



Object valuation and non-ownership possession: how renting and borrowing impact willingness-to-pay

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Abstract

Prior research on object valuation ignores the effect of non-ownership physical possession types such as *renting* and *borrowing*. Evidence from four experiments demonstrates that the valuation (i.e., willingness-to-pay) for rented objects is greater than the valuation for non-possessed or borrowed objects. Borrowed objects are not valued any differently than non-possessed objects. Psychological ownership mediates the relationship between valuation and non-ownership physical possession. Additionally, psychological ownership varies for different possession types (ownership, renting, and borrowing) as its contributing routes (control, self-investment, and knowledge) operate differently for each possession type. As further evidence of the psychological ownership based theoretical account, the research shows that rented objects are not valued higher than non-possessed objects if the control or self-investment routes of psychological ownership are suppressed. The moderating influence of product hedonism–utilitarianism and consumers’ tightwad–spendthrift tendency on the valuation of rented and borrowed objects is also examined.

Keywords Object valuation · Renting · Borrowing · Psychological ownership · Endowment effect · Willingness-to-pay · Experiments

Legal ownership and physical possession are typically confounded in prior endowment effect studies (Morewedge et al. 2009; Reb and Connolly 2007). When teased apart, physical possession seems to exert a positive effect on object valuation regardless of whether the object is legally owned (Reb and Connolly 2007). If physical possession affects valuation independent of legal ownership, it raises questions that have crucial implications for

marketing: How do the non-ownership physical possession types of *renting* and *borrowing* impact object valuation? Is their impact on object valuation the same or different, and why?

Understanding whether object valuation (i.e., willingness-to-pay or WTP) is affected by renting and borrowing is relevant for marketers. Renting and borrowing correspond to two key forms of market exchange: a firm may rent its products or allow consumers to use them on a trial basis. Product trials, akin to marketplace borrowing, are common in many categories. For example, American Express and Netflix waive their initial fee. Similarly, Chevy instituted a 60-day free trial scheme (Sanburn 2012). Likewise, categories in which renting happens are numerous, ranging from bicycles to corporate jets, from a \$500 tuxedo to a \$50,000 diamond necklace. Therefore, understanding the relationship between non-ownership physical possession and object valuation has wide-ranging marketing implications for commercial transactions such as rent-to-own contracts, product trials, lease-renewal terms, and product return policies. Put simply, managerially, we address whether renting products or loaning them out for trial increases consumers’ willingness-to-pay.

Most prior research on object valuation focuses on owned objects. We address this omission by examining when and why object valuation is impacted by non-ownership physical

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possession. Our findings show that the valuation of rented objects is higher than the valuation of non-possessed objects and borrowed objects. Further, borrowed objects are not valued any differently than non-possessed objects. As is the case with ownership, the relationship between object valuation and renting and borrowing is mediated by psychological ownership. The level of psychological ownership for different possession types varies, as the three routes of psychological ownership (control, self-investment, and knowledge) operate differently for each possession type. Finally, the impact of two substantive moderators is examined. First, we find that tightwad consumers have a greater willingness-to-pay than spendthrifts for rented objects, but not for borrowed objects. Second, the nature of the product (hedonic or utilitarian) does not appear to affect the willingness-to-pay for rented and borrowed objects.

Our paper is organized as follows. We first present a taxonomy of the different possession types in our research and discuss how they differ from past endowment work. After discussing possible mechanism explanations for higher object valuation, we present a psychological ownership account predicting how and why renting and borrowing impact valuation. Next, we discuss why the product's nature (hedonic vs. utilitarian) and consumers' tightwad-spendthrift tendency might moderate the proposed effects. Four experimental studies test the predicted hypotheses. The empirical section is followed by a discussion of the implications for theory and managerial action.

Conceptual framework

Taxonomy of different physical possession types

We refer to possession as the *physical* possession of an object (physically having or controlling the *use* of the object), regardless of the object's legal ownership status. *Renting* is defined as a transaction in which the renter makes a payment to the owner of the object or property for its possession and use (Oxford 2017a). In *borrowing*, the borrower takes and uses an object (belonging to someone else) and incurs no cost for using it¹ (Oxford 2017b). We also define the state of *non-possession* as the lack of an object's physical possession for use. The non-possession state may involve brief physical contact with the object to evaluate it, such as a consumer may experience when shopping in-store. However, it does *not* involve any prolonged use of the object. To illustrate, when a coffee mug or a pen is touched or evaluated without use or payment, we label that as non-possession. In contrast, if the coffee mug or pen is used without payment for its intended purpose (drinking a beverage or writing), we treat that as

borrowing. Most prior literature in which non-owned objects are valued does not involve prolonged *usage* of the objects for their intended purpose (Kahneman et al. 1990; Reb and Connolly 2007; Strahilevitz and Loewenstein 1998). Hence, though physical contact may have been involved while valuing non-owned objects in prior endowment work, such possession does not qualify as borrowing, as no prolonged usage was involved.

While the value measure for owned objects is how much money one would accept for selling that object, called willingness-to-accept (WTA) in the literature, the appropriate value measure in the renting and borrowing states (just as the non-possessed state) is willingness-to-pay (or WTP). Rented and borrowed objects are not owned. They cannot be sold, only purchased. Examining WTP is especially interesting for marketers, who are typically interested in the initial sales price, i.e., a consumer's willingness-to-pay, rather than a consumer's willingness-to-accept for the products after purchase, i.e., trades of secondhand goods.

Ownership and valuation

Although the endowment effect is typically explained as a manifestation of loss aversion (Kahneman et al. 1990; Thaler 1980), multiple *mechanism* explanations have been offered (Ariely et al. 2005; Novemsky and Kahneman 2005; Sen and Johnson 1997). Carmon and Ariely (2000) suggested that the object valuation difference (the seller-buyer value gap) is because buyers and sellers construct value differently. Other compelling explanations include empathy gaps between buyers and sellers (Kurt and Inman 2012; Van Boven et al. 2000), differential focus on the positive and negative features of an object (Nayakankuppam and Mishra 2005), evolutionary arguments (Huck et al. 2005), a propensity to stay with the status quo (Gal 2006), and a reluctance to trade on unfavorable terms (Weaver and Frederick 2012).

Another explanation for the endowment effect that has found widespread acceptance is the ownership account of object valuation. The ownership account has its roots in the argument that possessions are a reflection of the owner's identity (Belk 1988; Beggan 1992; McCracken 1986). Extending the owner–possession link into the endowment literature, Morewedge et al. (2009) argued that loss aversion and ownership have been confounded in prior endowment studies, as sellers are also typically owners. They found that when the seller and owner roles were separated, only ownership created higher object valuation. However, ownership is a complex construct that can include legal ownership as well as psychological ownership.

Psychological ownership, distinct from legal ownership, is defined as the feelings that people develop toward an object or even toward intangible things such as songs (Harmeling et al. 2017; Pierce et al. 2003). Legal ownership is a societal

¹ We use the term borrowing in a non-financial sense. In commercial financial terms, borrowing money typically involves an interest cost.

construct, and hence legal ownership rights are specified and protected by the legal system (Pierce et al. 2003). In contrast, psychological ownership resides within an individual with feelings of ownership and can exist without legal ownership (Etzioni 1991; Furby 1980). For example, consider a property in a distant location that someone inherits. Although legally the person owns the property, she may not have ownership feelings for it. In contrast, people may develop psychological ownership without legal ownership. For example, an individual may develop feelings of ownership for a property that she is renting and living in, although someone else legally owns it. Sports fans may feel psychological ownership for a team and believe they should be consulted about business decisions (such as trades) even though they clearly have no legal ownership.

Researchers have examined whether it is legal or psychological ownership that causes higher valuation. Reb and Connolly (2007) found that legal ownership, devoid of physical possession, does not result in higher object valuation. In contrast, physical possession, devoid of legal ownership, causes higher valuation through psychological ownership. Since then, psychological ownership has been found to be a robust predictor of higher object valuation in many different contexts (Brasel and Gips 2014; Dommer and Swaminathan 2012; Fuchs et al. 2010; Morewedge and Glibin 2015; Peck and Shu 2009; Shu and Peck 2011). Please see Table 1 for a detailed literature review on the mechanisms that predict higher object valuation for owned objects (i.e., the endowment effect), and how the constructs of legal and psychological ownership are associated with object valuation.

We propose that the psychological ownership account also explains why the valuation of rented and borrowed objects differs from the valuation of non-possessed and owned objects.

Psychological ownership and different possession types

The psychological ownership literature suggests that there are three additive routes by which psychological ownership develops (Belk 1988; Pierce et al. 2003). These routes are control, self-investment, and knowledge.

Control refers to the power to direct who uses an object, when it is used, and how it is used. Such control exercised over a material object can result in the development of feelings toward it (Furby 1978; McClelland 1951). As an example, control of an owned car may trigger the following feeling, “I can use it the way I want ... this is my car.”

The second route of psychological ownership is *self-investment*. People may feel they own something that they create, shape, or produce. Buying an object is also considered a form of creation, as the money used is an outcome of one’s efforts and labor (Sartre 1943/1969). Buying can involve an investment of time, energy, emotional, and other psychological resources. To

illustrate how self-investment leads to higher psychological ownership, consider an apartment purchase. This may trigger the feeling, “I’ve *invested* all my savings ... this is my apartment.”

The third route to psychological ownership is a high level of *knowledge* (Belk 1988; James 1890). Sometimes, the feelings of ownership developed toward an object are a function of living close to, knowing an object intimately, and experiencing an object. For example, a high level of knowledge about how a SLR camera works may trigger the feeling, “I *know* how this digital SLR system works ... this is my camera.”

The knowledge route in the psychological ownership literature assumes positive valence (Belk 1988; Pierce et al. 2003). Greater knowledge of an object that has a negative valence (e.g., knowing that the car you own breaks down frequently) is not expected to increase feelings of ownership. Therefore, consistent with prior literature, we investigate situations in which greater knowledge is expected to lead to positive experience and treat the knowledge route as having positive valence.

The three routes of psychological ownership are distinct, additive, and can operate independently (Pierce et al. 2003). If the number of routes by which psychological ownership is developed is multiple, the psychological ownership toward a target object will be higher. We propose that the three routes of psychological ownership operate differently for the three possession types of ownership, renting, and borrowing. Figure 1 provides an illustrative summary of our proposed object valuation framework.

Valuation for owned, rented, borrowed, and non-possessed objects

Ownership As expected, the highest psychological ownership will be associated with the ownership possession type. Here, strong feelings of psychological ownership develop through all routes. Absolute title rights lead to complete control over all aspects of the owned target (Epstein 1993). In addition, a high level of self-investment is involved in purchase (Sartre 1943/1969). Physical possession results in active association with an object leading to high knowledge about it (Beggan and Brown 1994; Pierce et al. 2003). Thus the psychological ownership and valuation are expected to be highest for owned objects. Admittedly, this discussion of ownership possession type is hardly novel. It is just an elaborate explanation of the psychological ownership account of the endowment effect [willingness-to-accept (WTA) – willingness-to-pay (WTP)] gap and is known theory (Kahneman et al. 1990). What is intriguing and unknown is whether renting and borrowing lead to higher valuation relative to a state when the object is not possessed.

Renting We predict that the psychological ownership and valuation for a rented object will be moderate. This means that

Table 1 Literature review

Different mechanism explanations of the endowment effect (higher object valuation for owned objects)

Kahneman et al. 1990	Classic paper in the field that attributed WTA-WTP gap to loss aversion.
Carmon and Ariely 2000	Buyers and sellers differ in how they assess value. Buyers focus on the expenditure, sellers focus on benefits of possessing the item.
Van Boven et al. 2000	Owners and buyers assign different values to the object owing to egocentric empathy gaps.
Dhar and Wertenbroch 2000	Endowment effect value gap can be attributed to a differential focus of buyers and sellers on the utilitarian and hedonic aspects of the traded good.
Huck et al. 2005	Evolution favors individuals whose preferences embody an endowment effect (as it improves one's bargaining position).
Nayakankuppam and Mishra 2005	Sellers (owners) relative to buyers focus more on positive features of the object and less on negative features.
Zhang and Fishbach 2005	Anticipated negative reactions to losses deter people from trading an endowed object.
Gal 2006	Propensity toward the status quo explains the endowment effect gap.
Weaver and Frederick 2012	The endowment effect is caused by the reluctance of people to trade on unfavorable terms.
Kurt and Inman 2012	People fail to predict how others in the same role value an object due to self-other differences in valuation arising from intra-role empathy gaps.
Chatterjee et al. 2013	Selling is perceived as an implicit self-threat, and sellers respond to this self-threat by enhancing the value of the self-associated object.
Legal ownership and psychological ownership account of object valuation	
McCracken 1986	Using possession rituals, individuals move cultural meaning out of their goods and into their lives.
Belk 1988	Our possessions are a contributor to and reflection of our identities.
Etzioni 1991	Property exists at two levels, a real level (as a target on which legal rights are invested), and at a symbolic level (as an attribute of the mind).
Beggan 1992	Ownership of an object causes the owner to treat the object as a social entity because ownership creates a psychological association between the object and the owner.
Pierce et al. 2003	People develop psychological ownership through controlling the target, coming to know the target intimately, and investing the self in the target.
Reb and Connolly 2007	There is a significant effect of physical possession, but not of (legal) factual ownership, on the monetary valuation of the object.
Morewedge et al. 2009	Legal ownership produces an endowment effect but loss aversion does not.
Peck and Shu 2009	Object valuation is influenced jointly by perceived ownership and the valence of the touch experience.
Shu and Peck 2011	The constructs of psychological ownership and affective reaction explain many of the endowment effect findings.
Dommer and Swaminathan 2012	Examine moderators that affect the possession-self link and consequently the endowment effect: self-threat, identity associations, and gender. Conclude that ownership explains the endowment effect better.
Brasel and Gips 2014	Touchscreen interfaces can increase perceived psychological ownership, and this magnifies the endowment effect.
Morewedge and Glibin 2015	Endowment effect cannot be solely attributed to a loss aversion account. Different elicitation methods and psychological ownership lead people to consider different information when valuing a good.
Wang et al. 2015	The valuation of an object is highest after experiencing a final reversal in ownership (from losses to a final gain or from gains to a final loss), followed by alternating ownership, and followed by stable ownership or no-ownership.

rented objects will be valued significantly more than non-possessed and borrowed objects, but significantly less than owned objects. Psychological ownership developed through the control route is moderate as renters (relative to owners) have an incomplete control over the bundle of property rights (Slangen and Polman 2008). To illustrate, although a tenant of a rented apartment has day-to-day control over the apartment's use, she still has to follow her rental (apartment) company's policies. The control that a renter has is higher than a

borrower's (someone borrowing the apartment at no cost), but lower than an owner's. Similarly, self-investment (monetary, emotional, or psychological) for a rented object is also moderate. It is lower than for an owned object (Dasgupta et al. 2007), but higher than for a borrowed object that involves negligible investment. Physical possession results in the knowledge route operating at a high level for a rented object through usage-based association and involvement between the renter and the rented object (Beggan and Brown 1994;

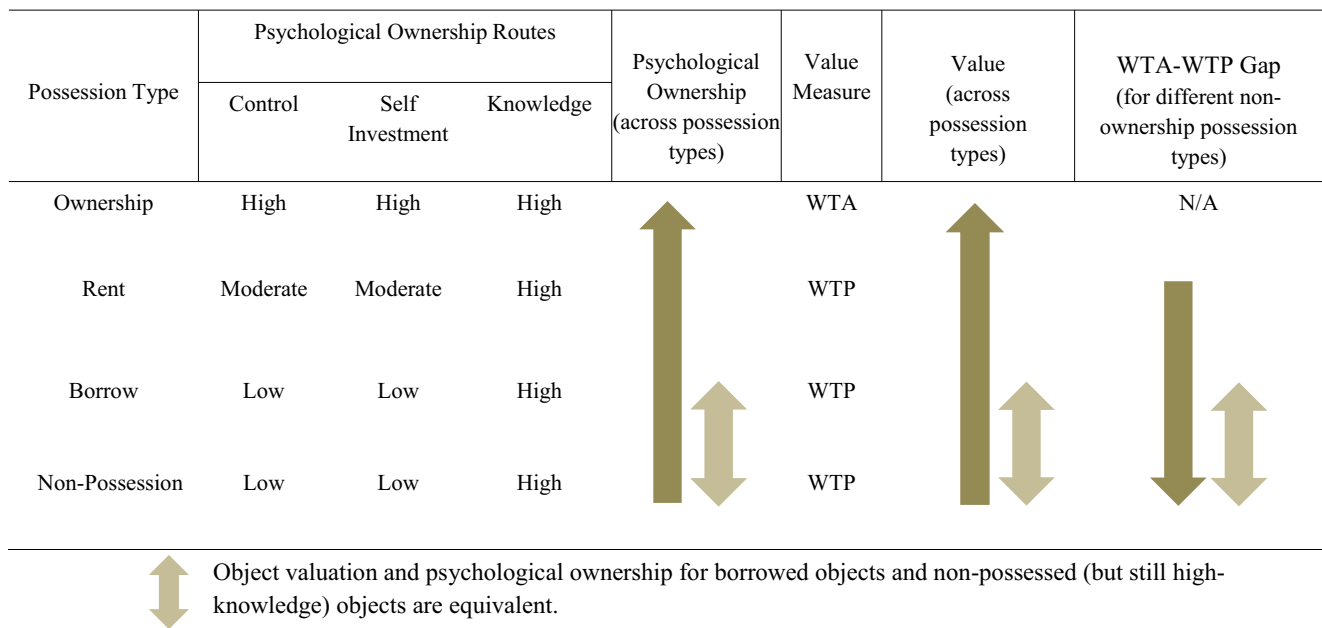


Fig. 1 Object valuation conceptual framework

Pierce et al. 2003). Considering that one route (knowledge) contributes highly, and two routes (control and self-investment) contribute moderately, we predict that the psychological ownership for a rented object will be moderate, resulting in moderate valuation for a rented object.

Borrowing Psychological ownership for the borrowing possession type is expected to be lower. Psychological ownership developed through the control route is expected to be low, as an individual has no title rights over the borrowed object. The terms of use of the borrowed object are highly dependent on the discretion of the legal owner (Demsetz 1974). Similarly, feelings of ownership developed through self-investment are low, as little is invested when borrowing. Further, borrowed objects are likely treated in a profane manner (Jenkins et al. 2014). The knowledge route, which is a function of physical possession, contributes highly. Considering that only one route (knowledge) contributes highly, and two routes (control and self-investment) contribute minimally, we predict that psychological ownership developed toward a borrowed object will be the lowest among the possession types. This should result in the lowest level of valuation for borrowed objects among the three possession types.

Non-possessed WTP for non-possessed objects should not be any different from the WTP for borrowed objects, provided the knowledge route of psychological ownership that operates at a high level for borrowed objects also operates highly for the non-possessed objects. With little to no control, and little to no self-investment, but with high knowledge of the object,

borrowers begin to resemble consumers who are actively evaluating a product to purchase, but do not possess it yet. The latter consumers also have low control and self-investment, but high knowledge, given their active evaluation.

Theoretically, the valuation difference between borrowed and non-possessed objects being contingent on high knowledge of non-possessed objects is important. After all, consumers could have high or low knowledge about non-possessed objects, especially in lab-based research. However, in the real world, there is a reasonable probability that people can develop high knowledge about a non-possessed object (that they are interested in buying) without using it or possessing it. This may be typical of most consumer purchases. People gain knowledge about non-possessed objects that they are considering to buy because of their prior experience, deliberate research, or by being exposed to knowledge about the non-possessed objects from social networks or marketers (Duhan et al. 1997; Friestad and Wright 1994). Therefore, we examine the non-possessed state assuming that there is an opportunity to evaluate the object, and thus high knowledge of the object is likely. Summarizing, the following relationship (between rented, borrowed, and non-possessed objects) is predicted:

- H1: $Willingness-To-Pay_{Rent} > (Willingness-To-Pay_{Borrow} = Willingness-To-Pay_{Non-Possession})$.
- H2: The higher valuation for rented objects ($Willingness-To-Pay_{Rent}$), relative to non-possessed and borrowed objects is mediated by the higher psychological ownership for rented objects.

Renting and borrowing Vis-a-Vis ownership: Expanding the WTA–WTP framework

We propose that the valuation difference between owned objects (willingness-to-accept) and rented and borrowed objects (willingness-to-pay) is not captured by the existing WTA–WTP endowment paradigm. Prior work on the endowment effect typically operationalizes WTP for non-*possessed* objects. However, we predict that WTP for non-*owned* objects (rented, borrowed, and non-possessed) will differ among these types. This also implies that the WTA–WTP gap will vary by the type of non-ownership possession (see Fig. 1). This is expected, as psychological ownership varies by possession type.

Psychological ownership developed through the routes of control and self-investment will be highest for ownership, moderate for renting, and lowest for borrowing (Beggan 1991; Dasgupta et al. 2007; Demsetz 1974; Slangen and Polman 2008). In contrast, the knowledge route is unlikely to be a significant discriminator, as physical possession leading to high knowledge is common across the three possession types (Rose 1985). The hypotheses below capture how and why the valuation of rented and borrowed objects differs from the valuation of owned objects.

H3: Owned objects are valued more than rented objects.

H4: Psychological ownership between owned, rented, and borrowed objects differs along the routes of psychological ownership such that:

- (a) $\text{Control}_{\text{Own}} > \text{Control}_{\text{Rent}} > \text{Control}_{\text{Borrow}}$
- (b) $\text{Self-Investment}_{\text{Own}} > \text{Self-Investment}_{\text{Rent}} > \text{Self-Investment}_{\text{Borrow}}$
- (c) $\text{Knowledge}_{\text{Own}} = \text{Knowledge}_{\text{Rent}} = \text{Knowledge}_{\text{Borrow}}$

Psychological ownership routes and rental valuation

We posit that rental objects are valued more than borrowed and non-possessed objects because of an increased contribution of the self-investment and control routes of psychological ownership. What if the control or the self-investment routes to psychological ownership are switched off? After all, not all rental contracts need automatically lead to increased control and increased self-investment toward the target product. A renter's feelings of control for a rental car that has severe mileage restrictions will be lower than when unlimited mileage is available for the same rental car. Similarly, feelings of self-investment for an apartment that one rents for six months will be greater than for an apartment that one rents for a week. Therefore, if the control or the self-investment routes of psychological ownership are restricted and cannot contribute toward the development of higher psychological ownership for

rental objects, the psychological ownership and the WTP for rental objects will no longer be higher than that for non-possessed objects. Formally:

H5: WTP for rental objects when all routes of psychological ownership are unrestricted is greater than WTP for rental objects when the control or self-investment routes are restricted.

Switching off the knowledge route of psychological ownership is harder. Physical possession, usage, and experience with an object occur naturally in renting and borrowing states. For example, when a renter or borrower is driving a rented or borrowed car, she naturally gets knowledge about the features, performance, and experience that car provides. Therefore, the knowledge route of psychological ownership operates at a high level in renting and borrowing. So we do not present a hypothesis about switching off the knowledge route.

While switching off the routes of psychological ownership is an important boundary condition, two other moderators of our proposed effects seem relevant in terms of their marketing implications: the type of product and the type of consumer. First, consumer choices are known to be impacted by whether consumers care more about the utilitarian or hedonic aspects of a product (Batra and Ahtola 1991). Second, in the context of willingness-to-pay, consumers' attitude toward spending (whether they are tightwad or spend-thrift) is relevant.

Moderating effect of product hedonism on the WTP for rented and borrowed objects

Consumers' preference for products is impacted by the hedonic or utilitarian nature of the product (Dhar and Wertenbroch 2000), and consumers' WTP for utilitarian goods is greater than consumers' WTP for hedonic goods (Okada 2005). This is because hedonic consumption evokes a sense of guilt (Kivetz and Simonson 2002). In contrast, utilitarian consumption is easier to justify. However, people are inherently motivated to consume hedonic goods and become more likely to consume hedonic goods when the decision context enables them to justify such a purchase (Okada 2005; Shafir et al. 1993).

We propose that the finding that WTP for utilitarian objects is higher than WTP for hedonic objects will apply for borrowed objects, but will not apply for rented objects. This is because the sunk investment in rent provides a quantifiable reason to justify consuming hedonic goods. The financial and psychological investment in the object, as an outcome of paying rent, becomes a justification for hedonic consumption. Formally:

H6: Renters (borrowers) will have a higher (lower) willingness-to-pay for objects that are perceived as more hedonic than utilitarian.

Moderating effect of consumers' tightwad–spendthrift tendency on the WTP for rented and borrowed objects

Consumers differ in their attitude toward spending. Tightwads experience relatively higher pain when spending money compared to spendthrifts who have an easier time spending money (Rick et al. 2007). We expect, counterintuitively, that tightwads' WTP is greater than spendthrifts' WTP in rental transactions. Prior rental payments can be viewed as a sunk cost in the sense that an investment of money has been made toward the usage of the rental object (Arkes and Blumer 1985). In rental transactions, rental payment and consumption are coupled together, as the use of the rental object is directly contingent on the rental payment. Further, tightwads are far more likely to couple payment and consumption (Kivetz 1999; Prelec and Loewenstein 1998). In contrast, spendthrifts de-couple such transactions and have an exceptional capacity to push costs out of mind (Prelec and Loewenstein 1998). Finally, when payment and consumption transactions are coupled, the attention given to sunk cost is greater (Soman and Gourville 2001).

Thus we conclude that tightwads (spendthrifts) due to their proneness to couple (de-couple) payment and consumption transactions are more (less) likely to give weight to rental payments [i.e., sunk costs] in future valuation decisions. In sum, tightwads raise their valuation to justify the prior sunk costs. Such a phenomenon will not happen in borrowing transactions, as there are no payments involved, nor is there a coupling between prior payment and consumption. Formally:

H7: Tightwads will have a greater willingness-to-pay than spendthrifts for rented objects, but not for borrowed objects.

Overview of studies

We conducted four experimental studies to test our predictions. Study 1 is a field study that examined whether renting leads to higher object valuation (H1). Study 2 replicates the findings of Study 1 in a laboratory setting and examines the mediating role of psychological ownership (H2). Study 2 also integrates our findings with the traditional WTA–WTP framework (H3). Further, it examines the disparate manner in which the routes of psychological ownership operate for each possession type (H4). Study 3 tests our psychological ownership based theoretical account by examining whether the higher WTP for rented

objects diminishes if the control or self-investment routes of psychological ownership are suppressed (H5). Study 4 examines the moderating effect of product hedonism-utilitarianism and consumers' tightwad–spendthrift tendency on the WTP for rented and borrowed objects (H6, H7).

Study 1: Field demonstration of valuation differences between rented, borrowed, and non-possessed objects

Method

Study 1 is a field study examining the relationship between object valuation and the non-ownership possession types of renting and borrowing. The experiment had three between-subjects' treatment conditions. Possession type was the manipulated variable with three levels (renting, borrowing, and non-possession).

Field setting The study was conducted over ten days during the winter holiday season at an ice skating trail in a mid-sized North American city. The ice skating trail was part of an amusement park managed by the city government. The skating establishment allowed customers to skate in exchange for a fee. While a majority of customers brought their own ice skates, many rented skates from the ice skating establishment. The number of customers that rented ice skates daily ranged from 20 to 30. We sought the formal permission of the city government which allowed our research assistants to be stationed alongside staff.

Ice skates were rented from a shop attached to the ice skating trail (see experimental set-up in Web Appendix A). The rental rate for ice skates was \$6 per hour and was paid up-front by the customers. Three research assistants (blind to the hypothesis) ran the study. At any given time, only one research assistant was present, and data for only one of the three conditions (rent/borrow/non-possession) was collected. The order in which the data collection time-slots were assigned to the conditions and research assistants was randomized.

Participants and experimental procedure Regardless of the treatment condition, only those customers that approached the ice skating establishment to rent skates were invited to participate in the study. This was done to ensure that the sample did not differ in terms of whether the respondents owned skates or not. All participants were given a redeemable coupon for a hot chocolate or coffee for participating in the study. One hundred and seventeen responses (55.5% females; $M_{age} = 31.9$ years) were obtained.

In the rental condition, skate renters were intercepted after they had used the rented skates and came back to return them.

The research assistant invited renters to complete a paper survey that asked renters to provide WTP for the rented skates. In the borrow condition, customers that asked to rent skates were informed, before they received the skates, that the ice skating establishment was running a promotional day. They were told that they will *not* be charged the \$6/h rental rate and could use (borrow) the skates for free. (We paid the ice skating establishment for the loss of revenue they suffered for lending the skates.) No other information was provided at this point. The borrowers were then intercepted after they had used the borrowed skates and came to return them. In the non-possession condition, customers that asked to rent ice skates were intercepted for a WTP measure right *after* they had chosen the skates they wanted to rent, but *before* they paid the up-front rent to use the skates.

Participants in all conditions were aware of the rental rate. Other measures in the survey included participants' evaluation of the ice skates on a seven-point liking scale (anchored: do not like/like), their need to purchase the skates (seven-point, anchored: do not feel any need/feel a need), "sense of ownership" for the ice skates (seven-point, anchored: do not feel any sense of ownership/feel a strong sense of ownership), and basic demographics.

Results

An ANCOVA with WTP as the dependent variable, the possession type as the predictor variable, and gender and age as covariates, yielded a significant effect of possession type, $F(2, 112) = 4.72, p = .011$. Gender was a significant covariate, $F(1, 112) = 4.66, p = .033$. Men ($M = \35.96) had a higher willingness-to-pay than women ($M = \$28.75$). There was no effect of age on WTP, $F(1, 112) = .51, p = .47$.

Follow-up planned contrasts revealed that as predicted, rented ice skates ($M = \$38.97$) were valued significantly higher than ice skates that were not possessed ($M = \$30.39$), $t(114) = 1.99, p = .049$. In addition, the rented ice skates ($M = \$38.97$) were valued significantly higher than the borrowed ice skates ($M = \$26.6$), $t(114) = 2.91, p = .004$. Together, these findings support H1. The WTP difference between the borrowed ice skates ($M = \$26.6$) and the non-possessed ice skates was not significant ($M = \$30.39$), $p = .37$.

An ANOVA with "sense of ownership" as the dependent variable, and possession type as the predictor yielded a marginally significant effect, $F(2, 114) = 2.87, p = .06$. Planned contrasts revealed that the "sense of ownership" for non-possessed ice skates was lower than both rented skates ($M_{Rent} = 4.15$ vs. $M_{Non-Possession} = 3.36$, $t(114) = 1.81, p = .07$) and borrowed skates ($M_{Borrow} = 4.35$ vs. $M_{Non-Possession} = 3.36$, $t(114) = 2.27, p = .025$). The "sense of ownership" did not differ between renters and borrowers ($M_{Rent} = 4.15$ vs. $M_{Borrow} = 4.35, p = .65$).

We also examined whether the single item "sense of ownership" measure mediated the effect of possession type on WTP using Hayes (2013) procedure (Process Model 4) for mediation (Hayes and Preacher 2014). We specified possession type (i.e., the independent variable) as multi-categorical in the Process Macro and *non-possession* as the reference group. There was a significant indirect effect on WTP through the "sense of ownership" measure from (a) the (Rent-Non-Possession) dummy (effect = 1.46, SE = 1.021, 95% CI: .062, 4.46), and (b) the (Borrow-Non-Possession) dummy (effect = 1.82, SE = 1.051, 95% CI: .313, 4.68).

It is unlikely that participants in the borrowing condition got a negative quality signal from getting the ice skates for free as there was no difference in the evaluation (liking) of ice skates based on the possession type ($p = .17$). Participants' need for ice skates also did not vary by possession type ($p = .72$). See Table 2 for detailed results of all studies.

Discussion

These results demonstrate, in a field setting, that object value is affected by renting, such that renters are willing to pay more for the same object than borrowers, or people who do not yet possess the object. In contrast, borrowers are not willing to pay more for the object than people who do not possess the object.

We recognize two limitations in the field study. First, a formal manipulation check was not included in the field study. To address this limitation, we conduct manipulation checks in all subsequent studies. Second, we did not use a tested and established measure of psychological ownership. Because our one item "sense of ownership" scale did not capture differences between renters and borrowers, we moved to a more rigorous investigation of the role of psychological ownership in the subsequent studies.

Study 2: How psychological ownership drives valuation for different possession types

Study 2 serves multiple objectives. First, the mediating role of psychological ownership was examined in a controlled laboratory setting (H2). Second, we wanted to integrate our findings with the traditional WTA–WTP framework (H3). Therefore, the willingness-to-accept (WTA) data for owned objects was also collected. Third, the study examined whether the valuation difference between the three physical possession states (ownership, renting, borrowing) is a function of how the three routes of psychological ownership (control, self-investment, and knowledge) operate (H4).

Table 2 Means, SDs, and cell counts for Studies 1 to 4

<i>Study 1</i>	Rent	Borrow	Non-Possession	
WTP	\$38.97 (20.74)	\$26.60 (20.47)	\$30.39 (14.67)	
Evaluation (Liking)	5.23 (1.20)	5.12 (1.24)	4.73 (1.15)	
Cell size	39	40	38	
<i>Study 2</i>	Own	Rent	Borrow	Non-Possession
WTA/WTP	\$4.06 (1.50)	\$2.57 (1.98)	\$1.86 (1.52)	\$1.79 (1.53)
Psych. Ownership	4.51 (1.51)	2.80 (1.56)	2.21 (1.25)	1.70 (1.22)
Control	5.60 (1.16)	4.63 (1.57)	3.88 (1.62)	3.71 (1.58)
Self-Investment	3.67 (1.23)	3.03 (1.38)	2.25 (1.11)	2.07 (1.20)
Knowledge	5.50 (1.11)	5.73 (0.96)	5.54 (1.23)	5.70 (0.87)
Product Evaluation	4.83 (1.16)	4.94 (1.10)	4.65 (1.15)	4.75 (1.22)
Cell size	42	42	41	40
<i>Study 3</i>	Rent: Standard	Rent: Control restricted	Rent: Self-investment restricted	Non-possession
WTP	\$2.86 (2.20)	\$1.76 (1.56)	\$1.54 (1.97)	\$1.96 (1.62)
Psych. ownership	2.63 (1.33)	1.74 (1.38)	1.91 (1.34)	1.82 (1.15)
Control	4.81 (1.48)	3.94 (1.89)	4.77 (1.24)	4.48 (1.33)
Self-Investment	3.01 (1.30)	2.08 (1.17)	2.47 (1.19)	2.28 (1.10)
Knowledge	5.58 (.95)	5.23 (1.26)	5.52 (.90)	5.51 (.88)
Product evaluation	4.45 (1.16)	3.98 (1.53)	4.61 (1.57)	4.55 (1.39)
Cell size	33	30	33	33
<i>Study 4</i>	Rental-hedonic	Rental-utilitarian	Borrow-hedonic	Borrow-utilitarian
WTP	\$4.51 (3.33)	\$4.08 (3.15)	\$3.47 (2.65)	\$2.87 (2.71)
Psych. ownership	2.71 (1.71)	3.01 (1.42)	2.54 (1.50)	1.91 (1.37)
Product evaluation	4.85 (1.27)	4.52 (1.19)	4.66 (1.53)	4.84 (1.31)
Cell size	32	28	28	29

Standard deviations are in parentheses

Method

Participants and design The experiment had four between-subjects treatment conditions (ownership, renting, borrowing, and non-possession) with possession type as the manipulated variable. It was conducted in a behavioral lab where paid participants ($N = 165$; 67% females; $M_{age} = 25.1$ years) derived from the university's staff and students provided their valuation of a high-quality mug (see Web Appendix A). The invitation letter informed the invitees that the study involved evaluating tea (a guise), and that the participants would be compensated with \$5 for participation. They were also informed that they would get an additional product (worth \$5) or equivalent cash (\$5). Further, if they received the additional cash, they may have to spend part of the money during the study.

Experimental procedure First, we manipulated possession, and respondents were given tea to evaluate. Participants in the ownership condition were told that they had earned a mug valued at \$5. Participants in the renting condition were

told that they had earned \$5 for participating in the study. They were told that the mugs would be rented to them for \$1. That \$1 was collected from them as rent, and the lab manager gave them a mug. Participants in the borrowing and the non-possession conditions were also told that they had earned \$5 for participating in the study. In the borrowing condition, participants were given the mugs for free. In the non-possession condition, participants were allowed to evaluate the mug for around a minute, and then the mug was taken back. They were asked to use disposable cups to evaluate the tea. Participants in all conditions were informed that the mugs were brand new and had a market price of \$5. In any session, all participants received the same manipulation.

The second phase of the study started with an acknowledgment screen on the computer, in which the possession manipulation was reinforced. For example, participants in the renting condition read and acknowledged the following statements, "I have rented a brand new mug for \$1. The mug I am renting typically sells in the market for \$5. I will use my rented mug to evaluate tea." See Web Appendix B for details on

manipulation instructions. A separate post-hoc manipulation check study ($N = 96$), using the same procedures and incentives, confirmed that participants perceived the possession manipulations accurately. Participants were asked to identify which option (ownership, renting, borrowing, or evaluation of the mug) best reflected the transaction that took place in the lab. Most participants (91.7%) successfully passed the possession manipulation check, suggesting that the manipulations work as intended.

After acknowledging the transaction terms, participants were invited to help themselves to tea in their owned, rented, or borrowed mugs, or the disposable cups. Twinings tea bags, hot water in electric kettles, milk, sugar, and sweetener were arranged on a large table in the middle of the laboratory. The elaborate set-up was intended to enforce the notion that the objective of the study was to evaluate tea, thereby reducing the likelihood of demand effects.

After the participants poured tea and returned to their workstations, they performed an unrelated study while consuming tea. The final phase of the study collected the main study measures. Participants provided their valuation for the mug (maximum WTP for renting, borrowing, and non-possession conditions; minimum WTA for the ownership condition) on a slider scale that ranged from \$0 to \$10. The WTA/WTP were elicited using the incentive compatible BDM (Becker et al. 1964) procedure. We adopted the BDM procedure as implemented by Frederick (2011). Maximum WTP was elicited using the instructions, “One of the participants in the session today (that could be you) will be randomly chosen as a buyer of the mug. The chosen buyer will have the opportunity to purchase the mug. If you are selected as a buyer, we will randomly generate a Lab (laboratory) price for the mug. If you are willing to pay the Lab price or more, you can purchase the mug at the Lab price. If not, we will keep the mug.”

The measures for psychological ownership and its three routes were also collected, all using seven-point scales, anchored “strongly disagree” and “strongly agree.” Psychological ownership for the mugs was measured on a three-item scale adapted from Shu and Peck (2011): (a) “I feel a very high degree of personal ownership of the mug,” (b) “I feel like this is my mug,” and (c) “I feel like I own this mug.” The first route, control, was measured with the three items: (a) “I feel that I can handle the mug the way I want,” (b) “I feel I can use the mug the way I want,” (c) “I feel a sense of control over the use of the mug.” The self-investment route was measured with the three items: (a) “I feel that I am psychologically invested in the mug,” (b) “I feel that I am financially invested in the mug,” and (c) “I feel that I am emotionally invested in the mug.” Finally, the knowledge route was measured with the three items: (a) “I feel that I can assess the features of the mug,” (b) “I have adequate knowledge regarding the aesthetics (how the mug looks and feels) of the mug,” (c) “I feel that I have knowledge regarding the quality of the mug.” The

order in which the valuation and psychological ownership measures were collected was counter-balanced.

The evaluations of the mug were collected on a five-item, seven-point scale that gauged participants’ agreement (strongly disagree–strongly agree) on whether they liked the size, design, color, shape, and the overall mug. Participants also responded to questions that gauged their need for a new mug, their evaluations of the tea, and basic demographic information. We also asked whether participants were trying to justify their spending (in the renting condition) by providing a higher WTP. At the end of the experiment, a seller (buyer) was selected from within the session’s participants in accordance with the BDM procedure, and the transaction was executed or not per the BDM rule.

We should elaborate on two specific design choices in Study 2. First, the net payoff a participant received in the renting condition was one dollar less than the borrowing and the non-possession conditions. To make the net payoff equivalent for renters would have required giving a non-equivalent initial dollar endowment (i.e., renters would have to be given \$6 initially which could create additional feelings of wealth potentially biasing upwards renters’ WTP). We chose to give all the same initial endowment, as any potential downwards impact on WTP (due to renters receiving a lesser net dollar payoff) creates the opposite effect to our hypothesized direction of effects, and is therefore conservative.

Second, the decision to inform participants of the mug’s price was deliberate. Renters may have inadvertently construed that if an experimenter is charging \$1 to rent the mug (for the short experimental duration), the mug must be expensive and carry high value (Plott and Zeiler 2007). Therefore, the market price of the mug was provided. We examine the valuation effects in the absence of reference price information in subsequent studies.

Results

An initial analysis revealed that neither participants’ product evaluations of the mug, nor their need for purchasing a new mug, nor their evaluations of the tea, varied across the four treatment conditions ($ps > .53$).

Effect of possession type on product valuation Analysis of variance with the monetary value of the mug as the dependent variable, the possession type as the independent variable, and gender and age as covariates, revealed that possession type significantly predicted the value of the mug, $F(3, 159) = 17.23$, $p < .001$. Neither gender nor age had a significant effect on the mug’s monetary value ($ps > .26$). Follow-up contrasts revealed that the rented mug was valued ($WTP_{Rent} = \$2.57$) higher than both the non-possessed mug ($WTP_{Non-Possessed} = \$1.79$), $t(161) = 2.12$, $p = .035$, as well as the borrowed mug

($WTP_{Borrow} = \$1.86$), $t(161) = 1.96$, $p = .051$. There was no difference between the valuation of borrowed and non-possessed mugs ($p = .86$). Also, as predicted in H3, the owned mug ($WTA_{Own} = \$4.06$) was valued higher than the rented mug ($WTP_{Rent} = \$2.57$), $t(161) = 4.13$, $p < .001$.

Effect of possession type on psychological ownership

Possession type was found to significantly predict the psychological ownership ($\alpha = .91$) of the mug, $F(3, 161) = 31.40$, $p < .001$. As predicted, the psychological ownership for the owned mug ($M = 4.51$) was significantly higher than the psychological ownership for the rented mug ($M = 2.80$), $t(161) = 5.57$, $p < .001$. Psychological ownership for the rented mug ($M = 2.80$) was significantly higher than the psychological ownership for the borrowed mug ($M = 2.21$), $t(161) = 1.94$, $p = .054$, as well as higher than the psychological ownership for the non-possessed mug ($M = 1.70$), $t(161) = 3.55$, $p < .001$. The difference between the psychological ownership for the borrowed mugs ($M = 2.21$) and the non-possessed mugs ($M = 1.70$) did not reach significance, $p = .11$.

We next examined whether psychological ownership mediated the effect of possession type on valuation using Hayes (2013) procedure (Process Model 4) for mediation (Hayes and Preacher 2014). We specified possession type (the independent variable) as multi-categorical in the Process Macro and non-possession as the reference group. There was a significant indirect effect on valuation through psychological ownership from (a) the (Own-Non-Possession) dummy (effect = .661, SE = .311, 95% CI: .125, 1.340), (b) the (Rent-Non-Possession) dummy (effect = .259, SE = .140, 95% CI: .059, .648), as well as (c) the (Borrow- Non-Possession) dummy (effect = .118, SE = .086, 95% CI: .0009, .358) lending support to H2. See Fig. 2 for the mediation path diagram.

Effect of possession type on the routes of psychological ownership

Separate one-way ANOVAs were conducted to examine the effect of possession type on each of the three routes of psychological ownership. We found that the *control* ($\alpha = .85$) route of psychological ownership was significantly affected by possession type, $F(3, 161) = 13.67$, $p < .001$. As predicted, the feelings of control were highest for ownership, moderate for renting, and the lowest for borrowing. Specifically, the measure of perceived control was higher for an owned mug ($M = 5.60$) than for a rented mug ($M = 4.63$), $t(161) = 2.96$, $p = .004$. Further, the measure of the control route was higher for a rented mug ($M = 4.63$) than for a borrowed mug ($M = 3.88$), $t(161) = 2.28$, $p = .024$. The borrowed mug ($M = 3.88$) and the non-possessed mug ($M = 3.71$) did not differ significantly on perceived control, $p = .61$.

Similarly, the self-investment ($\alpha = .82$) route of psychological ownership significantly varied by possession type, $F(3, 161) = 14.55$, $p < .001$. Just as was the case with the control

route, the feelings of self-investment were highest for ownership, moderate for renting, and the lowest for the borrowing and non-possession conditions. Contrasts revealed that the feelings of self-investment were higher for an owned mug ($M = 3.67$) than for a rented mug ($M = 3.03$), $t(161) = 2.34$, $p = .020$. As predicted, the self-investment for a rented mug ($M = 3.03$) was higher than the self-investment for a borrowed mug ($M = 2.25$), $t(161) = 2.85$, $p = .005$. The borrowed mug ($M = 2.25$) and the non-possessed mug ($M = 2.07$) did not differ significantly on the self-investment route, $p = .50$.

Finally, as predicted, the knowledge route ($\alpha = .83$) of psychological ownership did not vary by possession type, $p = .68$. The knowledge route contributed highly for all possession types ($M_{Own} = 5.50$ vs. $M_{Rent} = 5.73$ vs. $M_{Borrow} = 5.54$ vs. $M_{Non-Possession} = 5.70$). These findings together provide support for H4.

Operation of psychological ownership routes

A final missing piece of the puzzle is how the three routes affect psychological ownership. To examine that, a linear regression analysis was performed with psychological ownership as the dependent variable, the three psychological ownership routes (mean-centered), and all their interaction terms as the predictors. We also included a *physical possession* dummy variable, as the four possession states differed on actual physical possession and object use. Specifically, the physical possession dummy was coded as “1” for the three physical possession states of ownership, renting, and borrowing; and was coded as “0” for the non-possession state. The model was significant $F(8, 156) = 26.35$, $p < .001$. As expected, the physical possession dummy was significant ($\beta = .67$; $t = 2.97$, $p < .01$). Crucially, as predicted, regression analysis revealed that psychological ownership was significantly and positively predicted by both *control* ($\beta = .369$; $t = 4.95$, $p < .001$) and *self-investment* ($\beta = .53$; $t = 5.57$, $p < .001$), but not by *knowledge* ($\beta = -.10$; $t = -.95$, $p = .34$). Only one of the included interaction terms (control \times self-investment) was significant ($\beta = .137$; $t = 2.69$, $p < .01$). The nature of the interaction was such that the positive effect of control on psychological ownership increased at greater levels of self-investment. All other interaction terms were not significant ($ps > .13$).

The role of product evaluations We examined the alternative possibility that being more invested in the object (as with renting and ownership) leads to increased product evaluations, which in turn drives the higher monetary valuation for ownership and renting. To analyze this, we first conducted a one-way ANOVA analysis with the mug’s composite product evaluations ($\alpha = .86$) as the dependent variable and the possession type as the independent variable. The analysis revealed that product evaluations did not vary across possession types, $F(3, 161) = .45$, $p = .71$ ($M_{Own} = 4.83$ vs. $M_{Rent} = 4.94$ vs. $M_{Borrow} = 4.65$ vs. $M_{Non-Possession} = 4.75$). A follow-up

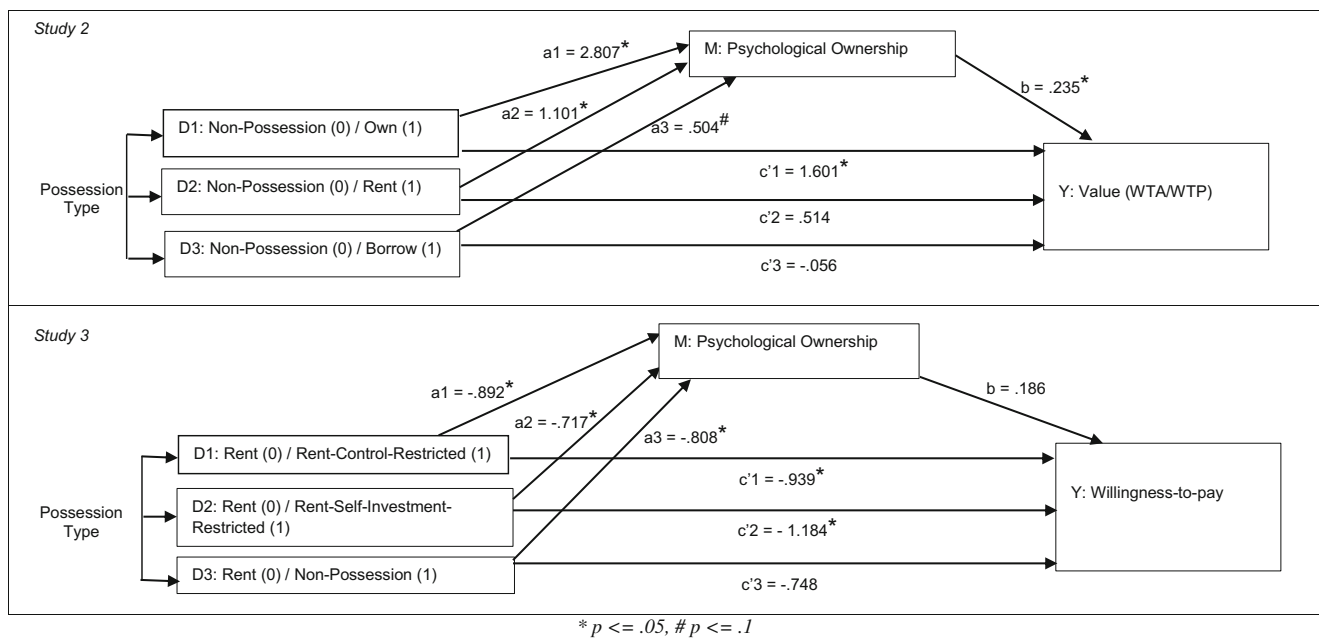


Fig. 2 Mediation path diagrams

mediation analysis was conducted with possession type as the predictor, monetary valuation as the dependent variable, and product evaluations as the mediator using the same procedure highlighted above for psychological ownership. There was *no* indirect effect on monetary valuation through product evaluations from either (a) the (Own-Non-Possession) dummy (95% CI: $-.164, .244$), or (b) the (Rent-Non-Possession) dummy (95% CI: $-.108, .291$), or (c) the (Borrow-Non-Possession) dummy (95% CI: $-.254, .153$).

This does *not* imply that product evaluations do not affect monetary valuation. As expected, a regression analysis with product evaluations as the predictor and monetary valuation as the dependent variable revealed a positive effect of product evaluations on monetary valuation, ($\beta = .40$; $t = 3.29$, $p < .01$). However, differences in monetary valuation across possession types are not a function of differences in product evaluations across possession types. Rather, they are a function of differences in psychological ownership.

Discussion

The findings of Study 2 integrate the valuation of rented and borrowed objects into the traditional WTA–WTP framework. The study also provides evidence for the psychological ownership route based valuation framework. The study confirms that object valuation for different possession types varies as the contributing routes of psychological ownership (control, self-investment, and knowledge) operate differently for each possession type.

Study 3: The mechanics of psychological ownership and WTP

Study 3 examines the mechanics of the psychological ownership route framework. It tests whether switching off the control or the self-investment route of psychological ownership lowers psychological ownership, diminishing the higher WTP expected with rental objects (H5).

Method

Participants and design The experiment had four between-subjects conditions, with possession type as the manipulated variable. There were three rental conditions and one non-possession condition that served as the control group. Undergraduate students ($N = 146$) participated in exchange for \$6 in cash and a course credit. The invitation letter informed participants that the study would involve a writing task. The letter also mentioned that the participants might have to spend up to \$1 from what they earned during the study. In any given session, all participants received the same manipulation. The order of the sessions was randomized. The product used for the study was a high-quality Franklin Covey pen that retails for \$12 (see Web Appendix A). We varied both the control and the self-investment routes of psychological ownership across the three rental conditions. In the non-possession condition, the pen was not rented, but the participants were given an opportunity to evaluate it.

Experimental procedure The lab was set up such that each participant's workstation had \$6 already placed on the desk.

In the Rental-_{Standard}, Rental-_{Control Restricted}, and Non-Possession conditions, \$6 was placed in denominations of \$5 bills and \$1 coins. In contrast, in the Rental-_{Self-Investment Restricted} condition, \$6 was placed in denominations of \$5 bills and 10 dimes. The experiment started with the possession manipulation being executed. In the Rental-_{Standard} and Rental-_{Control Restricted} conditions, participants rented the brand new Franklin Covey pen for \$1 using the same method as Study 2. In the Rental-_{Self-Investment Restricted}, to restrict the monetary investment associated with the rental condition, renters were charged one dime (versus one dollar) as rent. In the non-possession condition, participants evaluated the brand new pen for thirty seconds. They completed the experimental writing task using a pencil.

The next component of the study involved a formal contract acknowledgment task on paper to further manipulate the “self-investment” route by varying the association of the participant’s identity with the rented object (Dommer and Swaminathan 2012). To manipulate this, participants in the Rental-_{Standard}, Rental-_{Control Restricted}, and Non-Possession conditions were asked to print (write) their names and provide their signatures next to the following statements: “I [__ Participant enters name __] have rented (evaluated) a Franklin Covey pen for \$1 (for free). I will use my rented pen (pencil) to perform the writing task [__ Participant signs under the statements __]”. In contrast, in the Rental-_{Self-Investment Restricted} condition, *no* identity association with the rented pen was allowed. Participants were given arbitrary identities that matched their workstation numbers, and it was specified that the pens belonged to the Lab. Participants acknowledged the following statements: “I have rented a Franklin Covey pen for 10 cents. I will use the rented pen that belongs to the Lab to perform a writing task. [__ Participants enter their participant # next to the statements __]”.

Participants next proceeded to the writing task. All participants were asked to copy a passage from the computer screen on a sheet of paper using their rental pens (or pencils) for a duration of four minutes. It was during this stage of the experiment that three restrictions on the use of the rental pen for the writing task were imposed in the Rental-_{Control Restricted} condition. Specifically, in the Rental-_{Control Restricted} condition, participants were asked to copy the text in UPPER CASE only, to copy text only within certain dotted boxes on the sheet of paper provided, and finally clean the rental pens of their fingerprints using a micro-fiber cloth after completing the rental task. In contrast, in the Rental-_{Standard}, Rental-_{Self-Investment Restricted}, and Non-Possession conditions, none of these three restrictions were imposed, and participants were simply instructed to copy the text on a blank sheet of paper using their rented pens (or pencils).

After the writing task, participants proceeded to the next phase of the study where maximum WTP for the pen was collected on a slider scale that ranged from \$0 to \$12 using

the incentive compatible BDM procedure (Becker et al. 1964). Other measures collected included measures that gauged psychological ownership and its contributing routes, product evaluations, and general mood. The following manipulation checks were included. First, we included a check that gauged whether our manipulation to suppress the control route was successful (two item seven-point disagree/agree scale, items: (a) I did not have freedom to use the rental pen during the writing task, (b) The lab put many restrictions on the use of the rental pen). Second, we included a check that gauged whether our manipulation to suppress the self-investment route was successful (two item seven-point scale, items: (a) I paid a high amount of money for the pen’s rent, (b) I was involved in evaluating the pen). Finally, participants responded to a manipulation check that asked them to select the option (renting, borrowing, physical evaluation, or evaluation without seeing the object) that best reflected the type of transaction that took place in the lab. The end of study procedures were the same as in Study 2.

Results

Manipulation checks A majority (90.2%) of the participants accurately identified the transaction type at the end of the study. Fourteen participants that failed the possession manipulation check (i.e., they identified the transaction occurring in the experiment incorrectly) and three participants that failed an attention check were removed from further analyses leaving a final usable sample size of 129 (53.5% females, $M_{age} = 20.5$ years). Additional manipulation checks confirmed that both the control restriction manipulation and the self-investment restriction manipulation were successful. Specifically, planned contrasts revealed that participants in the Rental-_{Control Restricted} ($M = 4.88$) condition rated the restrictions during the writing task as being significantly more severe than participants in all other conditions (M -Rental-_{Standard} = 2.57; M -Rental-_{Self-Investment Restricted} = 2.77; M -Non-Possession = 3.10; $ps < .001$). Additionally, the self-investment restriction manipulation check revealed that participants in the Rental-_{Self-Investment Restricted} condition ($M = 3.07$) were less invested in the rental pen than participants in the other rental conditions (M -Rental-_{Standard} = 4.39; M -Rental-_{Control Restricted} = 4.43, $ps < .001$). The pen’s product evaluations, need for a new pen, and general mood did not vary across the four conditions ($ps > .18$).

Main effects Analysis of Variance with WTP as the dependent variable, possession type as the independent variable, and gender and age as covariates revealed a significant effect of possession type on WTP, $F(3, 123) = 2.88$, $p < .05$. Gender and age did not have any significant effect on WTP ($ps > .17$). Replicating prior experiments, the WTP was higher in the standard rental condition ($M = \$2.86$) than in the non-possession

condition ($M = \$1.96$), $t(125) = 1.96$, $p = .053$. As earlier, psychological ownership was significantly impacted by possession type, $F(3, 125) = 3.19$, $p < .05$. Psychological ownership in the standard rental condition ($M = 2.63$) was higher than the psychological ownership in the non-possession condition ($M = 1.82$), $t(125) = 2.51$, $p = .01$.

Effect of restricting control on rental valuation Planned contrasts revealed that, as predicted, putting restrictions on the use of the rental pen dropped its WTP significantly. Specifically, the willingness-to-pay in the Rental-Control-Restricted condition ($M = \$1.76$) was lower than the willingness-to-pay in the standard rental condition ($M = \$2.86$), $t(125) = 2.34$, $p < .05$. The WTP in the Rental-Control-Restricted condition ($M = \$1.76$) and the non-possession condition ($M = \$1.96$) did not differ, $t(125) = .43$, $p = .66$.

We next examined whether the control route of psychological ownership, and by consequence the psychological ownership for the rental pen, were suppressed when restrictions were placed on the use of the pen. Planned contrasts showed that both the control route and the self-investment route of psychological ownership were suppressed. The control route of psychological ownership in the Rental-Control-Restricted condition ($M = 3.94$) was significantly lower than the control route in the Rental-Standard condition ($M = 4.81$), $t(125) = 2.3$, $p = .02$. The self-investment route of psychological ownership in the Rental-Control-Restricted condition ($M = 2.08$) was also significantly lower than the self-investment route in the Rental-Standard condition ($M = 3.01$), $t(125) = 3.06$, $p < .01$. The suppression of the self-investment route in the Rental-Control-Restricted condition was unexpected, as the self-investment route was not experimentally restricted in this condition. As our theory predicts, the decline in these routes affected the overall psychological ownership as well. Psychological ownership in the Rental-Control-Restricted condition ($M = 1.74$) was lower than the psychological ownership in the Rental-Standard condition ($M = 2.63$), $t(125) = 2.70$, $p < .01$.

As expected, the knowledge route of psychological ownership did not vary across conditions, $p = .52$. The knowledge route contributed highly for all possession types ($M_{\text{Rental-Standard}} = 5.58$ vs. $M_{\text{Rental-Control-Restricted}} = 5.23$ vs. $M_{\text{Rental-Self-Investment-Restricted}} = 5.52$ vs. $M_{\text{Non-Possession}} = 5.51$).

Effect of restricting self-investment on rental valuation

Reducing investment in the rental pen also dropped its WTP significantly. Specifically, the willingness-to-pay in the Rental-Self-Investment-Restricted condition ($M = \$1.54$) was lower than the willingness-to-pay in the standard rental condition ($M = \$2.86$), $t(125) = 2.86$, $p < .01$. The WTP in the Rental-Self-Investment-Restricted condition ($M = \$1.54$) and the non-possession condition ($M = \$1.96$) did not differ significantly, $t(125) = .90$, $p = .36$.

We next examined whether the self-investment route of psychological ownership, and by consequence the psychological ownership for the rental pen, were suppressed in the Rental-Self-Investment-Restricted condition. Planned contrasts revealed that the self-investment route in the Rental-Self-Investment-Restricted condition ($M = 2.47$) was lower than the self-investment route in the Rental-Standard condition ($M = 3.01$), $t(125) = 1.82$, $p = .07$. As predicted, the decline in the self-investment route affected the overall psychological ownership as well. Psychological ownership in the Rental-Self-Investment-Restricted condition ($M = 1.91$) was significantly lower than the psychological ownership in the Rental-Standard condition ($M = 2.63$), $t(125) = 2.23$, $p = .027$. Together, these findings support H5.

Routes of psychological ownership We examined whether psychological ownership mediated the effect of possession type on WTP using Hayes (2013) procedure (Process Model 4) for mediation (Hayes and Preacher 2014). We specified possession type (i.e., the independent variable) as multi-categorical in the Process Macro and Rental-Standard as the reference group. There was a significant indirect effect on WTP through psychological ownership from (a) the (Rental-Standard and Rental-Control-Restricted) dummy (effect = $-.166$, SE = $.122$, 90% CI: $-.451$, $-.028$), (b) the (Rental-Standard and Rental-Self-Investment-Restricted) dummy (effect = $-.134$, SE = $.119$, 90% CI: $-.406$, $-.0058$), as well as (c) the (Rental-Standard and Non-Possession) dummy (effect = $-.151$, SE = $.120$, 90% CI: $-.429$, $-.016$). See Fig. 2 for path diagram.

Next, to examine how the routes of psychological ownership affected psychological ownership, we performed a regression analysis, as in Study 2, with psychological ownership as the dependent variable. The three psychological ownership routes (mean-centered), their interaction terms, and the physical possession dummy were the predictors. The model was significant $F(8, 120) = 13.01$, $p < .001$. We observed the same pattern as in Study 2. Psychological ownership was significantly and positively predicted by both *control* ($\beta = .19$; $t = 3.07$, $p < .01$) and *self-investment* ($\beta = .62$; $t = 7.48$, $p < .001$), but not by *knowledge* ($\beta = .02$; $t = .24$, $p = .80$). Only one of the included interaction terms (control x self-investment) was significant ($\beta = .11$; $t = 1.87$, $p = .06$), and followed the same pattern as observed in Study 2. All other predictors were not significant ($ps > .46$).

Discussion

We show that by manipulating and suppressing the routes to psychological ownership, we can restrict its overall development. This limits the higher valuation associated with certain possession states. Our findings also show the relative independence of the control and the self-investment routes from the knowledge route. The self-

investment and the control routes can be suppressed without a corresponding suppression of the knowledge route. However, the control and the self-investment routes seem to have an asymmetric relationship. Suppressing the control route diminishes the self-investment route. In contrast, suppressing the self-investment route does not impact the control route.

Study 4: Moderators of valuation of rented and borrowed objects

Study 4 tests whether the proposed moderators (hedonic/utilitarian products, tightwad-spendthrift consumers) affect the valuation of rented (vs. borrowed) objects (H6 and H7).

Method

Participants and design The experiment was a 2×2 between-subjects design with possession type (rent/borrow) and product type (hedonic/utilitarian) as the two manipulated variables. The tightwad-spendthrift tendency was a measured variable. Undergraduate students ($N = 129$) participated in exchange for \$10 cash and a course credit. The invitation letter informed students that the study would involve evaluating apple juice, and that they would be compensated with \$10 in addition to the course credit. The letter also mentioned that the participants may have to spend up to \$1 from what they earned. In any session, all participants received the same manipulation.

The order of the sessions was randomized. The product category used for the study was beer mugs. The hedonic/utilitarian nature of the product was manipulated by using two different types of beer mugs. The beer mugs were selected based on a pretest ($N = 32$) that asked participants to rate multiple types of glassware (beer mugs, wine glasses, champagne flutes) on a nine-point hedonic-utilitarian scale (anchored: 1 = highly utilitarian, 9 = highly hedonic) (Dhar and Wertenbroch 2000). To rule out other possible confounds between product types, we short-listed two beer mugs that were from the same brand, “Final Touch,” had a similar size, and were made of the same glass material. The only difference between the two beer mugs was style. The hedonic beer mug was shaped as a boot. In contrast, the utilitarian beer mug was shaped as a regular beer mug (see Web Appendix A for stimuli used). The pretest revealed that the boot mug was rated as more hedonic than the regular mug ($M_{Boot} = 7.25$ vs. $M_{Regular} = 3.56$, $t(31) = 8.23$, $p < .001$). The boot beer mug’s retail price (\$19.50) was higher than the regular beer mug (\$12.50). To avoid anchoring effects, we did not reveal the market price of the beer mugs.

Experimental procedure The possession manipulation was executed and respondents were given apple juice to evaluate. The renting and borrowing manipulations used the same method as in Study 2, with one exception. Given that there was no non-possession condition involved, we did not explicitly specify that the beer mugs were brand new.

The rental rate for using the beer mug was \$1 in the two rental conditions. The beer mugs were lent for free in the borrowing conditions. The possession manipulation was reinforced using the same procedure (participants acknowledged the transaction terms) as in Study 2. After acknowledging the transaction terms, participants were invited to help themselves to consume apple juice in their beer mugs. If participants were allergic to apple juice, they were given an option to consume Perrier sparkling water instead. A majority (89%) consumed apple juice.

After the participants poured juice and returned to their workstations, they performed an unrelated filler study while consuming their apple juice. The final phase of the study collected the main study measures. Participants provided maximum WTP for the mug on a slider scale that ranged from \$0 to \$20 using the incentive compatible BDM procedure (Becker et al. 1964). All other measures collected in Study 2 were also collected (using the same scale items adapted for beer mugs). The product evaluations of the beer mug were collected on a five-item, 1–7 scale that gauged participants’ agreement (strongly disagree to strongly agree) on whether they liked the size, design, feel, shape, and the overall mug. In addition, the following variables of interest were collected. First, the hedonic/utilitarian perception of the beer mug was measured using two single item scales (a hedonic scale, where 1 = “not at all hedonic” and 9 = “extremely hedonic,” and similarly a utilitarian scale of 1 to 9, adapted from Okada 2005). The accompanying description of the hedonic scale read, “Please rate the mug as more hedonic if you feel it is pleasant and fun – something that is enjoyable and appeals to the senses (e.g., perfume)”. The utilitarian scale read, “Please rate the mug as more utilitarian if you feel it is useful, practical and functional – something that helps achieve a goal (e.g., a vacuum cleaner).” In addition, to check the success of the product hedonism manipulation, participants also rated the beer mug’s hedonism on the same bipolar nine-point hedonic–utilitarian scale used in the pretest.

Participants provided their tightwad–spendthrift tendency on a seven-point bipolar scale (anchored: 1 = tightwad, 7 = spendthrift) adapted from Frederick (2011). Two other unipolar scale items (anchored: 1 = strongly disagree, 7 = strongly agree) measured whether participants’ described themselves as tightwads or spendthrifts (adapted from Rick et al. 2007). Gratefulness for being given the beer mug for rent (rent condition) or for free (borrow condition) was also collected on a three-item seven-point scale (grateful, thankful, appreciative;

Palmatier et al. (2009)). Participants were also asked an open-ended question that assessed their thoughts on why the mug was rented to them (or lent to them for free). Finally, participants responded to a manipulation check that asked them to choose between four options (renting, borrowing, trade-in, or barter) that best reflected the type of transaction that took place in the study. The end of study procedures remained the same as in earlier studies.

Results

Manipulation checks Most of the participants (92.8%) correctly identified the renting and borrowing transaction at the end of the study. Nine participants that failed to identify the transaction occurring in the experiment, and three that failed an embedded instructional manipulation check (that gauged participants' attentiveness to survey instructions) were removed from further analyses leaving a final usable sample size of 117 (56.4% females, $M_{age} = 20.6$ years). Manipulation checks also confirmed that the boot mug ($M = 6.16$) was seen as hedonic while the regular beer mug ($M = 4.29$) was seen as utilitarian, $F(1, 115) = 24.7, p < .001$.

Effect of product hedonism-utilitarianism on valuation We conducted an ANOVA with WTP as the dependent variable. The product type (hedonic/utilitarian) and possession type (renting/borrowing) were the predictors. Gender and age were included as covariates. We observed that gratefulness for being rented the mug ($M = 3.84$) was significantly lower than being lent the mug for free ($M = 4.80$), $p < .01$. Hence, we included gratefulness as a covariate in the ANOVA analysis. The analysis yielded a significant effect of the possession type, $F(1, 110) = 5.51, p < .05$. As expected, the rented beer mugs ($M = \$4.31$) were valued more than the borrowed beer mugs ($M = \$3.16$). Neither the product type \times possession type interaction, nor the product type (hedonic or utilitarian) had any effect on willingness-to-pay ($ps > .38$). There was a marginal effect of gratefulness on WTP, $F(1, 110) = 2.79, p = .098$. There was no significant effect of gender and age on WTP ($ps > .36$).

There is a view in the product hedonism literature that hedonism and utilitarianism are not ends of a one-dimensional scale (Voss et al. 2003). In other words, some participants may have seen the beer mugs as both hedonic and utilitarian, or neither. To accommodate this view, we followed the prior literature (Okada 2005; Dhar and Wertenbroch 2000) and created a composite measure of participants' perceptions of the beer mugs ($M = .04, SD = 2.24$) by computing the difference between each participant's hedonic and utilitarian ratings of the beer mugs. We regressed WTP on the composite measure of hedonism and utilitarianism (centered), the dummy-coded possession type variable (one = renting), and their interaction term. Other than the possession type ($t = 2.06; p < .05$); neither the

interaction term ($t = -.64; p = .52$), nor the composite measure of hedonism/utilitarianism ($t = .52; p = .59$) affected the willingness-to-pay. Based on these findings, H6 is not supported.

Effect of consumers' tightwad-spendthrift tendency on valuation A regression analysis was conducted to test the predicted interaction between consumers' tightwad-spendthrift tendency and possession type (renting/borrowing) on the willingness-to-pay. We regressed WTP on the mean-centered bi-polar tightwad-spendthrift measure, the dummy-coded possession type variable (one = renting), and their interaction term. The model was significant, $F(3, 113) = 3.57, p = .016$. There was a significant interaction between consumers' tightwad-spendthrift tendency and possession type ($\beta = -.87; t = -2.39, p = .018$). There was also a significant effect of possession type ($\beta = 1.18; t = 2.18, p = .031$). A spotlight analysis at one standard deviation below the mean of consumers' tightwad-spendthrift tendency showed a substantive significant difference, such that tightwad consumers had a higher WTP for rented mugs over borrowed mugs ($\beta = 2.49; t = 3.23, p < .01$). A spotlight analysis at one standard deviation above the mean of consumers' tightwad-spendthrift tendency showed no significant difference, implying that the WTP difference for rented and borrowed mugs did not differ for people with high spendthrift tendencies ($\beta = -.121; t = -.158, p = .87$). Additional analyses revealed that in the borrowing condition, consumers' tightwad-spendthrift tendency had no impact on WTP ($\beta = .279, t = 1.11, p = .26$). In contrast, in the renting condition, there was a significant impact of consumers' tightwad-spendthrift tendency on WTP ($\beta = -.599, t = -2.23, p = .027$), such that, tightwads had a higher WTP than spendthrifts. These findings support H7.

Follow-up analyses: Effect of product evaluations As in Study 2, product evaluations ($\alpha = .88$) did not vary in the renting ($M = 4.69$) and the borrowing conditions ($M = 4.75$), $p = .81$. A follow-up mediation analysis using the same procedures as in earlier experiments revealed that product evaluations did not mediate the relationship between possession type and willingness-to-pay (95% CI: $-.258, .399$).

There was an interesting moderating effect of product evaluations in this experiment. We regressed WTP on the mean-centered product evaluations for the mug, the dummy-coded possession type variable (one = renting), and their interaction term. The model was significant, $F(3, 113) = 6.76, p < .001$. There was a significant interaction between product evaluations and possession type ($\beta = .94; t = 2.38, p = .018$). A spotlight analysis at one standard deviation above the mean of product evaluations showed a significant difference. When people evaluated the mugs favorably, rented mugs were valued much higher than borrowed mugs ($\beta = 2.43; t = 3.29, p < .01$). A similar spotlight analysis at one standard deviation below the product evaluations' mean

showed no significant difference between the valuation of rented and borrowed beer mugs ($\beta = -.07$; $t = -.09$, $p = .92$).

Discussion

The findings of Study 4 reveal that consumers' tightwad/spendthrift tendency moderates the reported effects such that tightwads have a higher willingness-to-pay than spendthrifts for rented (but not for borrowed) objects. However, the nature of the product (hedonic/utilitarian) does not seem to impact the valuation of rented and borrowed objects.

General discussion

Aggregate size of observed effects

To interpret an overall effect size, we did a single-paper meta-analysis of our effects observed across the various experiments. McShane and Böckenholt (2017) recommend this approach to supplement single study analyses in behavioral research papers that have multiple studies examining a common phenomenon. We calculated the standardized Cohen's d effect size measure for the valuation effects observed across all experiments (Cohen 1977). To obtain an unbiased aggregate effect size that corrects for different sample sizes, we weighted the effect sizes using Rosenthal and Rubin's (1982) procedure.

The aggregate effect of renting (on WTP), relative to non-possession, across all reported experiments was $d = .46$ ($N = 225$). The aggregate effect of renting (on WTP), relative to borrowing, across all reported experiments was $d = .45$ ($N = 279$). The effect sizes are of a moderate magnitude compared to the effect of legal ownership relative to non-possession (i.e., the standard endowment effect) observed in Study 2, $d = 1.49$ ($N = 82$).

Theoretical implications

We establish that the relationship between object valuation and physical possession extends beyond ownership, to the non-ownership possession types of renting and borrowing. Rented objects are valued more than non-possessed objects and borrowed objects. Further, the valuation of borrowed objects is no different from the valuation of non-possessed objects. We add to the existing endowment effect paradigm by integrating the valuation of rented and borrowed objects with the valuation of owned and non-possessed objects.

Our research also extends the psychological ownership literature, showing that psychological ownership mediates the relationship between valuation and non-ownership physical possession. Psychological ownership provides a compelling explanation of why valuation differs between the three possession types (ownership, renting, and borrowing). Our

research also shows that the routes of psychological ownership are not static. These routes can be manipulated to suppress psychological ownership and subsequent valuation.

Finally, our findings extend prior research on consumers' tightwad–spendthrift tendency (Rick et al. 2007) and mental accounting (Kivetz 1999; Soman and Gourville 2001) in the context of renting, demonstrating that tightwads have a higher willingness-to-pay than spendthrifts for rented (but not for borrowed) objects. Our work suggests that product nature (hedonic versus utilitarian) may not influence the WTP for rented and borrowed objects.

Perhaps surprisingly, we found that physical possession alone (as in borrowing) does not lead to higher valuation relative to the *non-possessed* state. This result contradicts prior findings on the effect of physical possession on valuation (Reb and Connolly 2007). There are two possible explanations for these contradictory findings. First, Reb and Connolly's manipulation of the non-possession condition did not allow any physical contact with the object for evaluation and provided limited information about the object. This may have led to the knowledge route operating at a low level for the non-possessed object, thereby creating a valuation difference between the possessed and the non-possessed object. Second, using an object (as in borrowing) for drinking a beverage may give an impression that someone else previously used the object. In contrast, the non-possessed object may be perceived as unused and new, and therefore worthy of higher value. We consciously controlled for this issue in our lab studies by informing the participants in the lab that the object (pen, mug) they were renting, borrowing, evaluating, or owning was *brand new* (except in Study 4 where non-possession was not examined).

Our research adds to prior research on how product evaluations, psychological ownership, and monetary valuation relate to each other. The direct effects: higher psychological ownership leads to higher monetary valuation (Shu and Peck 2011), and higher product evaluations lead to higher willingness-to-pay (Wertenbroch and Skiera 2002), are established. However, there is ambiguity in the prior literature on the relationship between psychological ownership and product evaluations. Three viewpoints emerge. First, higher psychological ownership has been shown to increase product evaluations (Huang et al. 2009; Weiss and Johar 2013). A second viewpoint suggests that higher psychological ownership is more likely to develop for objects that are evaluated highly (Pierce et al. 2003). A third viewpoint in the literature suggests that the two constructs operate independently of each other (Van Dyne and Pierce 2004). The third viewpoint has also been validated by Fuchs et al. (2010) who found that higher psychological ownership resulted in higher WTP, independent of product evaluations. Our findings are consistent with the third viewpoint: that psychological ownership and product evaluations operate independently. We found that

the differences in monetary valuation across possession types are not a function of the differences in product evaluations across possession types. Rather, they are a function of the differences in psychological ownership.

Directions for future research

As rental transactions have a periodic payment aspect associated with them, understanding the impact of time could be important. Cumulative rental payments over prolonged periods should intuitively increase psychological ownership. It might be fascinating to test this with rent-to-own contracts that are used to sell houses to lower-income purchasers. However, there could be a tipping point when paying rent for prolonged periods may develop an entitlement toward the rented object, thereby reducing willingness-to-pay. Hence, future research could examine the effects associated with rental transactions over multiple periods.

While we did not specifically examine the impact of usage rate in our experiments (Meyer et al. 2008), expected future usage rate may drive object valuation. It is likely that consumers who are drawn to renting are attracted by the temporary nature of the transaction and have a different usage profile than those that may consider an outright purchase. This area is also interesting, as research shows that owners' WTA depends on the buyers' usage intent (Brough and Isaac 2012).

A final question for future research is how the effect of possession type on object valuation varies by manipulating the three contributing routes of psychological ownership within a specific possession type. As an example, an inherited car may be valued less than one purchased with self-earned money. Or there could be highly complex products (e.g., high tech equipment) where knowledge may be a necessary condition for appropriate control of the object. While we examined the suppression of self-investment and control for renting, many other combinations of inter-route dynamics are possible. By enhancing or suppressing the three routes, many other valuation predictions for different possession types can be proposed.

Managerial implications

The fact that renting leads to higher object valuation has important managerial implications. As renting creates psychological ownership, managers may wish to encourage renting prior to selling. A consumer's rental investment may be a foot in the door, raising valuations. An eventual sale at a higher price is likely to be easier for a formerly rented object, as the former renter may value it more. This is valuable information for both firms wishing to raise WTP, as well as consumers who may want to be wary of rental contracts, fearing that they might encourage them to pay more later.

While lenient product return policies minimize consumer risk (Wood 2001), many firms have return policies that are comparatively restrictive in nature (for example, charging re-stocking fees). As rented products are valued more, marketers' may benefit from framing product re-stocking fees (in categories such as appliances, electronics, etc.) as rent for a trial duration instead. Renting during the trial period should develop greater feelings of ownership. This is in contrast to a re-stocking fee, which is viewed as a penalty, leading to negative attitudinal ramifications for brands (or retailers) when consumers return durables.

If an owner wants to sell a rented object to a renter or wants repeat rental business from the renter, we recommend that the owner institutes relatively mild restrictions on the use of the object and facilitates relatively high self-investment from the renter toward the rented object. If the control and the self-investment routes operate at high levels, the psychological ownership developed toward the object will be higher resulting in repeat rentals, and higher WTP.

Managerial implications of our current research could also extend to other rent and borrow formats such as rent-to-own and borrow-to-own. In rent-to-own contracts that are common in categories such as consumer durables, the renter has an option to purchase the product after the end of the rental duration, and a substantive portion of the rent goes toward part-payment for the eventual purchase of the object (APRO 2016). Although the label borrow-to-own is uncommon, its application is commonly observed in the marketplace. A product sold at zero-down payment (and no-fee return policy for a limited time) is a manifestation of marketplace borrow-to-own transaction, as people can use the product for free for some-time and then decide to buy the product or not.

The penetration rate of rent-to-own transactions is low in the American economy, just .05% (\$8.5 billion) of the US economy in 2012 (APRO 2016, p. 7). It is likely that such rent-to-own transactions are not perceived as fair as a large amount of rent (typically 50%) is not applied toward part-payment. This is relevant, as the perception of fairness is critical for the development of higher psychological ownership (Chi and Han 2008). In light of the current findings, we believe that rent-to-own business models can be much more mainstream if the rental part-payments are perceived as fair. Additionally, using CRM systems to segment customers into tightwads and spendthrifts based on their past purchase behavior seems relevant for rent-to-own companies. Surprisingly, tightwads (relative to spendthrifts) may be more attractive rent-to-own customers, as tightwads have a higher valuation for rented objects.

As valuation of rented objects is high, there is an opportunity for targeted selling of high-value objects (such as aircraft or artwork) to former renters. Another implication for owners is that they may benefit by bargaining harder during rental-

contract renewal negotiations, with the knowledge that the renters are psychologically invested in the property.

While we do not test knowledge differences, another managerial strategy might be to increase renters' and borrowers' knowledge to increase WTP. For instance, Enterprise Car Rental's Exotic Car Rental program offers a Tesla Model-S for rent (Enterprise 2018). If Tesla works with rental agencies such as Enterprise to further develop consumers' knowledge about electric cars, consumers may value them more when considering a later purchase. A similar case in the context of borrowing is Google's Waymo self-driving cars. Waymo is recruiting consumers in Phoenix to be part of its free Early Rider self-driving car program (Waymo 2018). Such a strategy has the possibility of increasing psychological ownership for self-driving vehicles through the knowledge route.

Finally, our findings on borrowing have managerial implications for free product trials. Prior research provides mixed findings regarding the effect of product trials on WTP. While Peck and Shu (2009) suggest that giving a free trial is likely to increase WTP, de Groot et al. (2009) found a negative effect of product trial on WTP. The psychological ownership route based framework suggests that free trials are more likely to lead to higher WTP when possession leads to a significant and positive knowledge, control, or self-investment increase about the object. If product trial does not increase the target's psychological ownership through one or more of the three psychological ownership routes, it is unlikely to result in higher WTP. To illustrate the implication of the preceding point, a gym offering a free trial should encourage the consumer to make a self-investment (a health commitment tied to the gym), to gain some knowledge about the gym (e.g., specific knowledge of the equipment), or a sense of control (e.g., the ability to change the gym TV channel).

Conclusion

To conclude, we demonstrate how and why the non-ownership physical possession types of renting and borrowing impact object valuation. As markets continually evolve new and interesting forms of ownership, as well as other acquisition and possession formats, our work informs the understanding of these novel arrangements.

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