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# Psychological ownership: implicit and explicit

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Object ownership changes how people perceive objects and self through *psychological ownership*—the feeling that a thing is MINE. Psychological ownership usually tracks legal ownership, but the two can and do diverge. In this integrative review, I propose a dual-process model of psychological ownership. Antecedents of psychological ownership form self-object associations prompting an implicit inference of psychological ownership, which can then be accepted, corrected, or rejected by explicit judgments. The model explains cases where psychological ownership and legal ownership conflict and predicts psychological ownership felt in a variety of relationships between people and objects, including objects they legally own and use, objects they use but do not legally own, and objects they legally own but do not use.

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Ownership—whether an object is MINE or NOT MINE—is both a legal and psychological question. Ownership can sometimes be tricky to distinguish even in traditional markets where people own most of the objects they use (e.g. who has a claim to a theory, organization, social movement, or neighborhood?). Technological innovations such as platform markets, access-based consumption, and artificial intelligence further complicate this distinction as they make relationships between people and objects more varied [e.g. who has a claim to an experiential, digital, or autonomous good?; 1<sup>••</sup>]. Property law guides judgments of ownership in courts of law, but psychological inferences guide judgments of what is MINE and what is NOT MINE in mind [2,3<sup>••</sup>]. In this integrative review of psychological ownership, I propose that it is determined through a corrective dual-process model. Implicit intuitive judgments of psychological ownership can be accepted, rejected, or corrected by

explicit deliberative judgments. The model reconciles conflicts between legal and psychological ownership and predicts when psychological ownership will be felt in a variety of relationships between persons and objects, including for objects people own and use, objects people use but do not own, and objects people own but do not use.

## Legal and psychological ownership

### Legal ownership

Legal ownership of an object is generally attributed to the person or organization that possesses a ‘bundle’ of property rights, such as the rights to (i) use the object and exclude others from its use, (ii) profit from the object, (iii) sell, modify, or dispose of the object, and to (iv) enforce and transfer those rights between agents [4]. All rights are typically transferred to the owner in traditional capitalist markets when private ownership of a good is acquired (e.g., buying a vinyl record, paperback book, or car).

Technology-mediated platform markets are replacing this private ownership model with fractional models of ownership, in domains ranging from clothing to digital media to real estate and transportation (e.g. Airbnb, Bird, Dropbox, Facebook, Instagram, Lyft, MS Office, Nook, Rent the Runway, Spotify, Twitter, Vrbo, YouTube). In fractional ownership models, people do not purchase the whole bundle of property rights to a good. With their money or attention or personal data, they selectively purchase a subset or fraction of those property rights. In many fractional models, people purchase access (i.e., a temporary usage right) to consume a good or service owned by others and shared with many [5]. Examples include streaming a digital song, purchasing an electronic book, or contracting a car and driver to drive one to the airport. Of course, access-based consumption is not entirely new. Various forms of cooperative and collective access-based consumption certainly existed before (e.g., library books, kibbutzim). The rise of technology-mediated platform markets is enabling its rapid diffusion throughout economies and societies, making common a variety of legal relationships between people and the objects they use, from borrowing to using, streaming, sharing, and renting [1<sup>••</sup>].

### Psychological ownership

Psychological ownership of an object is the inference or feeling that the object is MINE [6]. A sufficient condition is when the object is perceived as an extension of the self [7,8]. An object toward which many people feel ownership evokes *collective psychological ownership*, the feeling that a thing is OURS (e.g., an article or

neighborhood) [9]. As people can legally own intellectual and physical property, so can people feel psychological ownership for a variety of abstract, experiential, and material objects, from ideas and rights, from their labor to organizations, from their home to common household goods [2,3<sup>••</sup>,10<sup>•</sup>]. Psychological ownership is not dichotomous. It is experienced along a continuum. It varies across targets and persons [8]. Several psychological and organizational theories suggest that psychological ownership for objects arises from three antecedents identified by Sartre: perceived control, self-investment, and intimate knowledge [11].

#### *Perceived control*

Feeling one has control over an object's use instantiates psychological ownership for it from early childhood through adulthood [3<sup>••</sup>]. Physically controlling objects by touching and holding them instantiates psychological ownership [12,13]. Physical control can instantiate psychological ownership so quickly that people feel psychological ownership for an object they are currently using (which they do not own), but that feeling dissipates as soon as the object is returned to its legal owner [14]. Physical control is a particularly powerful ownership cue when one is the first to touch the object or has a high trait need for control [2,15<sup>•</sup>]. Conversely, feeling that one lacks physical control over objects, as in the case of digital goods relative to physical goods, inhibits the development of psychological ownership for those objects [15<sup>•</sup>]. Important for psychological ownership of artificial intelligence and future autonomous technologies, physically controlling a sentient thing is also a determinant of whether people believe it is owned (e.g., pets, robots) [16<sup>•</sup>]. More abstract kinds of control can also serve as cues for psychological ownership, including choosing an object [17] and determining when, how, where, and at what rate it is used or consumed [18].

#### *Self-investment*

Fueled by Locke's speculation that people own their own labor and feel they own what they produce [7], research has found that people feel greater psychological ownership for objects in which they invested resources. People exhibit greater psychological ownership for a good if they have owned it for longer, invested their labor in its creation, or paid money for it [3<sup>••</sup>,19,20,21<sup>••</sup>]. It is worth noting that control and self-investment are also grounds for legal ownership, as in the case of squatters' rights (e.g., if one continuously possesses property for 20 years in Massachusetts, one can gain legal ownership of it).

#### *Intimate knowledge*

A third proposed antecedent of psychological ownership is developing an intimate knowledge of objects through a 'living relationship' with them [6,22]. Most evidence for this route is anecdotal. A better definition and more empirical support for this speculation are needed.

Knowledge-driven ownership could be confounded with other factors associated with owning an object for a longer time, such as the considerable self-investment that lengthier ownership requires (e.g., maintenance and upkeep) [23], or meaningful memories and events that are more likely to become associated with objects that are owned longer (e.g., trips taken in a family car) [24,25]. Psychological ownership does increase with knowing a good longer, but it is established almost instantaneously, as shown in many laboratory demonstrations of the mere ownership and endowment effects.

A controversial stance taken here is that self-object congruity [26], shared meaningful associations between the object and the self, such as a hat and self both sharing a positive association with a baseball team (discussed in detail later), is more likely to be a unique antecedent of psychological ownership than intimate knowledge. Moreover, there is more empirical support for self-object congruity facilitating psychological ownership than for intimate knowledge facilitating psychological ownership [15<sup>•</sup>,26,27].

#### *Is psychological ownership a form of object attachment?*

Object attachment has been suggested as a process underlying psychological ownership for objects [28], with attachment to the object defined as the emotional impact of losing or gaining it [29–31]. Indeed, feeling that an object is MINE creates *mere ownership* and *endowment effects*. It enhances its psychological and economic value, respectively. People who legally own an object tend to like it more and think it is more valuable than people who do not [2]. While early infant-caregiver attachment processes provide a rhetorically useful analogy for feelings of psychological ownership and its value-enhancing effects, little evidence suggests that psychological ownership is scaffolded on or involves the intense neurobiological processes accompanying more prototypical attachment processes between human beings (e.g., parent and child) [32]. By contrast, much evidence suggests that explicit and implicit cognitive processes undergird psychological ownership and enhance object perception and value. Exploring whether more canonical forms of object attachment (e.g., attachment to 'transitional objects') relies on the cognitive processes involved in psychological ownership and whether attachment to objects is merely a substitute when human interaction is insufficient or unavailable [33], would be exciting avenues for future research.

#### **Legal versus psychological ownership**

Psychological ownership usually tracks legal ownership. People feel no more psychological ownership for goods they freely borrow than goods they evaluate [21<sup>••</sup>]. They feel more psychological ownership for goods they pay to rent than borrow for free, and people feel the highest levels of psychological ownership for goods that they own

[21\*\*]. However, psychological ownership also diverges from legal ownership in various common ways [34]. People are often wrong when asked which rights they have acquired when purchasing access-based goods. People overestimate the rights they have acquired when ‘buying’ digital books, for instance, when that exchange only gives them a non-transferable right to access and read those books through the provider’s platform [35\*]. People value their personal data and user-generated content, but the ownership they feel for their data and content is substantially influenced by how its sale or acquisition is framed [1\*\*].

Conflicts between legal and psychological ownership are not limited to novel digital, experiential, access-based goods. People feel psychological ownership for familiar kinds of objects for which they hold no property rights, like an idea or neighborhood [36,37] and for goods owned by others in which they invested their labor [38]. They may feel psychological ownership for objects to which they have no more rights than do others (e.g., ‘their’ seat in a classroom, ‘their’ side of the bed). Conversely, people feel little psychological ownership for familiar goods they legally own, like companies in which they own stock and goods they intend to sell in the future [39,40]. I propose that these conflicts between legal and psychological ownership reflect a dual-process corrective model, in which implicit and explicit judgments are used to determine psychological ownership — what is MINE.

**A dual process model of psychological ownership**

I interpret these conflicts between legal and psychological ownership as tentative evidence that a dual-process or dual-system model underlies judgments of psychological ownership (Figure 1). Antecedents of psychological ownership create implicit associations between self and

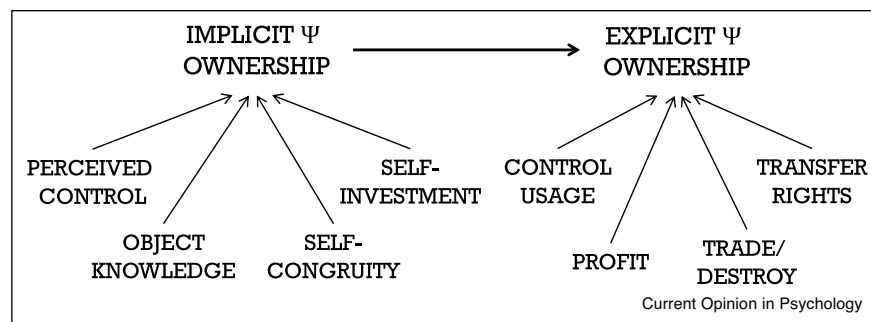
object, which give rise to an inference that the object is MINE (in System 1). This inference is then accepted, corrected, or rejected by controlled processes identified with rule-based explicit judgments (by System 2). As evidentiary support, I first review evidence of implicit and explicit processes involved in inferences of psychological ownership. I then review evidence suggesting that their relationship adheres to a corrective dual-process model, similar in structure to models used to explain attribute substitution, anchoring bias, and egocentric perspective taking [41].

**Implicit psychological ownership**

I propose when antecedents of psychological ownership are present, or an object is acquired, nodes in an associative memory network representing the self and the object are linked [42]. This self-object association undergirds the implicit impression or inference that the object is MINE. At least three related phenomena provide evidence of the role of such implicit associative processes in inferences of psychological ownership.

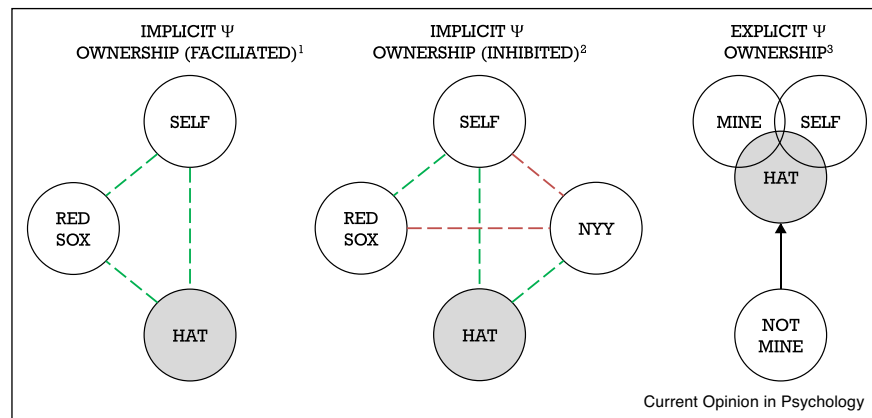
The first piece of evidence is the presence of a *self-object congruity* effect. If the self and owned object share an association, then the formation of a self-object association upon ownership is facilitated [26]. This effect follows a general property of associative models of memory, which posit that the spread of activation between nodes in associative memory (e.g. thoughts of one concept activating thoughts of another) is more likely when nodes have common properties or overlapping features [43]. Given a baseball hat, for instance, a Boston Red Sox fan should feel stronger psychological ownership if it is a ‘Red Sox’ hat than if it is a plain hat without a logo. The positive association between Boston Red Sox and self would facilitate a self-hat association (Figure 2, left). This facilitation effect is observed in cases where

Figure 1



A dual-process correction model of psychological ownership. Antecedents of psychological ownership including perceived control, self-investment, object knowledge, and self-congruity evoke an implicit judgment of psychological ownership (i.e., a self-object association). This can then be accepted, corrected, or rejected by an explicit judgment (i.e., categorizing the object as owned or not owned) when people have the motivation, ability, and opportunity to consider their legal ownership status (e.g., property rights including control usage, profit, trade or destroy, transfer rights).

Figure 2



<sup>1</sup>Implicit psychological ownership facilitated by self-object congruity. Here the object (a 'Red Sox' hat) is associated both with the self and a congruent associate (e.g. Boston Red Sox). <sup>2</sup>Implicit psychological ownership inhibited by self-object incongruity. Here the object (a New York Yankees hat) is associated both with the self and an incongruent associate (e.g. New York Yankees). <sup>3</sup>Explicit psychological ownership. Here the object (a hat) is consciously recategorized so it is included in the categories, 'owned' and 'self.' Solid lines indicate conscious inferences; dashed lines indicate nonconscious associations (green positive, red negative).

psychological ownership is stronger for objects congruent with the owner's social identity (e.g. a college mug versus an unbranded mug) [15<sup>\*</sup>,27]. Conversely, when there is *self-object incongruity*, when the self and object are associated with stimuli in conflict, then the formation of a self-object association upon ownership is inhibited [26]. The same Boston Red Sox fan would feel weaker psychological ownership for a 'New York Yankees' baseball hat than for a plain baseball hat. The negative association between New York Yankees and both Self and Boston Red Sox would inhibit a self-hat association (Figure 2, center).

The second line of evidence stems from the self-referential memory effect people exhibit for owned objects. As expected by semantic facilitation effects in associative memory, people exhibit better memory for stimuli they own (or imagine owning), presumably because those stimuli become associated with the self. If people are shown a series of objects and asked to imagine owning some of them, for instance, they are more likely to accurately recall having seen the objects they imagined owning than the objects they imagined belonging to another person [44]. When thinking about owned objects in these tasks, participants also exhibit stronger activation in the MPFC, a brain area reliably associated with thinking about their own relative to others' states, traits, and characteristics [45].

The third line of evidence that self-object associations underly psychological ownership stems from the extension of self-associations to objects that one owns and the extension of object-associations to the self [8,14]. The most robust example of such extensions from self to

object is the mere ownership effect. People generally think positively of themselves, and the transfer of this positive association with the self to owned goods leads them to evaluate a good more positively if they own it than if they do not own it [28]. Its variance across persons and cultures provides further evidence for this associative explanation of the mere ownership effect. People with more positive implicit self-evaluations tend to show stronger mere ownership effects [46], and mere ownership effects are less prevalent in cultures in which self-enhancement is less prevalent (e.g., East Asian) [47]. Extensions from objects to self are observed in self-assessments. People are more likely to evaluate themselves as possessing traits consistent with objects, for example, if they choose those objects or receive the objects through inadvertent ownership [48].

### Explicit psychological ownership

Explicit psychological ownership entails consciously categorizing an object as MINE [6], a category present in early childhood [3<sup>\*\*</sup>]. Categorizing an object as MINE does not require legal ownership or physical possession of the object. Expecting to own the object and explicitly imagining that one owns it are sufficient. People who expect to own a good in the future exhibit signs of psychological ownership for it, and people who own a good they expect to sell do not [39,49]. In cognitive psychological experiments, psychological ownership is often instantiated by having people explicitly imagine placing an object in a basket that is theirs (e.g. 'Put the ball in your basket') [44,45].

This categorization is not binary (Figure 2, right). People do not feel equal degrees of psychological ownership for

all objects they own. You may feel more psychological ownership, for instance, for your clothes and furniture than your receipts and expired medicines. Categorizing all owned objects as mine indicates clinical levels of hoarding [50]. Psychological ownership appears to be stronger if the owned object is also included in the category of the self (Figure 2, right), if it is both mine and *me*, which is more likely when ownership is consciously considered [8]. Extreme examples of such self-categorization include ‘special possessions’ that symbolize important facets of the self or personally meaningful events (e.g., a diploma or wedding ring) [7].

The categorization of an object as mine is not limited to self-reports. It changes the framing, perception, evaluation, and consumption of the object. Owning an object changes the reference point from which it is viewed, from framing it as a thing to be gained to a thing to lose [2], which is amplified by having explicitly chosen it [17]. Categorizing an object as mine directs attention toward different (more positive) features of the object. This attentional shift is observed when people are asked to choose between the object and money or another good (‘Do you want to keep *your* mug or receive \$5/*that* chocolate bar?’). Owners are more likely to attend to positive features of the owned object and negative features of the alternative than non-owners, which leads them to value it more in incentive-compatible economic transactions and makes them less likely to trade the object [2]. People consume more goods and services offered by a brand if they feel greater psychological ownership for that brand (e.g., music streaming, car rental) [51\*].

### Conflicts and correction

Considerable evidence suggests that these implicit and explicit routes for inferring psychological ownership are structured in a corrective dual-process model. More research is needed to test the model predictions directly, but it is supported by cases where implicit and explicit judgments stand in conflict, such as when people own self-incongruent objects with predominantly negative features (i.e. ‘bads’). In an experiment by Ye and Gawronski [26], participants were shown two pictures of snakes and given one by random assignment or by choice. Participants randomly assigned to receive one of the snake pictures did not exhibit a preference for their picture on a subsequent IAT, but participants who chose one of the two snake pictures exhibited an implicit preference for their picture (i.e., the value-enhancing mere ownership effect). In this and other studies, people given a bad did not exhibit the typical value-enhancing mere ownership effect for the bad unless they explicitly chose it.

Other cases consistent with a correction model highlight how explicit consideration of legal ownership can

modulate psychological ownership for an object when its antecedents are held constant. Whether people develop psychological ownership and an endowment effect for an object appears to be contingent not only on their present legal ownership status but also on whether they expect to legally own it in the future [15\*]. Participants given an object with a 90% chance of keeping it at the end of an experimental session were more likely to exhibit an endowment effect, for instance, for it than participants with a 10% chance of keeping the same object [49]. Professional traders who plan to sell an object in their possession are also less likely to exhibit an endowment effect for it than amateur hobbyists who do not assume they would sell it [39].

The model’s corrective nature—the propensity for explicit consideration of ownership status to overrule implicit inferences of ownership—is the key point of differentiation from other models of psychological ownership. Shu and Peck [31] propose, for example, that psychological ownership is accrued through two paths: (i) changes in affective reactions to an object and (ii) changes in the reference point used to evaluate it. These paths act as independent inputs, combining to determine an overall level of psychological ownership for an object. The predictions of their consolidative model and the proposed correction model of psychological ownership are very similar in cases where legal ownership and psychological ownership are traditionally aligned, as when people use goods that they own (e.g., a privately owned car). However, the correction model of psychological ownership makes different predictions for the psychological ownership that people will feel under two increasingly common conditions: when people use goods that they do not legally own, and when people legally own goods that they do not use.

The correction model of psychological ownership predicts that people will feel ownership of objects they use but do not legally own when (i) antecedents of psychological ownership are present, but (ii) users do not have the motivation, ability, or opportunity to consider their ownership status explicitly. In other words, if people are never motivated to consider whether they explicitly own a good that they are using, they may feel psychological ownership for goods that they do not legally own but for which they feel they have control, have invested time or other resources, or have used for a long duration. Examples of this include cloud-based email, data storage, social media accounts, and user-generated content (e.g., photographs, posts, playlists, reviews, video game characters), digital goods downloaded to personal devices (e.g., books, movies), their office at work, an idea, neighborhoods, homes with underwater mortgages, or their side of the bed. In contexts where their (non) ownership status is not salient or ambiguous, people are likely to physically and emotionally invest themselves in such objects to degrees



that appear economically irrational. They may also experience territoriality and strong negative emotions when they lose access to those objects, or others use or modify the objects without their consent or permission [52,53]. Even minor infringements can evoke strong reactions. Apple faced a backlash in 2014 when it added a U2 album to users by adding it to their iTunes library without their consent. What was intended as a gift was perceived as a threat to psychological ownership (a reminder that Apple has rights to user libraries) [18]. If you would like to experience this firsthand tonight, casually ask your partner to switch sides of the bed.

The correction model predicts that people will not feel psychological ownership for objects that they legally own but do not use when (i) antecedents of psychological ownership are absent, and (ii) they do not have the motivation, ability, or opportunity to consider their ownership status explicitly. People may thus be willing to trade or give away rights for objects that lack traditional antecedents of psychological ownership for much less than they are worth (e.g., clean air, personal data, public land) unless the context prompts them to consider their ownership status explicitly [54,55]. This prediction suggests that policymakers and the law may need to develop consumer protections for these classes of objects (e.g., the General Data Protection Regulation), as firms or other actors could easily exploit such discordant cases of legal and psychological ownership.

### Future directions

Technology-driven consumption changes are making common a variety of relationships between people and objects that make what is MINE and NOT MINE a challenging distinction [1\*\*]. These relationships provide exciting new angles for exploring the antecedents, structure, and effects of psychological ownership, a construct that has endured across cultures throughout recorded history [3\*\*]. Psychological and behavioral science research into psychological ownership can also make substantive contributions to consumer protection, law, and regulation in these areas by further illuminating when it conflicts with legal ownership in ways allowing consumers to be exploited.

I have proposed a new corrective model of psychological ownership here and call for future research to test its predictions across various relationships between people and objects. Of course, this model assumes that the structure of the construct is static. More work is needed to understand if, as relationships between people and objects that diverge from private ownership become more common, the cues and processes used to infer psychological ownership will change. Perhaps, changes in markets and mind will align the antecedents and processes used to determine psychological ownership more closely with the bundle of rights encompassing legal ownership.

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### References and recommended reading

Papers of particular interest, published within the period of review, have been highlighted as:

- of special interest
- of outstanding interest

1. Morewedge CK, Monga A, Palmatier R, Shu SB, Small DA: **•• Evolution of consumption: a psychological ownership framework.** *J Mark* 2020 <http://dx.doi.org/10.1177/0022242920957007>. in press.
- This paper identifies how technology-driven consumption changes, including the rise of access-based consumption and the exchange of material for experiential goods, is changing the psychological ownership people feel for the goods and services they consume.
2. Morewedge CK, Giblin CE: **Explanations of the endowment effect: an integrative review.** *Trends Cogn Sci* 2015, **19**:339-348.
3. Nancekivell SE, Friedman O, Gelman SA: **Ownership matters: •• people possess a nave theory of ownership.** *Trends Cogn Sci* 2019, **23**:102-113.
- Drawing on evidence that even very young children have an intuitive concept of ownership, the authors argue a nave theory of ownership emerges in early childhood.
4. Honoré AM: **Ownership.** *Oxf Essays Jurisprud* 1961, **107**:112-124.
5. Eckhardt GM, Houston MB, Jiang B, Lambertson C, Rindfleisch A, Zervas G: **Marketing in the sharing economy.** *J Mark* 2019, **83**:5-27.
6. Pierce JL, Kostova T, Dirks KT: **Toward a theory of psychological ownership in organizations.** *Acad Manag Rev* 2001, **26**:298-310.
7. Belk RW: **Possessions and the extended self.** *J Consum Res* 1988, **15**:139-168.
8. Weiss L, Johar GV: **Egocentric categorization and product judgment: seeing your traits in what you own (and their opposite in what you don't).** *J Consum Res* 2013, **40**:185-201.
9. Pierce JL, Jussila I: **Collective psychological ownership within the work and organizational context: construct introduction and elaboration.** *J Organ Behav* 2010, **31**:810-834.
10. Ritov I, Schurr A: **Transaction frame determines preferences: • valuation of labor by employee and contractor.** *Psychol Sci* 2020, **31**:634-643 <http://dx.doi.org/10.1177/0956797620916521>.
- The authors present empirical evidence that the economic value of work is perceived to be lower in sharing economy than traditional labor markets because ownership is framed differently (i.e., employers selling a job contract vs. workers selling their labor).
11. Sartre JP: *Being and Nothingness: A Phenomenological Essay on Ontology.* Philosophical Library; 1943.
12. Reb J, Connolly T: **Possession, feelings of ownership, and the endowment effect.** *Judgm Decis Making* 2007, **2**:107.
13. Peck J, Shu SB: **The effect of mere touch on perceived ownership.** *J Consum Res* 2009, **36**:434-447.
14. Weiss L, Johar GV: **Products as self-evaluation standards: when owned and unowned products have opposite effects on self-judgment.** *J Consum Res* 2016, **42**:915-930.

15. Atasoy O, Morewedge CK: **Digital goods are valued less than physical goods.** *J Consum Res* 2018, **44**:1343-1357.  
The authors find (i) people value digital goods less than physical goods because people feel less psychological ownership for digital goods; (ii) psychological ownership and value is lower for physical goods that are rented rather than owned by users.
16. Espinosa J, Starmans C: **Control it and it is yours: childrens reasoning about the ownership of living things.** *Cognition* 2020, **202**:104319 <http://dx.doi.org/10.1016/j.cognition.2020.104319>.  
The authors find if a living thing is perceived to be autonomous (e.g. direct its action, pursue its own goals, make its own decisions), childrens believe it cannot be owned. The authors find if a living thing is perceived to be autonomous (e.g., direct its action, pursue its own goals, make its own decisions), childrens believe it cannot be owned.
17. Huang Y, Wang L, Shi J: **When do objects become more attractive? The individual and interactive effects of choice and ownership on object evaluation.** *Pers Soc Psychol Bull* 2009, **35**:713-722.
18. Baxter WL, Aurisicchio M: **Ownership by design.** In *Psychological Ownership and Consumer Behavior*. Edited by Peck J, Shu SB. Springer; 2018:119-134.
19. Strahilevitz MA, Loewenstein G: **The effect of ownership history on the valuation of objects.** *J Consum Res* 1998, **25**:276-289.
20. Norton MI, Mochon D, Ariely D: **The IKEA effect: when labor leads to love.** *J Consum Psychol* 2012, **22**:453-460.
21. Bagga CK, Bendle N, Cotte J: **Object valuation and non-ownership possession: how renting and borrowing impact willingness-to-pay.** *J Acad Mark Sci* 2019, **47**:97-117.  
The authors contrast psychological ownership and endowment effects for real and hypothetical goods that are merely evaluated, borrowed, rented, or owned. They find greater economic investment increases feelings of psychological ownership and the perceived value of goods (owned & rented & borrowed = evaluated).
22. James W: *The Principles of Psychology*. Henry Holt and Company; 1890.
23. Hodder I: *Entangled: An Archaeology of the Relationships Between Humans and Things*. John Wiley & Sons; 2012.
24. Grayson K, Shulman D: **Indexicality and the verification function of irreplaceable possessions: a semiotic analysis.** *J Consum Res* 2000, **27**:17-30.
25. Wallendorf M, Arnould EJ: **"My favorite things": a cross-cultural inquiry into object attachment, possessiveness, and social linkage.** *J Consum Res* 1988, **14**:531-547.
26. Ye Y, Gawronski B: **When possessions become part of the self: ownership and implicit self-object linking.** *J Exp Soc Psychol* 2016, **64**:72-87.
27. Dommer SL, Swaminathan V: **Explaining the endowment effect through ownership: the role of identity, gender, and self-threat.** *J Consum Res* 2013, **39**:1034-1050.
28. Beggan JK: **On the social nature of nonsocial perception: the mere ownership effect.** *J Pers Soc Psychol* 1992, **62**:229-237.
29. Ariely D, Huber J, Wertenbroch K: **When do losses loom larger than gains?** *J Mark Res* 2005, **42**:134-138.
30. Carmon Z, Wertenbroch K, Zeelenberg M: **Option attachment: when deliberating makes choosing feel like losing.** *J Consum Res* 2003, **30**:15-29.
31. Shu SB, Peck J: **Psychological ownership and affective reaction: emotional attachment process variables and the endowment effect.** *J Consum Psychol* 2011, **21**:439-452.
32. Feldman R: **The neurobiology of human attachments.** *Trends Cogn Sci* 2017, **21**:80-99.
33. Fortuna K, Baor L, Israel S, Abadi A, Knafo A: **Attachment to inanimate objects and early childcare: a twin study.** *Front Psychol* 2014, **5**:1-7.
34. Etzioni A: **The socio-economics of property.** *J Soc Behav Pers* 1991, **6**:465-468.
35. Helm SV, Ligon V, Stovall T, Van Riper S: **Consumer interpretations of digital ownership in the book market.** *Electron Mark* 2018, **28**:177-189.  
The authors find that people simultaneously feel psychological ownership for digital books they purchased, while recognizing that they have only purchased usage rights.
36. Shaw A, Li V, Olson KR: **Children apply principles of physical ownership to ideas.** *Cogn Sci* 2012, **36**:1383-1403.
37. Verkuyten M, Martinovic B: **Collective psychological ownership and intergroup relations.** *Perspect Psychol Sci* 2017, **12**:1021-1039.
38. Kanngiesser P, Gjersoe N, Hood BM: **The effect of creative labor on property-ownership transfer by preschool children and adults.** *Psychol Sci* 2010, **21**:1236-1241.
39. List JA: **Does market experience eliminate market anomalies?** *Q J Econ* 2003, **118**:41-71.
40. Pierce JL, Rubenfeld SA, Morgan S: **Employee ownership: a conceptual model of process and effects.** *Acad Manag Rev* 1991, **16**:121-144.
41. Morewedge CK, Kahneman D: **Associative processes in intuitive judgment.** *Trends Cogn Sci* 2010, **14**:435-440.
42. Morewedge CK, Shu LL, Gilbert DT, Wilson TD: **Bad riddance or good rubbish? Ownership and not loss aversion causes the endowment effect.** *J Exp Soc Psychol* 2009, **45**:947-951.
43. Hutchison KA: **Is semantic priming due to association strength or feature overlap? A microanalytic review.** *Psychon Bull Rev* 2003, **10**:785-813.
44. Sparks S, Cunningham SJ, Kritikos A: **Culture moderates implicit ownership-induced self-bias in memory.** *Cognition* 2016, **153**:89-98.
45. Kim K, Johnson MK: **Extended self: medial prefrontal activity during transient association of self and objects.** *Soc Cogn Affect Neurosci* 2012, **7**:199-207.
46. Gawronski B, Bodenhausen GV, Becker AP: **I like it, because I like myself: associative self-anchoring and post-decisional change of implicit evaluations.** *J Exp Soc Psychol* 2007, **43**:221-232.
47. Maddux WW, Yang H, Falk C, Adam H, Adair W, Endo Y, Carmon Z, Heine SJ: **For whom is parting with possessions more painful? Cultural differences in the endowment effect.** *Psychol Sci* 2010, **21**:1910-1917.
48. Park JK, John DR: **Got to get you into my life: do brand personalities rub off on consumers?** *J Consum Res* 2010, **37**:655-669.
49. Ericson KM, Fuster A: **Expectations as endowments: evidence on reference-dependent preferences from exchange and valuation experiments.** *Q J Econ* 2011, **126**:1879-1907.
50. Frost RO, Hartl TL: **A cognitive-behavioral model of compulsive hoarding.** *Behav Res Ther* 1996, **34**:341-350.
51. Fritze MP, Marchand A, Eisingerich AB, Benkenstein M: **Access-based services as substitutes for material possessions: the role of psychological ownership.** *J Serv Res* 2020, **23**:368-385 <http://dx.doi.org/10.1177/1094670520907691>.  
The authors find that psychological ownership for brands can act as a substitute for psychological ownership for physical goods in access-based consumption contexts, and it increases demand for their goods and services. The authors find that psychological ownership for brands can act as a substitute for psychological ownership for physical goods in access-based consumption contexts, and it increases demand for their goods and services.
52. Goulding BW, Friedman O: **The development of territory-based inferences of ownership.** *Cognition* 2018, **177**:142-149.
53. Griffiths MA, Gilly MC: **Dibs! Customer territorial behaviors.** *J Serv Res* 2012, **15**:131-149.
54. Acquisti A, John LK, Loewenstein G: **What is privacy worth?** *J Legal Stud* 2013, **42**:249-274.

55. Peck J, Kirk CP, Luangrath AW, Shu SB: **Caring for the commons: using psychological ownership to enhance stewardship behavior for public goods.** *J Mark* 2020 <http://dx.doi.org/10.1177/0022242920952084>.

The authors find that feelings of psychological ownership for a public good increase personal responsibility felt for it, thereby increasing

stewardship of the public good (e.g., investing money or effort in its preservation). The authors find that feelings of psychological ownership for a public good increase personal responsibility felt for it, thereby increasing stewardship of the public good (e.g. investing money or effort in its preservation).