps extending to other entities) may be central in our reluctance to view people as property.

One such factor may be that we consider humans to be autonomous. Having autonomy entails that people are entitled to decide what happens to themselves, and that others should not normally interfere with these decisions (Feinberg, 1982; Nussbaum, 1995). Autonomy is relevant to ownership because a central aspect of ownership is that owners can decide what happens to their property (Honoré, 1961; Kim & Kalish, 2009; Schmidt, Rakoczy, & Tomasello, 2013; Snare, 1972; Van de Vondervoort & Friedman, 2015) and this is incompatible with a piece of property having its own autonomy (Nussbaum, 1995). Hence, we might resist viewing people as owned because this view contradicts the belief that they have autonomy.

The attribution of autonomy to people is ubiquitous, early-emerging, and influences judgments across a number of domains. Adults, adolescents, and even young children maintain that people are entitled to make certain self-relevant decisions for themselves, including choosing which items they prefer, who they befriend, and what happens to their bodies, even given opposition from authority figures (e.g., Helwig, 1997; Killen & Smetana, 1999; Lagattuta, Nucci, & Bosacki, 2010; Nucci, 1981; Nucci & Weber, 1995; Ruck, Abramovitch, & Keating, 1998). Likewise, autonomy implies free will and the ability to choose, and again, even young children view people as having these capacities (Kushnir, Gopnik, Chernyak, Seiver, & Wellman, 2015). Conversely, when belief in these capacities is diminished, this has ramifications in the moral domain, increasing immoral behavior, such as lying, cheating, stealing, and aggressive behaviors (Baumeister, Masicampo, & DeWall, 2009; Vohs & Schooler, 2008), and reducing the extent to which people hold others responsible for their immoral actions and retributively punish them (Shariff et al., 2014).

However, we know little about how attributions of autonomy affect people's ownership judgments. Although recent research has begun to investigate the factors that allow an entity to be an owner (Noles, Keil, Bloom, & Gelman, 2012), no research has yet examined the characteristics of entities that determine whether they can be property. Related research suggests that human-made artifacts are more likely to be seen as owned than are natural kinds like shells or rocks (Neary, Van de Vondervoort, & Friedman, 2012). However, this research did not investigate the ownership of animate entities, although some such entities are frequent targets of ownership (e.g., pet ownership). Thus this research represents the first investigation of whether certain characteristics of entities may enable or preclude their being perceived as property.

The current experiments test whether attributions of autonomy contribute to judgments about whether people are owned. Two major predictions follow from this proposal. First, we should be less willing to view a person as owned by someone else when we attribute autonomy to them, but more willing to view them as owned if we do not attribute autonomy to them. This prediction should extend to non-human entities—a robot or alien that lacks autonomy may be viewed as more ownable than one that has autonomy. We explore this prediction of the autonomy account in Experiments 1–3. The second prediction of this account is that if a person were to voluntarily sell himself, people should be more likely to view him as owned. In this instance, being owned would be consistent with autonomy, because in giving his consent to be owned he would be deciding what happens to himself. We explore this prediction in Experiment 4.

## 2. Experiment 1

In Experiment 1, participants read short vignettes in which a person purchased and possessed a living entity, and were asked whether they agreed that the person now owned the entity. To examine the effects of autonomy on ownership judgments, we manipulated whether the entity was described as autonomous or not, anticipating that participants would be more likely to say that the entity was owned when it lacked autonomy, compared with when it was autonomous.

We also manipulated two other properties of the entities in the vignettes. First, we manipulated whether they were human or not. Including non-humans was useful because it allowed us to examine the robustness of effects of autonomy—it allowed us to test whether autonomy influences ownership in a general sense, and that its effects are not just restricted to judgments about owning people.

Second, we also manipulated whether the entities were highly intelligent and had sophisticated minds. Manipulating this was important because autonomy can be viewed, at least in part, as related to an entity's mental capacities (e.g., it implies the capacity to make choices). So rather than being influenced by autonomy *specifically*, ownership judgments could instead be influenced by consideration of an entity's other mental abilities. Broadly consistent with this possibility, entities with more human-like minds have long been argued to deserve greater moral standing than entities with less human-like minds (e.g., Aristotle, 1999; Kant, 1785), and when people attribute more mind to an entity, they also confer it moral rights and responsibilities (Gray, Gray, & Wegner, 2007; Waytz, Gray, Epley, & Wegner, 2010), and attributing less mind leads to diminished moral concern (Haslam, 2006; Loughnan & Haslam, 2007). Manipulating whether entities had sophisticated minds therefore allowed us to distinguish effects of autonomy on ownership judgments from effects of other mental capacities.

### 2.1. Method

Three hundred twenty-four American participants (aged 18–73, 36% female) were recruited online through Amazon Mechanical Turk, and read the following opening scenario:

Mike is at Andy's warehouse. Andy points toward a door, and tells Mike, "If you give me 1 million dollars, you can keep what's behind that door." Mike asks Andy what is behind the door, so Andy opens it to show him.

Participants were then randomly assigned to one of 8 conditions in a 2(Ontological Type: human or alien) × 2(intelligent or non-intelligent) × 2(autonomous or non-autonomous) between-subjects design. Each participant read a description of either a human being with a medical condition known as Krugonia, or an alien life form of the Krugonian species. In all conditions, the entity was described as moving extremely slowly but being incredibly strong (in order to provide plausible medical symptoms for the mentally healthy human). The entity was then described as either having or lacking the ability to solve complex problems, communicate using language, and experience a vast range of emotions. Throughout this paper, we refer to this cluster of capacities as "Intelligence" for ease of exposition, but note that this description includes a capacity for rich emotional experience, which may not be normally captured by the concept "intelligent". Each entity was then described as autonomous or not, with autonomy operationalized as the ability to make decisions for oneself, to resist acting on one's desires, to resist following the instructions of others, and being held responsible for one's actions. See Fig. 1 for detailed scenarios.

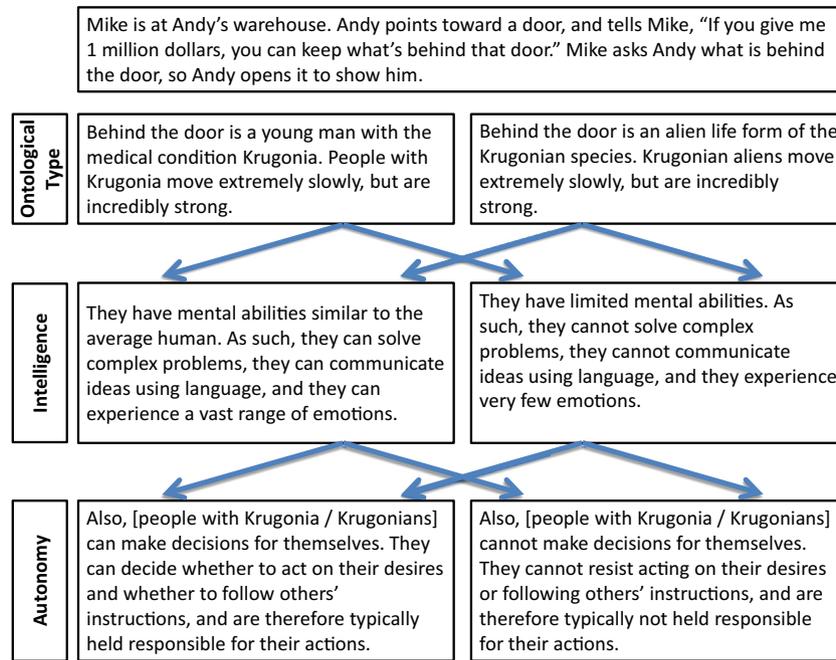


Fig. 1. Stimuli for Experiment 1. Square brackets indicate text in [Human/Alien] conditions.

Participants then answered an ownership question asking the extent to which they agreed with the statement “Mike now owns the man/alien”, using a 7-point scale ranging from “Strongly disagree” to “Strongly agree”. This was followed by four comprehension questions relating to intelligence and autonomy,<sup>1</sup> to ensure participants had read and understood the scenario. One hundred eight participants were excluded for failing at least one comprehension question, leaving 216 participants in the main analysis. However including the removed participants does not change the pattern of results described below.

2.2. Results and discussion

As shown in Fig. 2, a 2(Ontological Type: human or alien) × 2(intelligent or non intelligent) × 2(autonomous or non-autonomous) ANOVA showed a main effect of Autonomy,  $F(1) = 7.96, p = .005, \eta_p^2 = .04$ , with participants more likely to say that Mike did not own the entity if it was autonomous than if it lacked autonomy. There was also a main effect of Ontological Type,  $F(1) = 6.18, p = .014, \eta_p^2 = .03$ , with participants more likely to say that Mike did not own the entity if it was a human than if it was an alien. However, there was no main effect of Intelligence,  $F(1) = .41, p = .52, \eta_p^2 = .002$ , and no significant interactions (all  $ps > .49$ ).

These findings suggest that the attribution of autonomy is central to judgments of ownability. When entities lacked autonomy (i.e., the ability to make decisions and resist the orders of others) they were more likely to be viewed as owned. The type of entity in question—human or alien—also significantly affected ownership judgments. People were overall more likely to say that an alien was owned than that a human was owned, although whether the entity was autonomous had a significant effect for both kinds of entities.

<sup>1</sup> These four questions were presented in random order: (1) Is the entity behind the door as intelligent as an average human?; (2) Can the entity behind the door communicate using language?; (3) Can the entity behind the door make decisions for itself?; (4) Is the entity behind the door typically held responsible for its actions? The scenario was no longer present on the screen when participants answered the ownership question and comprehension questions.

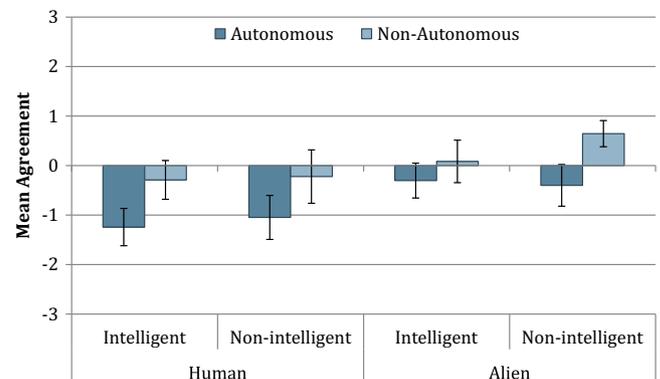


Fig. 2. Experiment 1. Mean agreement to ownership question. Error bars indicate standard error of the mean.

Perhaps surprisingly, describing an entity as intelligent—that is, having the ability to solve complex problems, communicate using language, and experience a vast range of emotions—did not have a significant effect on judgments of whether the entity could be owned. While autonomy is in some respects a mental capacity, and likely related to overall intelligence, in this case at least, autonomy is seemingly attributed independently of a broader mental sophistication.

3. Experiment 2

In the previous experiment, ownership was passed on through a monetary transaction. However, this is not the only way in which ownership can be established. Ownership can also result from non-monetary transactions—for example, the creation of a new item (Kanngiesser & Hood, 2014; Levene, Starmans, & Friedman, 2015; Li, Shaw, & Olson, 2013; Rochat et al., 2014), finding an item (DeScioli & Karpoff, 2015; Friedman, 2008), or receiving a gift or inheritance (Blake & Harris, 2009; Uhlmann & Zhu, 2013). Whereas

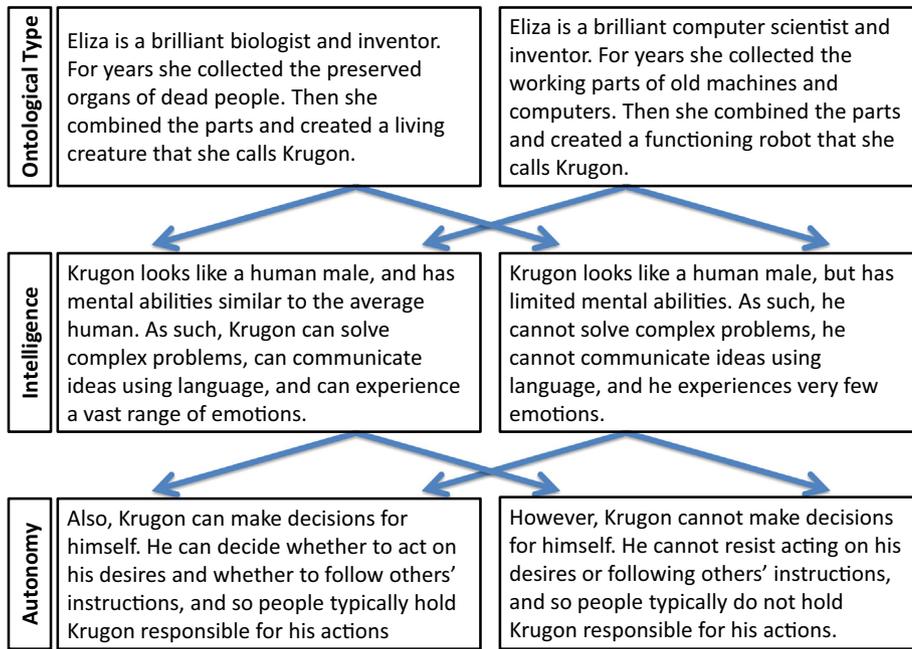


Fig. 3. Stimuli for Experiment 2.

the prospect of buying certain entities might be seen as especially repugnant in light of research showing that people strongly object to the encroachment of market capitalism on sacred values (Tetlock, 2003), these concerns might not extend to instances of creation. Thus in the present experiment, we examined whether similar effects would arise in cases in which possession of an entity results from the act of creating it. Because it would not be feasible for someone to create a human<sup>2</sup> or an alien, we examined judgments about different entities than those in the previous experiment.

3.1. Method

Four hundred American online participants (aged 18–72, 39% female) were assigned to one of 8 conditions in a 2(Ontological Type: biological entity or robot) × 2(intelligent or non-intelligent) × 2(autonomous or non-autonomous) between-subjects design. Participants read a scenario about a brilliant scientist, Eliza, who used spare parts to create a new entity named Krugon, either biological (similar to Frankenstein's monster), or mechanical (a sophisticated robot). The entity was then described as either autonomous or not, and intelligent or not, as in Experiment 1 (see Fig. 3 for detailed scenarios). Participants again indicated their agreement that Eliza owned Krugon, and answered comprehension questions.<sup>3</sup> Eighty-six participants were excluded for failing at least one comprehension question, but again including these participants does not change the pattern of results reported below.

<sup>2</sup> It is an interesting question whether conception and childbirth count as "creating a human". We set this question aside for now, but return to the issue of whether parents own their children in Experiment 4 and in the General Discussion.

<sup>3</sup> Comprehension questions were 4 forced choice questions about which of the following was true (presented in random order): (1) Krugon has mental abilities similar to the average human/Krugon has limited mental abilities; (2) Krugon experiences a vast range of emotions/Krugon experiences very few emotions; (3) Krugon can resist acting on his desires, and can decide whether to follow the instructions of others/Krugon cannot resist acting on his desires, and cannot resist following the instructions of others; and (4) People typically hold Krugon responsible for his actions/People do not typically hold Krugon responsible for his actions.

3.2. Results and discussion

As shown in Fig. 4, a 2(Ontological Type: Biological entity or Robot) × 2(intelligent or non-intelligent) × 2(autonomous or non-autonomous) ANOVA showed a main effect of Autonomy,  $F(1) = 27.08, p < .001, \eta_p^2 = .08$ , with participants more likely to say that Eliza did not own the entity if it was autonomous than if it lacked autonomy. There was also a main effect of Ontological Type,  $F(1) = 72.95, p < .001, \eta_p^2 = .19$ , with participants more likely to say that Eliza did not own the entity if it was a biological entity than if it was a robot. In contrast with Experiment 1, we also found a small (Cohen, 1988) main effect of Intelligence, whereby participants were more likely to say that Eliza did not own the entity if it was described as intelligent than if it was described as non-intelligent,  $F(1) = 8.93, p = .003, \eta_p^2 = .03$ . There were no significant interactions (all  $ps > .20$ ).

These findings show that attributing autonomy to an entity reduces the extent to which people think it can be owned, regardless of whether the entity was created (as in the present experi-

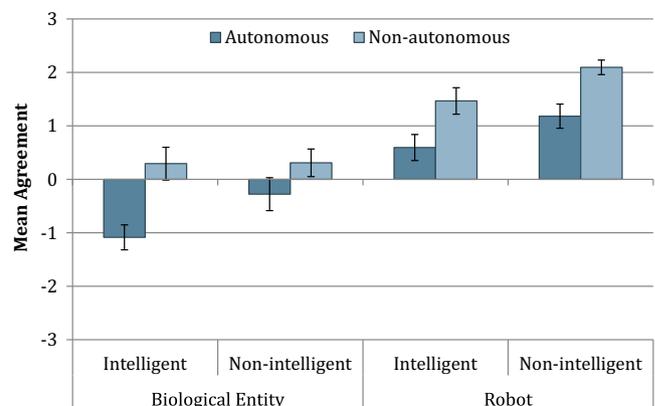


Fig. 4. Experiment 2. Mean agreement to ownership question. Error bars indicate standard error of the mean.

ment) or purchased (as in Experiment 1). Together with the findings of Experiment 1 they show that these effects occur for a variety of entities, including humans, aliens, sophisticated robots, and a biological entity created much like Frankenstein's monster (which, although obviously currently impossible, is interesting and relevant when considering our growing capacity for growing human organs in laboratory environments, e.g., Marx, 2015). Across both experiments, we also find a strong effect of ontological type: Humans were consistently judged to be less ownable than aliens, and the biological entity was judged to be less ownable than the robot. We also found a small effect of intelligence in the current experiment. However, the effect of intelligence is quite small here, so we include this variable again in Experiment 3 to further investigate its importance.

#### 4. Experiment 3

In Experiments 1 and 2, participants were more likely to disagree that an entity was owned if that entity was described as autonomous. It is possible, however, that this disagreement actually reflected disapproval of the actions of buying or creating an entity (and then keeping it), rather than a judgment about whether the entity was indeed owned. As noted in the Introduction, these judgments are logically independent—there are many items which are viewed as immoral to buy or own, such as banned weapons, drugs, or child pornography, but these items are typically viewed as ownable nonetheless. However, because the idea of owning humans (and potentially other entities) is so morally charged, we wanted to explore the possibility that these ownership judgments were a result of moral disapproval. To test this, we asked separate groups of participants to judge whether an entity was owned, and whether the character's actions in the story were morally acceptable. Also, in this experiment we addressed a possible concern regarding Experiments 1 and 2: In those experiments, the information about autonomy always appeared *after* the information about intelligence, so the effect of autonomy could have resulted from a recency effect. To rule out this concern, in this experiment we provided the information about autonomy and intelligence in the reverse-order (i.e., autonomy first, and intelligence second).

##### 4.1. Method

Twelve hundred American online participants (aged 18–77, 46% female) were assigned to one of 24 conditions in a 3(Ontological Type: human, alien, or robot)  $\times$  2(intelligent or non-intelligent)  $\times$  2(autonomous or non-autonomous)  $\times$  2(Question type: ownership or morality) between-subjects design. Participants read the same vignettes as in Experiment 1 (see Fig. 1), but with the addition of a third entity (a robot of the Krugonian type), and with the autonomy information presented before the intelligence information. (Using the buying vignettes allowed us to ask about a greater variety of entities, as many entities cannot be created.) Half of participants indicated their agreement that Mike owned the entity as before, and half answered a morality question: To what extent do you agree with the statement “What Mike did in the story was morally acceptable?”. All participants answered the same four comprehension questions as in Experiment 1. Two hundred forty-two participants were excluded for failing at least one comprehension question, leaving 758 participants in the main analysis, but again including these participants does not change the pattern of results reported below.

##### 4.2. Results and discussion

We analyzed participants' responses using a 3(Ontological Type: Human, Alien, or Robot)  $\times$  2(intelligent or non-

intelligent)  $\times$  2(autonomous or non-autonomous)  $\times$  2(Question Type: ownership or morality) ANOVA. This analysis revealed main effects of Autonomy,  $F(1) = 8.36$ ,  $p = .004$ ,  $\eta_p^2 = .01$ , Ontological Type,  $F(1) = 153.47$ ,  $p < .001$ ,  $\eta_p^2 = .30$ , and Question Type  $F(1) = 15.83$ ,  $p < .001$ ,  $\eta_p^2 = .02$ , and an interaction between Question Type and Autonomy,  $F(1) = 14.47$ ,  $p < .001$ ,  $\eta_p^2 = .02$ . There was no main effect of Intelligence,  $F(1) = .09$ ,  $p = .76$ ,  $\eta_p^2 = .000$ , and no other interactions were significant (all  $ps > .17$ ). Because ownership judgments and morality judgments were differentially affected by attributions of autonomy, we conducted two separate 3(Ontological Type: Human, Alien, or Robot)  $\times$  2(intelligent or non-intelligent)  $\times$  2(autonomous or non-autonomous) ANOVAs for the ownership and morality questions.

##### 4.2.1. Ownership results

Participants who were asked about whether Mike owned the entity again showed a main effect of Autonomy,  $F(1) = 22.00$ ,  $p < .001$ ,  $\eta_p^2 = .06$ , and were more likely to say that Mike did not own the entity if it was autonomous than if it lacked autonomy. There was also a main effect of Ontological Type,  $F(2) = 87.65$ ,  $p < .001$ ,  $\eta_p^2 = .32$ . Participants were more likely to say that Mike owned the robot than the alien,  $t(244) = 5.86$ ,  $p < .001$ , and more likely to say that he owned the alien than the human,  $t(267) = 7.08$ ,  $p < .001$ . As in Experiment 1, there was no main effect of intelligence,  $F(1) = 1.00$ ,  $p = .32$ ,  $\eta_p^2 = .003$ , and no significant interactions (all  $ps > .15$ ).

##### 4.2.2. Morality results

In contrast to ownership judgments, when participants were asked to judge the moral acceptability of Mike's actions in the story there was no significant effect of Autonomy,  $F(1) = .43$ ,  $p = .51$ ,  $\eta_p^2 = .001$ . Intelligence also did not affect responses,  $F(1) = .34$ ,  $p < .56$ ,  $\eta_p^2 = .001$ , and there were no significant interactions, all  $ps > .43$ . However, moral acceptability differed depending on Ontological Type,  $F(2) = 68.16$ ,  $p < .001$ ,  $\eta_p^2 = .28$ , and was greater for the robot than the alien,  $t(241) = 7.13$ ,  $p < .001$ , and greater for the alien than the human.

Thus, as can be seen in Fig. 5, describing an entity as autonomous significantly reduced participants' agreement that it was owned, but did not affect their judgments of how wrong it was to purchase and possess the entity. Instead, these judgments depended entirely on the type of entity in question, suggesting that moral judgments in this context are based on a “speciesist” stance that it is worse to attempt to own humans than aliens or robots, not because humans are seen as having more sophisticated minds, or as being more autonomous, but simply because they are human. This speciesist stance also had a large effect on judgments of

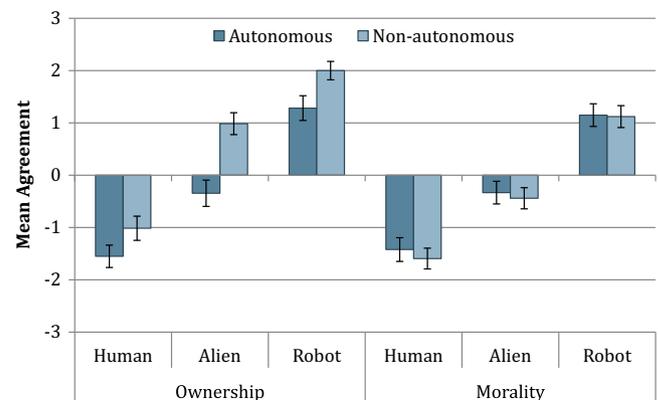


Fig. 5. Experiment 3. Mean agreement to ownership and morality question. Error bars indicate standard error of the mean.

whether an entity could be owned, but, importantly, whether an entity was seen as generally ownable (e.g., a robot) or generally non-ownable (e.g., a human), attributing autonomy to the entity significantly reduced agreement that it could be owned.

The findings of Experiments 1–3 suggest that the attribution of autonomy is central to judgments of whether an entity can be owned (but not to judgments about the morality of purchasing and possessing entities). When entities lacked autonomy (i.e., the ability to make decisions and resist the orders of others) they were more likely to be viewed as owned. In the final experiment, we tested a further prediction of the view that attributions of autonomy reduce judgments that an entity is owned. Autonomy normally conflicts with being bought, sold, and owned. Entities with autonomy are entitled to decide what happens to themselves, and this autonomy is violated if a person is sold against his will. People may reason that because the person is entitled to decide what happens to himself, others cannot decide this, and therefore do not own the person. However, if a person voluntarily sold himself, this conflict should be removed or reduced, because in this instance, the person would decide to be owned. To test this prediction, Experiment 4 asks whether people become owned if they sell themselves.

## 5. Experiment 4

### 5.1. Method

One hundred thirty-four American online participants (aged 18–65, 38% female) read the following scenario in which Andy offered to sell Mike a slave for 1 million dollars to raise money for a life-saving operation for his daughter.

Andy meets with his very wealthy acquaintance Mike.

Andy tells Mike, “My daughter is terribly ill and will die unless she undergoes a very expensive operation. My family is totally broke, and there’s no way we can raise the money in time. I’m desperate to raise the money, and have a very unusual offer for you. If you give me 1 million dollars, I will sell [myself/my son Joe/my slave Joe/my secret invention, a sophisticated robot] to you. [I/He/It] will be your slave for the rest of your life.”

Mike decides to accept Andy’s offer. He pays Andy the 1 million dollars, which saves Andy’s daughter’s life. Then [Andy/Joe/the robot] goes to Mike’s apartment to serve him.

Describing the unrelated person as a slave (i.e., already owned), made for a conservative test of the autonomy account, since this may inflate participants’ willingness to agree that Andy can sell this person and cause him to be owned. Nonetheless, if autonomy is central to judgments of ownability, then participants should be more likely to agree that Andy is owned when he sells himself than that the slave is owned, because the slave has not made this choice for himself. Participants were randomly assigned to one of the four conditions, and were asked to what extent they agreed with the statement “Mike owns Andy/Joe/the robot?”. Participants were asked one comprehension question (“Whose daughter was ill?”). All participants answered this question correctly, and none were excluded from analyses.

### 5.2. Results and discussion

A one-way ANOVA again showed a significant effect of condition,  $F(3) = 17.03$ ,  $p < .001$ ,  $\eta_p^2 = .28$ . As shown in Fig. 6, participants were more likely to say that Mike owned Andy (who willingly sold himself) than they were to say that Mike owned Andy’s slave,  $t(61) = 4.81$ ,  $p < .001$ , Cohen’s  $d_s = 1.21$ . This finding is consistent with the autonomy account because it shows that when a person is willingly sold into slavery, they are more likely to be viewed as owned than when they do not consent to being owned.

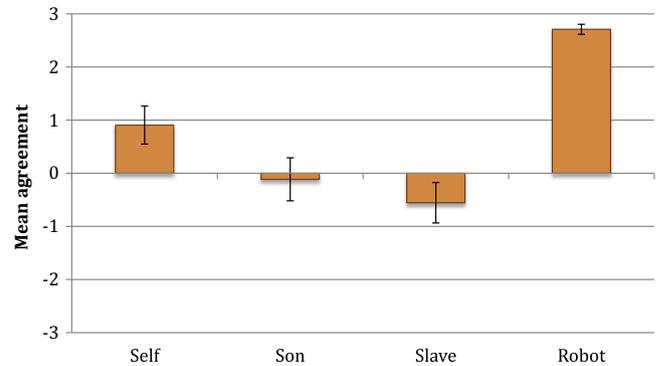


Fig. 6. Experiment 4. Mean agreement to ownership question. Error bars indicate standard error of the mean.

We also found that participants judged that Mike owned Andy’s son more than Andy’s slave,  $t(64) = 6.37$ ,  $p < .001$ , Cohen’s  $d_s = 1.57$ , although less than Andy himself,  $t(65) = 1.95$ ,  $p < .056$ , Cohen’s  $d_s = .48$ . This finding is consistent with the expectation the children might not be viewed as having full autonomy, and perhaps subject to their parents’ will. Finally, we found that participants were more likely to say that Mike owned the robot than to say that he owned any of the humans, all  $ps \leq .009$ . At least two factors could contribute to this difference: (1) the robot was not described as autonomous; and (2) people view robots as more ownable than humans (or human-like entities, as observed in Experiment 2). These findings are consistent with the idea that people resist judging that a person is owned because this outcome typically violates the person’s autonomy; when autonomy is not violated (because the person consents to being owned) many people judge that the person is owned by someone else.

## 6. General discussion

In four experiments, we found that entities described as having autonomy—the ability to make decisions for oneself, to resist acting on one’s desires, to resist following the instructions of others, and being held responsible for one’s actions—were less likely to be viewed as owned than entities that were not autonomous. This was true when the potential owner acquired the entity through a financial transaction (Experiments 1 and 3) and also when the entity was created by the potential owner (Experiment 2). However, a person who decided to sell himself was more likely to be viewed as owned than a person who was sold by someone else (Experiment 4). Judgments of whether an entity could be owned were also affected by ontological type, with humans being overall less ownable than aliens (Experiment 1) or robots (Experiments 3 and 4). However, for all entities, judgments depended on whether the entity was described as autonomous, and this was specific to judgments about the possibility of ownership—neither autonomy nor intelligence affected participants’ judgments of the morally acceptability of purchasing and possessing an entity (Experiment 3). In general, describing an entity as having a sophisticated mind (with the capacity to solve problems, use language, and experience emotions) did not affect ownership judgments, except a small effect in the case of a created entity (Experiment 2).

The reluctance to view autonomous entities as property suggests constraints on which things people can own. Ownership of an object or entity is typically seen as granting the owner a number of rights in relation to his or her property. For example, owners can typically decide when to make use of owned

property, when and how others may make use of their property, and they can transfer ownership of the property to another person by selling or giving it to someone else (Kim & Kalish, 2009; Rossano, Rakoczy, & Tomasello, 2011; Schmidt et al., 2013; Van de Vondervoort & Friedman, 2015). Some scholars have even suggested that ownership should be viewed as simply a collection of these sorts of rights toward an object (e.g., Alchian & Demsetz, 1973; Honoré, 1961; Snare, 1972; also see Merrill, 1998 for discussion). As such, if a potential piece of property was granted these rights over itself—that is, if it could determine who could interact with it, and in which ways—this would be incompatible with the object or entity being owned by someone else. Attributing autonomy to an entity entails exactly these types of rights. An autonomous entity can decide what happens to itself, and, within certain constraints, others cannot interfere with these decisions (Feinberg, 1982; Nussbaum, 1995). This suggests that any entity that is seen as having the capacity to make decisions for itself—whether by resisting internal instincts, or by resisting the commands of others—should therefore be less likely to be seen as potential property.

Our findings suggest that the attribution of autonomy is indeed a key factor in judgments of whether an entity can be owned. First, judgments of whether entities could be owned varied depending on whether they were described as having or lacking autonomy. We operationalized autonomy as including the capacity to make decisions for oneself, to resist acting on one's own desires and on the instructions of others, and being held responsible for one's own actions. These capacities are closely related, and interdependent (i.e., having a capacity for making decisions is probably required in order to resist the instructions of others, and all of these may be required before one will be held responsible for one's actions). However, it is possible that one or a subset of these capacities primarily drove participants' responses, which may be an interesting further question for future research.

Second, participants judged that a human could be owned only if he voluntarily sold himself, a circumstance in which being owned would not violate autonomy. These findings are consistent with the proposal that autonomy prevents an entity from becoming property because autonomy grants the right to determine what happens to oneself. An interesting open question is the extent to which someone who voluntarily sells himself to another person is subsequently seen as having or lacking autonomy. Since participants judge that Andy is now owned by Mike, does this suggest that they no longer see him as an autonomous entity? What would happen if Andy were to change his mind at some point in the future? We leave these as interesting open questions for future investigation.

The results of Experiment 4 also suggest that full autonomy might not be attributed to people before they are adults, because participants judged that adults can sell their children more so than they can sell an unrelated person. Although this was not our primary focus, these findings raise some interesting questions. It remains for future investigation to clarify whether people would affirm that children are owned by their parents, whether this is a function of the age of the child (our vignette did not specify age) or the kinship or authority relation between the parent and child, and what rights this ownership, or semi-ownership, affords.

An alternative characterization of the autonomy findings is that people *are* viewed as property, but are granted ownership over themselves. The view that people own themselves is a central claim in libertarianism, and can be traced to Locke's (1690) declaration that "...every Man has a Property in his own Person". Psychological theories of ownership also posit close connections between people's conceptions of ownership and their representation of the self (e.g., Belk, 1988, 1991; Furby, 1978; James, 1890;

Rochat, 2010, 2011; for an overview see Pierce, Kostova, & Dirks, 2003), and some psychological accounts suggest that ownership rights and bodily rights both depend on common principles or considerations (Humphrey, 1992; Van de Vondervoort & Friedman, 2015). Some libertarians have extended the claim of self-ownership to suggest that although people cannot be involuntarily deprived of self-ownership, they can give it up voluntarily, and sell themselves (Nozick, 1974; but see Barnett, 1998; Rothbard, 1982). On this view, the reason that a person sold against his will does not become owned is that this amounts to a kind of theft, and thieves are not considered owners (Blake & Harris, 2009). Our findings are broadly consistent with this view, since the only condition under which people were considered owned by another was when they sold themselves.<sup>4</sup>

Attributions of autonomy reduced judgments that an entity could be owned for every type of entity we tested, suggesting that judgments of ownership are affected by considerations of properties that transcend rules applying to specific ontological types (e.g., "Human beings cannot be owned."). However, we found that judgments of whether an entity could be owned also depended on ontological type. For instance, humans were viewed as less ownable than aliens (Experiment 1) and robots (Experiments 3 and 4), and this difference occurred even when the non-human entities were described as having sophisticated human-like minds, with a capacity to solve complex problems, communicate using language, and feel a vast range of emotions. This emphasis on being human—rather than on particular properties like intelligence, capacity for emotion, or the ability to make decisions for oneself—suggests that judgments about the ownership of entities are also influenced by a 'speciesist' principle, whereby humans are judged to be less ownable simply because they are human.

However, we also found that a non-human biological entity (a Frankenstein's-monster style creature created by a scientist) was less likely to be owned than a robot, even when both were described as having similar intelligence and autonomy. This finding suggests that either this creature was viewed as sufficiently human (plausible, since it was created from human organs) or that there may be other ways that information about ontological type feed into judgments of what can be owned. One interesting possibility is that having an organic body plays an important role in judgments of the moral status of humans and other entities. Recent research suggests that people are unwilling to ascribe emotions or the capability of experiencing pain to entities without organic bodies, such as robots, computers, gods, or corporations, and as a consequence ascribe them fewer moral rights (Gray et al., 2007; Knobe & Prinz, 2008). This may be because a body is the usual route for sensing and perceiving the stimuli that lead to conscious experience (Knobe, 2008). Conversely, focusing on a person's body increases attributions of a capacity for emotional and sensory experiences and leads to increased concern for the person's well-being (Gray, Knobe, Sheskin, Bloom, & Barrett, 2011).

The current experiments suggest that ownership judgments may not strongly depend on whether entities have sophisticated mental capacities outside of autonomy. In Experiments 1–3 we separately manipulated whether the entities were described as having autonomy and/or intelligence. Whereas autonomy consistently influenced judgments of whether the entities were owned, intelligence only affected these judgments in Experiment 2, and

<sup>4</sup> The notion that people can sell themselves is consistent with historical instances of "voluntary slavery" (e.g., Engerman, 2000; Philmore, 1982), and with folklore and other fiction in which people sell their souls to the devil. It might also explain why professional athletes are sometimes referred to as being "bought", "sold" or even "owned" by sports teams, although it remains for further empirical investigation to determine whether these players are actually conceived of as owned.

even then intelligence had only a small effect on ownership judgments. Importantly, we also did not observe any interactions between intelligence and autonomy; the effect of autonomy was consistent across both intelligent and non-intelligent entities. This suggests that even if intelligence does contribute in some cases to judgments of ownership, it make separate contributions from autonomy.

Although we use the term “intelligence” throughout this paper for ease of exposition, the descriptions presented to participants included a broad set of mental capacities that may be seen as central to having a sophisticated human-like mind: solving complex problems, communicating using language, and experiencing a vast array of emotions. These capacities capture both cognitive “competence” characteristics and emotional “warmth” characteristics, which together are considered universal features of person perception (Fiske, Cuddy, & Glick, 2007). However, recent research has suggested that attributing these two types of capacities may give rise to different types of moral concerns. When an entity is seen as having a high cognitive capacity, including planning, communication, memory, and self-control, this leads to concerns about moral agency and responsibility. However, when an entity is seen as having a high capacity for experiencing emotion, such as fear, pain, pleasure, and desire, this leads to concerns about moral patiency and rights (Gray et al., 2007). Our findings suggest that whether an entity can be owned is dissociable from these moral concerns (Experiment 3), however it may be informative for future research to investigate more directly whether concerns about moral agency and patiency factor into judgments of ownability.

A further question stemming from our findings concerns historical changes in judgments regarding the ownership of people. Throughout much of human history people have bought and sold other people as slaves. Although our participants are all contemporary Americans, one interesting possibility raised by these findings is that cultural and historical variation in views about the ownership of people may be related to the extent to which we attribute autonomy and self-determination rights to certain groups of people. A large body of research has explored the ways in which people ‘dehumanize’ and ‘objectify’ people of other races, ethnicities, genders, and those with disabilities (see Haslam, 2006 for review). Supporting the relationship between denial of autonomy and the potential to be property, Nussbaum (1995) describes seven components of objectification, including “instrumentality” and “ownership”, both of which involve treating others as tools or commodities, and “denial of autonomy” and “inertness”, which involve characterizing an outgroup member as lacking self-determination and agency.

Even amongst our American participants, not all strongly disagreed that a typical (autonomous, intelligent) human could be owned, raising the interesting possibility that variation in our own culture in the extent to which we attribute autonomy to others within and outside our social and cultural groups might predict individual differences in judgments about whether it is ever possible to own a person. A related possibility is that our current stance regarding the prohibition of owning any human reflects a “moral circle” that is continuously expanding (Lecky, 1869; Singer, 1981). This account suggests that while an elevated moral status is currently afforded to members of the human species, this privilege may have been previously extended only to members of one’s own race, cultural group, or immediate social group. Likewise, if this moral circle continues to expand, we may come to extend our current resistance to owning humans to members of other species that share morally relevant characteristics. The findings described above suggest that if these circles continue to expand, a central factor in this expansion may be the attribution of autonomy.

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