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Picture yourself: Self-focus and the endowment effect in preschool children

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ABSTRACT

When an object comes into possession, the owner will typically think that it is worth more than it did before they owned the item in a bias known as the endowment effect. This bias is particularly robust in Western societies with independent self-construals, but has not been observed in children below 5–6 years of age. In three studies, we investigated whether endowment effect can be induced in younger children by focusing their attention on themselves. 120 children aged 3–4 years evaluated toys before and after a task where they made pictures of themselves, a friend or a neutral farm scene. Over the three studies, children consistently evaluated their own possessions, relative to other identical toys, more positively following the self-priming manipulation. Together these studies support the notion that possessions can form part of an "extended self" from early on in development and that the endowment effect may be due to an attentional self-bias framing.

1. Introduction

Why is psychological ownership so important? In many ways, ownership is part of our individual identity. As James (1890) noted, our sense of self is largely based on our possessions and what we can claim ownership over.

> "A man's Self is the sum total of all that he CAN call his, not only his body and his psychic powers, but his clothes and his house, his wife and children, his ancestors and friends, his reputation and works, his lands and horses, and yacht and bank-account". [James, 1890, p. 291]

Drawing on the work of James, Belk (1988) posited the "extended self" hypothesis that maintains that in individualistic societies, we regard possessions as an extension of self. Of particular interest is our psychological attachment to material possessions that can sometimes lead to practices and beliefs, which reflects the symbolic value we place on objects (Ferraro, Escalas, & Bettman, 2011). From the earliest examples in pre-history where the deceased were buried with their possessions, to conspicuous consumption in modern consumer behaviour, Belk considers possessions as central to the concept of self.

Our possessions thus serve as ostensive markers for self-identity. When we take possession of objects they become "mine" - my coffee cup, or my telephone. This is one reason why ownership plays an important role in social development. Initially infants do not exhibit a coherent sense of ownership for material possessions other than the sentimental objects such as blankets and teddy bears that are considered unique and irreplaceable (Hood & Bloom, 2008). In the case of non-sentimental objects, children start to identify owners of familiar objects between 18 and 24 months of age (Fasig, 2000) and soon after begin to use possessive pronouns like "mine" and "yours" (Hay, 2006). Young preschoolers already understand different rules of ownership (Friedman & Neary, 2008; Kanngiesser, Gjersoe, & Hood, 2010) and their normative implications (Rossano, Rakoczy, & Tomasello, 2011). Importantly, Levine (1983) has argued that the emerging sense of self is accompanied by increased use of personal pronouns and ownership expressions of "mine" related to objects.

The developing relationship between self-identity and possessions may also explain "one of the most important and robust empirical regularities" of economic behaviour (Loewenstein & Issacharoff, 1994) namely the "endowment effect" (Thaler, 1980). In a classic study, one group of students were given mugs and asked if they would like to trade for a chocolate bar. In a second group of students the allocations were reversed. Very low trading rates were observed in both groups (~10%), despite both objects being equally attractive (Knetsch, 1989), demonstrating that

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ownership of an object increases our subjective valuation of it. This effect has been replicated numerous times and manifests both as a reluctance to trade and as a difference between buying and selling prices (Bar-Hillel & Neter, 1996; Carmon & Ariely, 2000; Hoorens, Remmers, & van de Riet, 1999).

Economists commonly consider the endowment effect to be a violation of standard rational choice theory and the manifestation of a "loss aversion" bias because sellers should ignore ownership when trading for equally valued items (Kahneman & Tversky, 1979). However, a recent review of the endowment effect has shown that it can no longer solely be attributed to a traditional loss aversion account (Morewedge & Giblin, 2015). When owners and buyers are considering transactions there are a multitude of factors that enter into the decision-making process including the positive and negative features of the goods, transaction utility, the cost of new or used alternatives, opportunity costs and non-transferrable associations.

One of the key factors of non-transferable associations is psychological ownership, which is consistent with the "extended-self hypothesis" whereby objects are valued because of the association they have with the owner (Belk, 1988). Attempting to disentangle the competing accounts of loss aversion and extended-self, Morewedge, Shu, Gilbert, and Wilson (2009) compared values of mugs given by sellers, buyers who already owned an identical mug, and buyers who did not. They demonstrated that the endowment effect disappeared when a buyer already possessed an identical mug, indicating that the endowment effect was not due to loss aversion and was more consistent with an extended-self account. This could arise from a mechanism whereby evaluations of possessions depend on evaluations of the self (Gawronski, Bodenhausen, & Becker, 2007; Weiss & Johar, 2013). The bias may also reflect cultural norms regarding self-identity and possessions, as East Asian students were found to have smaller endowment effects than Western students – an effect that could be mimicked by priming students with independent or interdependent self-focus (Maddux et al., 2010).

These cultural effects implicate a role for developmental processes in shaping how much we value our possessions. Western children as young as two years will indicate that they like toys allocated to them best – even when identical objects owned by an adult or no-one are available (Gelman, Manczak, & Noles, 2012). Yet, the endowment effect as assessed through trading biases, when children are reluctant to swap for an equally attractive alternative, does not appear in Western children until 5–6 years of age. Although the one study of the endowment effect in children did not look at preschool children (Harbaugh, Krause, & Vesterlund, 2001), we have previously tried unsuccessfully to establish the presence of the endowment effect in younger children (Kanngiesser, 2012). Thus, while a preference for possessions may be observed in preschoolers, previous studies have not yet demonstrated that this preference is an endowment effect which manifests as increased valuation and can be attributable to psychological ownership.

Given evidence that explicit manipulations of self-focus have dramatic effects on adults' valuation of possessions from different cultural backgrounds (Maddux et al., 2010), we wanted to investigate whether self-focus manipulations would be effective in young preschoolers and influence their evaluation of objects. In the present set of studies, motivated by the Belk's extended-self hypothesis, we adapted the self-construal paradigm for adults (Maddux et al., 2010) into one suitable for preschool children using a simple picture construction task that either focused the child's attention on themselves, others or on a neutral farm scene. Our reason for using a portrait construction manipulation was based on two lines of evidence. First, mirrored reflections have been shown to trigger self-focus and conscientiousness in both adults and children (Beaman, Diener, & Klentz, 1979; Diener & Wallbom, 1976). Second, in adults, constructing an online avatar leads to increased self-focus and the closer the resemblance of the avatar, the more the self-focus (Vasalou, Joinson, & Pitt, 2007). We reasoned that as children lack the prerequisite manual skills for drawing a self-portrait, constructing an avatar using Velcro segments was a reasonable method to generate self-focus. The selection of a friend or sibling for the other portrait task was based on the adult study where interdependence was focused by asking participants to write about friendships and camaraderie (Maddux et al., 2010).

We measured relative changes in object evaluation using a five-point rank liking-scale and determined whether there were any consistent changes in evaluation from the point in time before a toy was allocated to after the child had completed the picture construction task. Although the adult endowment effect studies have used monetary value as a dependent measure, preschoolers do not understand concepts of financial worth which makes this measure inappropriate for our sample (Berti & Bombi, 1981). We reasoned that evaluation based on liking was a proxy for children's value judgments.

Children evaluated (1) their own toy, (2) an identical toy belonging to the experimenter (or no-one) and (3) a control object. We chose to use identical objects because we wanted to avoid individual biases towards different toys. This also sets up the studies to be the most stringent test of the endowment effect possible (i.e., it could not be attributed to the objects' surface properties). Although identical objects should have equal value, we have previously shown that 5-year-olds will value identical goblets differently depending on whether they believe the object to have a previously famous owner (Hood & Bloom, 2008).

We also included a trading measure (similar to Harbaugh et al., 2001) and offered children the opportunity to swap for the experimenter's (or no-one's) identical toy. Preschoolers are noted for their reluctance to share and so we expected that this may manifest in their resistance to trades unless they had been induced to think about others. Unlike previous studies, trades were real rather hypothetical scenarios involving temporary lending (Diesendruck & Perez, 2015).

We hypothesized that self-focus following the picture completion task would produce a significant increase in the valuation of toy allocated to the child more so than an other-focus and a neutral farm completion task. Furthermore, we predicted that any self-focus effects would be specific to the child's owned toy and not for the experimenter's nor the control toys. We also expected that children would be more reluctant to trade after completing the self-focused task compared to the other-focused task.

2. Study 1

2.1. Material and methods

2.1.1. Participants

Each condition contained 20 UK children. This sample size was based on pilot studies conducted in Norway by the second co-author as part of a student project to establish the liking-scale methodology. Comparing the change in valuation of a toy allocated to the child in the self-focus condition with the other condition produced a large effect size (d = 0.852). We calculated that if we ran an equivalent study, we would need a sample size of 18 or more per group to have sufficient power (0.8 or greater).

Study 1 had three conditions (self, other, neutral) requiring 60 three-to-four-year-olds (M_{age} = 48.38 months, SD = 6.03, range = 37–57 months; 30 female). Eight additional children were tested but excluded from analysis because they (a) failed to pass the initial trading controls (n = 2), (b) failed to understand the