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# Picture Yourself: Self-Representation and the Endowment Effect In Pre-School 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.

*Keywords:* self-priming, ownership, endowment effect, extended self

## **1. Introduction**

For many of us, our sense of self-worth is a reflection of the opinions and attitudes that we perceive others hold towards us. In 1902, American sociologist Charles Horton Cooley captured this notion of identity when he coined the term, “the looking glass self” to express the way that the self is shaped by the reflected opinions of others around us. These opinions regarding the self are often influenced by perceived sense of worth and it was William James (1890) who first articulated that self-worth is largely based on what we own.

Drawing on the work of James and Cooley, Belk (1988) posited the “extended self” hypothesis that maintains we seek objects and relationships to signal our self-worth to others. Arguably, the extended status of persons, places and things is largely determined by what others consider is worth having. We covet and prefer artifacts such as designer clothing or unique works of art not simply because of their aesthetics or functional utility but also because of their perceived value by others (Bloom, 2010). By owning desirable objects we bolster our own self-esteem. This impetus to own desirable objects emerges early in development. About 75% of preschooler’s conflicts with peers revolve around the possession of objects (Shantz, 1987) and toys are more coveted amongst children when they have been touched or named by another child which is consistent with the hypothesis that ownership is operating as a status mechanism (Hay & Ross, 1982).

Our possessions 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 - 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 (Kanngiesser et al., 2010; Friedman & Neary, 2008) and their normative implications (Rossano et al., 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 self-esteem 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 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 (Hoorens et al., 1999; Carmon & Ariely, 2000; Bar-Hillel & Neter, 1996).

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, an alternative account is the “extended-self hypothesis” where objects are valued because of the association they have with the owner (Belk, 1988). This may be a process of self-anchoring whereby evaluations of possessions depend on evaluations of the self (Gawronski et al., 2007). On average, as most people are likely to hold a positive self image,

this may explain why they are more inclined to over-value personal possessions as a correlate of a general positive self-image (von Hippel & Trivers, 2011).

Attempting to disentangle the competing accounts of loss aversion and extended-self, Morewedge & colleagues (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. 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-construals (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 et al., 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 to 6 years of age (Harbaugh et al., 2001). Equally at this age, a recent study showed that negative and positive self-esteem manipulations influenced how reluctant children said they were to lend their favorite possession to another child (Diesendruck & Perez, 2015). Thus, while a toddler's liking of their own possessions may be explained by factors such as familiarity, valuation of possessions (as measured by actual reluctance to trade or hypothetical lending scenarios) does not emerge until the late preschool/early school years. These findings indicate that cultural manifestations of self-concepts may begin to become relevant during this time.

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 scene. 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. Children evaluated 1) their own toy, 2) an identical toy belonging to the experimenter (or no-one) and 3) a control object. 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 primed to think about others. Unlike previous studies, we did not ask which toy they preferred as we believed this could have been confounded with adult allocation (Gelman et al., 2012), and 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 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.

## **2.1 Study 1**

### **2.2 Material and Methods**

**2.2.1 Participants.** Each condition contained 20 UK children based on pilot studies conducted in Norway by the second co-author as part of a student project to establish the liking-scale methodology. A comparison of 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 ( $d = .852$ ). 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 (.8 or greater). However, that pilot work did not include a third neutral condition for comparison, which was equivalent in nature but where there was no focus on either self or other. Thus a third neutral condition group were included.

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 pre-test scale measure ( $n=5$ ), or (c) failed to pass the equality test ( $n=1$ ). Parents gave written, informed consent prior to the start of the study. All children were tested individually in quiet rooms.

**2.2.2 Design.** The study employed a mixed design with picture-focus (self, other, or neutral) as a between subjects factor and toy owner (child or experimenter) as a within subjects factor. Twenty children were randomly assigned to each picture-focus condition. Order of valuation of child's and experimenter's toys was counterbalanced across participants. The dependant variable was the change in valuation of child's and experimenter's toys following item endowment and picture construction.



### **2.3 Procedure**

Each session started with trading-control trials to check children's ability to trade or to inhibit trading where appropriate. In trading trials, the child was allocated a scrap of paper and asked if they would like to keep the paper or swap for a sticker (the reverse allocation was used for non-trading trials). The order of trading and non-trading trials was counterbalanced. If children failed the initial control trials, they were given two additional trading, and non-trading trials, respectively.

Next, the children were familiarized with a five-point "smiley-scale" that was used to assess the relative worth of objects throughout the study. The scale consisted of five card faces attached to a board with Velcro, with expressions ranging in valence from very happy to very unhappy. The experimenter explained each of the five expressions, removed the faces from the board and randomly placed them in front of the child. The experimenter attached the most unhappy face on the scale, and asked the child to rebuild the scale independently. If necessary, the experimenter gave one more demonstration. Only children who passed the trading controls and the smiley scale familiarization took part in the study.

Following this, the experimenter placed a set of five scale-training-objects on the table, consisting of an unattractive object (a scrap of paper), a neutral toy, two identical spin-top toys and a highly attractive toy. First, the experimenter demonstrated rating of the objects by using the smiley scale and explaining her decisions ("I like this toy the best, I'll put it on the most happy face"). The child was then asked to rate a new set of five objects, again including an unattractive object, a neutral toy, a highly attractive toy, and two identical spin-top toys (later used in the endowment test). Children who failed to show an understanding of the rating system (for example stating: "I do not like this toy", but placing it on a happy face) or children who failed to rate the identical toys equally were excluded.

The initial valuation of the spin-top toys was recorded. The identical spin-top toys were then used as endowment objects: one was given to the child (“This is yours now. You get to keep it”) and the other was kept by the experimenter (“This is mine. I get to keep this one”). Both toys were then placed in view, but out of reach, on the table. Next, the child participated in one of three picture construction conditions: self-focus, other-focus, or a neutral control condition.

In each picture task, the child was told to construct a picture using a standard set of materials: a background template (either a human figure for self- and other- focus or a farm scene for the neutral focus), and a number of Velcro-accessories. In the *self-focus* condition, children made a picture of themselves and were encouraged to select their hair style, their clothes and their toys from the accessories, to further focus the child’s attention on her/his self, the experimenter used personal pronouns ‘you’, ‘your’ and the child’s name whenever apt. In the *other-focus* condition, the child made a picture of their best friend or sibling using the same accessories used in the self-focus condition. To focus the child’s attention on others, the experimenter used the personal pronouns ‘he/she’, ‘his/her’ and the friends/siblings’ name whenever apt. In the *neutral-focus* condition, children were encouraged to make a picture of a farm by adding the farm animals to the picture. The experimenter was careful to avoid use of personal pronouns.

Following the picture construction task, the child was asked to value the experimenter’s toy, the neutral toy and their own toy once again using the smiley scale. The order of these ratings was counterbalanced across participants. Finally, the child was asked whether they wanted to keep their toy or swap for the experimenter’s toy.

**2.3.1 Data scoring and preliminary analyses.** Children’s valuations and trading behaviour were coded from videotape. Children’s valuation of the two identical spin-top toys

and the neutral toy on the five-point smiley-scale were scored from 1 for the most unhappy face to 5 for the most happy face. Initial valuations of the spin-top toys were always equal but to account for differences in initial valuations between participants, we calculated value-change-scores for each of the three toys by subtracting the initial valuation from the final valuation for each toy (positive value-change-scores indicating an increase in value, a zero score indicating no change).

Preliminary analyses showed that time spent on the picture construction task did not differ significantly across conditions ( $F(2, 57) = .36, p = .70, \eta_p^2 = .01, M_{self} = 223.60s, 95\% CI_{self} = [212.30, 234.90]; M_{other} = 229.70s, 95\% CI_{other} = [218.40, 241.00]; M_{neutral} = 230.85s, 95\% CI_{neutral} = [219.55, 242.15]$ ). In addition, the numbers of personal pronouns used during self- and other-focus did not differ significantly, ( $t(38) = .31, p = .76, d = .01, M_{self} = 33.30, 95\% CI_{self} = [32.17, 34.43]; M_{other} = 33.05, 95\% CI_{other} = [31.92, 34.18]$ ).

## **2.4 Results**

We found a significant interaction between picture construction condition and toy owner ( $F(2, 53) = 4.83, p = .01, \eta_p^2 = .15$ ). Specifically, following self-focus, children increased the value of their own toy ( $M = .95, 95\% CI = [.38, 1.52]$ ) but not the experimenter's toy ( $M = -.07, 95\% CI = [-.74, .59], t(19) = 3.56, p = .01, d = 0.81, Bonferroni corrected$ ). The opposite pattern of responses were observed in the other-focus condition, in which children valued the experimenter's toy higher ( $M = .86, 95\% CI = [.20, 1.51]$ ), but not their own toy ( $M = .17, 95\% CI = [-.39, .73]$ ) - although this effect was not statistically significant ( $t(19) = -1.61, p = .36, d = 0.48, Bonferroni corrected$ ). We found no significant main effects of types of picture type ( $M_{self} = .44, 95\% CI_{self} = [-.04, .91], M_{other} = .51, 95\% CI_{other} = [.04, .98], M_{neutral} = .80, 95\% CI_{neutral} = [.32, 1.28], F(2, 53) = .61, p = .55, \eta_p^2 = .02$ ) or toy owner ( $M_{child} = .67,$

95% CI  $_{child}$  = [.34, .99],  $M_{experimenter}$  = .50, 95% CI  $_{experimenter}$  = [.12, .89],  $F(1, 53) = .55$ ,  $p = .46$ ,  $\eta_p^2 = .01$ ).

There was no significant effect of toy owner in the neutral-focus condition ( $M_{child} = .89$ , 95% CI  $_{child}$  = [.31, 1.46],  $M_{experimenter} = .71$ , 95% CI  $_{experimenter}$  = [.04, 1.38],  $t(19) = .48$ ,  $p = .64$ ,  $d = 0.13$ ). The mean value change scores for each condition as a function of toy owner are presented in Figure 1. A significant effect of age was observed ( $F(1, 53) = 7.68$ ,  $p = .01$ ,  $\eta_p^2 = 0.13$ ), indicating that older children increased their valuations more than younger children regardless of toy owner or picture condition. No significant effect of gender ( $F(1, 53) = .46$ ,  $p = .50$ ,  $\eta_p^2 = .01$ ), and no significant interactions involving gender or age were observed ( $F_s < 2.69$ ,  $p_s > .11$ , etc.).

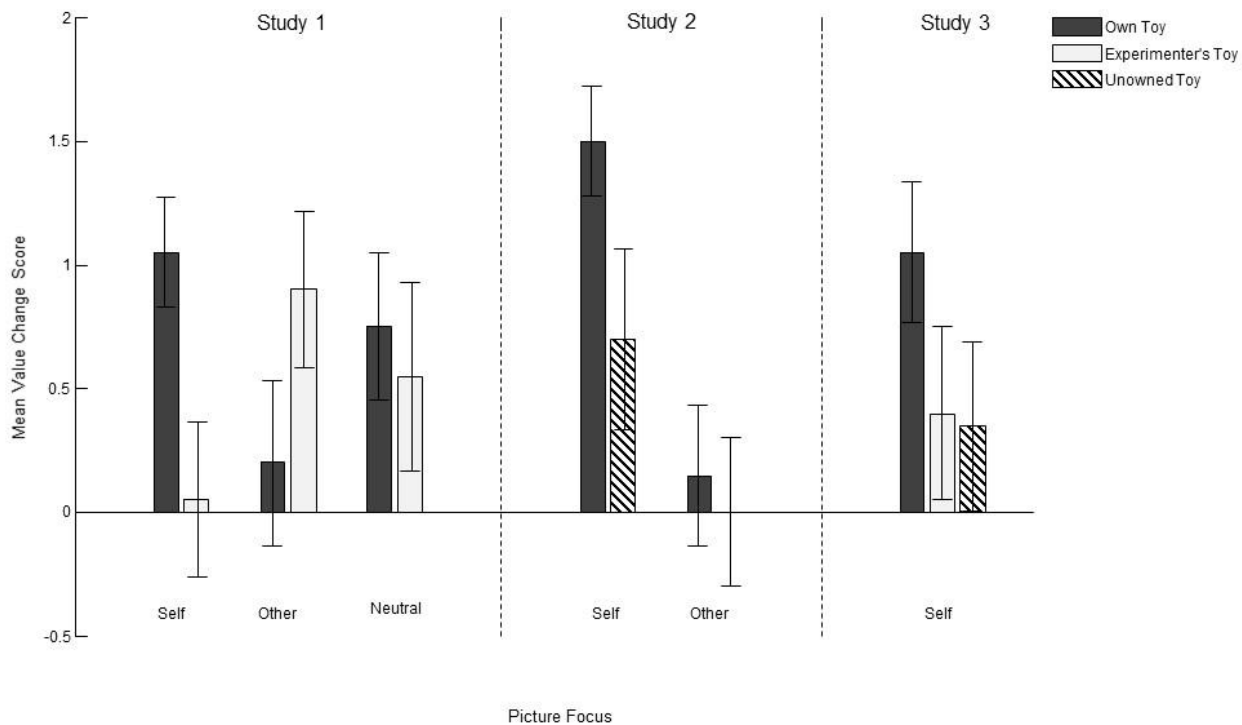


Figure 1: Mean value change scores for each object as a function of prime type. Error bars represent  $\pm 1$ SEM.

Value changes for an unowned control object were also assessed in the three picture construction conditions to ensure that the picture focus manipulation had a specific effect on endowment objects, rather than a general effect on children's object valuation. An ANCOVA showed no significant effects of picture construction condition ( $F(2, 53) = .43, p = .70, \eta_p^2 = .29$ ), gender ( $F(1, 53) = 1.71, p = .33, \eta_p^2 = .47$ ), or age ( $F(1, 53) = 1.10, p = .30, \eta_p^2 = .02$ ) and no significant interactions between these variables on value change scores for the control item. This indicates that picture focus did not generally affect children's valuation of objects, but was specific to the endowment objects.

Children's reluctance to trade their endowed toy for the experimenter's identical toy was compared across the three picture construction conditions. Seventeen children (85%) were reluctant to trade after self-focus, 8 children (40%) after other-focus, and 16 children (80%) after neutral focus (see Figure 2). Children's trading behaviour differed significantly across the three conditions ( $\chi^2(2, N=60) = 11.24, p = .004, \phi = .43$ ). Pairwise comparisons confirmed that children were less willing to trade following self-focus and neutral-focus compared to other-focus (self:  $Z = -2.90, p = .004$ ; neutral:  $Z = -2.55, p = .01$ ) but there was no difference in reluctance to trade between self- and neutral-focus conditions ( $Z = -.41, p = .68$ ). These findings suggest that children were reluctant to give up items in their possession and only after other-focus did trading rates increase.

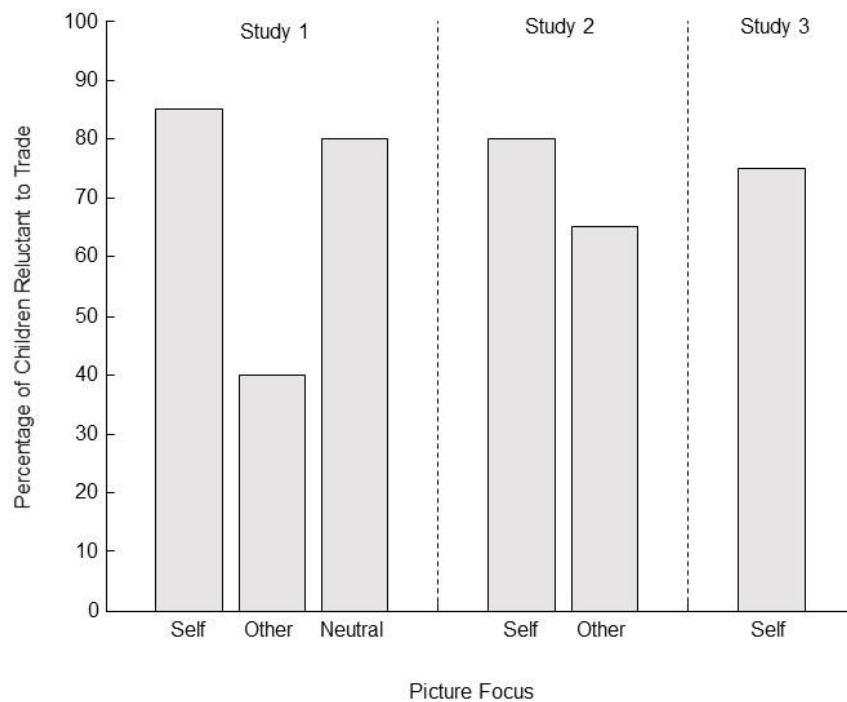


Figure 2: Percentage of children reluctant to trade their object for an identical object as a function of prime type.

Following self-focus, the value of a child's own toy increased in comparison to an identical toy owned by the experimenter. Children were also less willing to trade toys in this condition. As predicted, completing a self-focused activity can induce increased valuation of own possessions in young children, lending support to the extended-self explanation of endowment effects. In the other-focus condition, although the value of the experimenter's toy did not increase significantly, children were more willing to trade their toy for the other. Children may have been inclined to swap with the experimenter because the other-focus activity may have alerted them to another's needs so that when a specific other proposed a trade, they were inclined to oblige.

### **3.1 Study 2**

Study 2 aimed to test whether the changes in object valuation following self- and other-focus as well as the differences in children's trading behaviour were influenced by the fact that the other object was owned by the experimenter. We thus tested a new sample of pre-schoolers and included an unowned object as comparison. As there were no effects in the neutral focus condition, it was not included in Study 2.

### **3.2 Materials and Method**

**3.2.1 Participants.** 40 three-to-four-year-olds ( $M_{age} = 47.28$  months,  $SD_{age} = 6.49$ , range = 36- 58 months; 21 female) participated in Study 2. None of these participants had previously completed Study 1. Three additional children were tested but excluded from analysis because they failed to understand the smiley-scale ( $n=1$ ), or failed to pass the equality test ( $n=2$ ).

### **3.3 Procedure**

The procedure was identical to study 1, with the exception that the identical spin-toy was not labelled as belonging to the experimenter, but was simply left on the table (in the child's view but out of its reach). In addition, children only completed either the self- or other- focus picture construction task (no neutral focus).

**3.3.1 Data scoring and preliminary analyses.** Data scoring and analyses were identical to study 1. The amount of time spent on the picture construction task was calculated from the video data. Unfortunately this information was not available for 3 children in the self- and 2 children in the other-focus conditions due to experimenter error. Time spent on the picture construction task in the remaining 35 children did not differ significantly between self- ( $M = 228.53$ , 95% CI = [216.28, 240.78]) and other- ( $M = 231.11$ , 95% CI = [219.20, 243.02]) picture types ( $t(33) = .36$ ,  $p = .72$ ,  $d = .12$ ). The number of personal pronouns used

within each picture type showed no significant difference ( $M_{\text{self}} = 33.24$ , 95% CI = [32.01, 34.46];  $M_{\text{other}} = 33.50$ , 95% CI = [32.31, 34.69], ( $t(33) = .30$ ,  $p = .76$ ,  $d = .10$ ).

### **3.4 Results**

Children who completed the self-focus task increased the value of both identical objects more ( $M = 1.13$ , 95% CI = [.59, 1.68]), than children who completed the other-focus task ( $M = .06$ , 95% CI = [-.49, .60],  $F(1, 35) = 7.89$ ,  $p = .008$ ,  $\eta_p^2 = .18$ ). In addition, children increased the valuation of their own object ( $M = 0.83$ , 95% CI = [.45, 1.21]) more than their valuation of the unowned object ( $M = 0.36$ , 95% CI = [-.12, .85],  $F(1, 35) = 4.97$ ,  $p = .03$ ,  $\eta_p^2 = .12$ ). In contrast to Study 1, the interaction between ownership and picture type was not significant ( $F(1, 35) = 1.71$ ,  $p = .20$ ,  $\eta_p^2 = .05$ ). However, a planned comparisons t-test confirmed that children continued to increase the value of their own object more than that of the identical, unowned object following self-focus ( $t(19) = 2.71$ ,  $p = .01$ ,  $d = .55$ ; see Figure 1). No other factors or interactions were statistically significant. Value change scores for the control, unowned object, were not significantly affected by picture type ( $F(1, 35) = .11$ ,  $p = .79$ ,  $\eta_p^2 = .10$ ), gender ( $F(1, 35) = .05$ ,  $p = .86$ ,  $\eta_p^2 = .05$ ), or age ( $F(1, 35) = .29$ ,  $p = .60$ ,  $\eta_p^2 = .01$ ). Finally, 16 children (80%) refused to swap their toy following self-focus and 13 (65%) refused to swap following other-focus (see Figure 2). The difference in swapping behaviour between picture types was not significant ( $\chi^2(1, N=40) = 1.13$ ,  $p = .48$ ,  $\phi = .17$ ).

The findings from Study 2 replicated the effects observed in Study 1 following self-focus. This time other-focus did not produce increased valuation of an unowned, identical object and swapping behaviour was also reduced, indicating that ownership is necessary for the endowment reversal following other-focus reported in Study 1. However, the main effect of picture type in Study 2 suggested that self-focus raised the value of the unowned object as well as the value of the owned object. One possibility for this pattern was that in the absence



of ownership, the value of the identical, unowned object was anchored to the self-owned object in the self-focus condition.

### **4.1 Study 3**

So far our findings suggested that attention focus affected children's object valuations differently depending on the object's ownership. Yet, our studies only contrasted self- vs. other-owned (Study 1) or self-owned vs. unowned (Study 2), so in Study 3 we set out to directly compare the effects of self-focus on self-owned, other-owned and unowned objects within-subjects.

### **4.2 Materials and Method**

**4.2.1 Participants.** 20 three-to-four-year-olds ( $M_{age} = 49.40$  months,  $SD = 5.54$ , range = 40- 58 months; 10 female) participated in Study 3. None of these participants had previously completed Study 1 or Study 2. Three additional children were tested but excluded from analysis because they failed to understand the smiley-scale ( $n=2$ ), or failed to pass the equality test ( $n=1$ ).

### **4.3 Procedure**

The procedure for Study 3 was identical to the previous studies except there were three identical spin-top toys. One was allocated to the child, one to the experimenter, and the third object remained unallocated. In addition, children only completed the self-focus task before being asked to value the three items in a counterbalanced order once again. Finally, the child was asked if they would like to keep their toy or swap for the experimenter's toy.

**4.3.1 Data scoring and preliminary analyses.** Once again, the amount of time spent on the picture construction task ( $M = 232.00s$ , 95% CI = [220.70, 243.30]) and the number of personal pronouns used during the task ( $M = 33.70$ , 95% CI = [32.57, 34.83]) was recorded from video and did not differ significantly from any of the picture construction tasks used in

Studies 1 or 2 (time:  $F(5, 109) = .28, p = .92, \eta_p^2 = .01$ ; pronouns:  $F(4, 90) = .19, p = .94, \eta_p^2 = .01$ ).

#### **4.4 Results**

Children's valuation changes for three identical objects was significantly moderated by ownership ( $F(2, 34) = 3.41, p = .045, \eta_p^2 = .17$ ). Bonferroni corrected, paired samples t-tests revealed that children increased the value of their own item ( $M = 1.10, 95\% \text{ CI} = [.42, 1.68]$ ) more than the unowned item ( $M = .35, 95\% \text{ CI} = [-.41, 1.11], t(19) = 2.77, p = .04, d = .49$ ). However, the value increase for their own item compared to the experimenter's item ( $M = .40, 95\% \text{ CI} = [-.38, 1.18]$ ) was only trending in significance ( $t(19) = 1.99, p = 0.06, d = .45$ ). There was no difference in value change scores between the experimenter's and the unowned item ( $t(19) = .18, p = 0.86, d = .03$ ). No main effect of gender ( $F(1, 17) = .01, p = .89, \eta_p^2 = .001$ ) or age ( $F(1, 17) = .08, p = .79, \eta_p^2 = .004$ ) and no interactions with gender or age were significant. Fifteen children (75%) refused to swap their toy for the experimenter's toy at the end of Study 3. This is comparable with the swapping data from self-focus conditions in Studies 1 and 2 ( $\chi^2(2, N=60) = .63, p = .92, \phi = .10$ ).

Overall, Study 3 replicated the increase in valuation for owned toys following self-focus and showed that this effect was specific to the child's own object. In this repeated measures design we also demonstrated that self-focus did not change the way in which other-owned and unowned objects were valued.

## **5. General Discussion**

Following from self identity perspectives inspired by James (1890) and Cooley (1902), we sought to investigate the relationship between self-focus and object evaluation in preschool children in three studies using a novel picture construction task. Our results were consistent with the “extended self” hypothesis (Belk, 1988) in that self-focus led to an increased evaluation of own possessions as compared to another’s or no-one’s (identical) possession across all three studies. Manipulations of self-focus are thus not only successful in changing adults’ perceptions of an object’s value (e.g., Maddux et al., 2010), but also effective in young children.

Unlike previous studies of preschoolers assessing object preferences (Gelman et al., 2012), we developed a scaling measure to assess relative changes in perceived liking before and after the attention focus manipulation to test the hypothesis that self-focus *increases* the subjective liking of possessions. We believed this was a critical point in establishing a change in relative worth that was triggered by a cognitive bias rather than a preference associated with the protocols related to allocation by adults; or in colloquial parental words, “You’ll like what you’re given, or have nothing.” One recent integrative account of the endowment effect includes attentional and memory biases which explains not only the size of the endowment effect, but mitigation of the endowment effect when individuals are directed to consider frame consistent and inconsistent information (Morewedge & Giblin, 2015). For example, attentional biases directed towards objects are triggered as soon as the object comes into possession leading to enhanced memory for possessions relative to non-possessions (Turk et al., 2011). We believe that our self-focus picture task operates on children through a consistent self-framing effect. Moreover, it is unlikely that our self-focus manipulations lead to changes in object valuation via generalized positive effects on raising children’s self-

esteem (Diesendruck & Perez, 2015) as children received positive appraisal in all picture construction tasks.

Focusing on others during the picture construction task led to an increase in valuation of other's possessions (and a decrease in valuation of self-owned possessions) as well as to increases in trading rates. Usually, there is a tendency in children of this age to hold onto their possessions and not share resources. For example, in the dictator game, young children have a tendency to maximize self-gain and it is not until they are five years and older that they begin to share resources equally (Gummerum et al., 2010; Blake & Rand, 2010). Less than 10% of three- to four-year-olds will maximize another's resources even when there is no cost to sharing (Fehr et al., 2008). Focusing young children's attention on others may ameliorate these effects and counteract young children's self-maximizing tendencies.

Throughout our studies, we used identical objects for evaluation and trading. However, classic studies on the effect of object endowment and ownership have used non-identical, but equally preferred objects. In violation of standard theory of choice, reluctance to trade endowed objects has been reliably observed in adults and children over six years of age in these non-identical situations (Harbaugh et al., 2001; Thaler, 1980). We found in our study that young children's default for trading identical objects (i.e. their trading in the neutral-focus condition) was to refrain from swapping their object. It is possible, however, that children refrained from trading not because of endowment effects but because trading involved a small cost. In fact, one adult study that modulated the similarity between objects for trading found that subjects were only willing to trade for an identical item, when they were compensated with financial incentive for trading costs (Chapman, 1998).

We believe that the use of identical items is very important for an object evaluation measure as it eliminates noise from individual preferences. Systematic differences in how

identical objects are evaluated are a clear indication that these effects are not due to superficial object properties but to the effectiveness of the self- or other-focus task. Previously young children have shown discrimination between identical objects using duplication scenarios where they are led to believe that a scientific machine can copy any physical object (Hood & Bloom, 2008). In one version, children valued a metal goblet that was said to belong to Elizabeth II more than an identical duplicate that was created by the machine, but they regarded the two goblets of equal value if the original was unowned. By five years, children are already sensitive to provenance in object evaluation, which is consistent with the extended self perspective. This of course, remains with us as adults when comes to the value that we place on original works of art or memorabilia.

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