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How much are Harry Potter's glasses worth? Children's monetary evaluation of authentic objects

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Abstract

Adults attach special value to objects that link to notable people or events – authentic objects. We examined children's monetary evaluation of authentic objects, focusing on four kinds: celebrity possessions (e.g., Harry Potter's glasses), original creations (e.g., the very first teddy bear), personal possessions (e.g., your grandfather's baseball glove), and merely old items (e.g., an old chair). Children ages 4–12 years and adults ($N = 151$) were asked how much people would pay for authentic and control objects. Young children consistently placed greater monetary value on celebrity possessions than original creations, even when adults judged the two kinds of items to be equivalent. These results suggest that contact with a special individual may be the foundation for the value placed on authentic objects.

As adults, we evaluate objects based in part on what we know about their history. Thus, a family heirloom has special significance, a rock from the moon is placed on display in a museum, and a set of golf clubs once owned by John F. Kennedy is considerably more valuable than a set of golf clubs purchased at the local pro shop. This tendency to judge objects based on their history is a powerful example of how human concepts reflect not just salient and visible perceptual features but also non-obvious qualities. Further, these judgments are not strictly a rational reflection of market value but may reflect beliefs in a sort of contagion, whereby some qualities of an original owner might “rub off” onto the possessed object, and thence to a new owner (Nemeroff & Rozin, 2000; Rozin, Nemeroff, Wane, & Sherrod, 1989).

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Prior research demonstrates that adults display robust effects of an object's history in determining its monetary value and its appropriateness for being displayed in a museum, as well as their desire to own or touch the object (Frazier, Gelman, Wilson, & Hood, 2009). Examples of types of authentic items that adults judge as more valuable include those with a famous owner (e.g., handwritten Beatles lyrics), those from a famous event (e.g., dishes from the Titanic), those with a personal history (e.g., grandmother's engagement ring), those from a distant past (e.g., ancient coin), those from a distant location (e.g., a rock from the moon), and original items (e.g., very first teddy bear). In all of these cases, authenticity rests in the history of the item, not its current physical properties. That people not only judge these items as more valuable, but also wish to own or even touch these items, argues that they are not making a calculated economic judgment but feel a special pull toward these items, perhaps consistent with belief in contagious effects. Consistent with this interpretation, Newman, Diesendruck, and Bloom (2011) found that contagion beliefs—not just associations or market demands—account for adults' greater evaluation of authentic objects.

A critical question concerns the origins of authenticity beliefs, including when they emerge in development. However, we know of only two published papers examining children's authenticity beliefs (Frazier & Gelman, 2009; Hood & Bloom, 2008). In one set of studies, Frazier and Gelman (2009) found that children 4–10 years of age show effects of authenticity when asked to judge which objects belong in a museum. Preschoolers exhibited a significant tendency to report that celebrity possessions (such as a rubber ducky owned by Ernie, from the television show *Sesame Street*) belong in museums. By kindergarten age, children reported that original creations (such as the very first teddy bear) belong in museums, and by fourth grade, children reported that personal possessions (such as their own baby blanket) belong in a museum.

Although museum judgments demonstrate that authentic objects are viewed as special in some way, they leave open the question of why. Children may have learned, for example, that old objects belong in museums, but not accord them added value. Indeed, museum judgments appeared to be distinct from preferences, as children typically indicated that they would rather have a brand-new item than the authentic item (Frazier & Gelman, 2009). Work that speaks more directly to the issue of evaluation was an ingenious study conducted by Hood and Bloom (2008), who asked British children to indicate their personal preferences regarding a toy from home or an exact duplicate of that toy. Children were queried about either an attachment object (e.g., a stuffed toy they sleep with) or another toy. By 4 years of age, children who possessed an attachment object preferred to retain it (i.e., the original toy), whereas children who did not possess an attachment object showed a slight preference for the duplicate. Of course, these personal preferences do not necessarily indicate generalized value, and children who prefer to keep their attachment object may or may not judge the object to be worth more to others. However, Hood and Bloom also conducted a second study, in which children averaging 6.5 years of age were asked to indicate object "worth", using counters (from 0–10). When the key item (goblet or spoon) was described as having been owned by the Queen of England, they judged the original item as having greater value than the duplicate; no such difference was obtained for a comparison

object that had no special history. These results imply that object history is crucial to children's evaluations of objects, at least by 6.5 years of age.

The present studies

The present studies were designed to address a key question that remains unresolved from prior research: How do children evaluate different kinds of authentic objects? Past research on authenticity has examined *either* object value *or* different kinds of authentic objects, but not both. The question of how different types of authentic objects are valued relative to one another is important because it can potentially reveal *why* authenticity is valued. There are at least three distinct explanations for why children accord higher value to a celebrity possession (e.g., a goblet owned by the Queen of England), including: essentialist contagion, positive association, or interesting history.ⁱ The contagion account is that people view some aspect of the famous individual as having “rubbed off” onto the object --as if the Queen's self or essence were somehow inserted into her goblet. This is an essentialist interpretation. The positive association account is that people like the famous person and therefore have a positive response to anything associated with that person, such as an owned possession. Finally, the interesting history account suggests that any unusual or distinctive history increases the value of an object. So on this account, the Queen's goblet is valuable just because it was used by the Queen (or belonged to her), and not necessarily because it assumed her essence.

Prior work by Johnson and Jacobs (2001) provides tentative support for the essentialist account. Children (ages 4–5 and 6–8 years) and adults were asked about a sweater that had been worn by Mr. Rogers, the beloved host of a children's television program. Most adults and some older children reported that wearing Mr. Rogers's sweater would lead to behavior and emotion changes that would make them more like Mr. Rogers (e.g., acting friendlier), and might even lead to a transfer of essence (the sweater will pass “something of Mr. Rogers” to its wearer). Although intriguing, this result is an unpublished report regarding a single item. Therefore, additional evidence is required in order to make inferences regarding why items owned by a celebrity are viewed as more valuable.

In the present studies, we trained children to make monetary judgments, and then asked them to assess the value of a range of authentic and inauthentic objects. We asked participants to rate the monetary value of objects to “people” (in general), not to the self, in order to assess not participants' own preferences but rather their beliefs about the more general, conventionalized value of these objects. In Study 1, we asked a wide age range of children (kindergarten through sixth grade) and adults to estimate the values of celebrity possessions (e.g., a flag pin owned by the President of the U.S.), original creations (e.g., the very first game of Candy Land), personal possessions (e.g., a childhood stuffed animal), and merely old items as a control (e.g., an old toy car). In each case, the target item was also

ⁱThere is one additional explanation that might be considered, namely, authentic objects may gain special value due to beliefs about their market value. On this account, people accord more value to Harry Potter's glasses because they understand that others are willing to pay large amounts of money for this item, as in celebrity auctions (from Sotheby's to eBay). However, the market value account still lacks an explanation of why the market value is elevated for such items, and thus only pushes back the explanatory problem one more step. For this reason, we will not consider market forces further in this paper

compared to a matched comparison item (e.g., a flag pin owned by the experimenter's father). Study 2 focused on the contrast between celebrity possessions and original creations, and included a younger (preschool) sample as well as adults.

These studies allow us to determine the scope of children's evaluation of authentic objects. If all authentic objects are accorded high value, this would be consistent with the "interesting history" account, as all three kinds of authentic objects (celebrity possession, original creation, personal possession) possess an interesting history. If celebrity possessions and personal possessions are accorded high value, but original creations are not, this would be consistent with the "positive contagion" account, as the self/family and celebrities are (presumably) positively viewed and so would confer positive value on items associated with them, but there is nothing inherently positive about an original item. If only celebrity possessions are accorded high value, this would be consistent with the "essentialist contagion" account, wherein a celebrity's essence is transferred to one who owns or touches the celebrity possession. Although an essentialist contagion account would also predict that a personal possession would be viewed as possessing greater value to the self, higher values would be blocked when asking about the object's value to others, as they would be assumed not to know or care about the owner.

STUDY 1

Method

Participants—There were 83 participants in Study 1: 16 kindergarten and first-grade children (M age 5.7, $SD = .33$; 10 boys, 6 girls; henceforth referred to as "Grades K/1"; three of these children were home-schooled but within the same age range), 17 second- and third-grade children (M age 8.0, $SD = .50$; 9 boys, 8 girls; henceforth referred to as "Grades 2/3"), 16 fifth-graders (M age 10.6, $SD = .45$; 9 boys, 7 girls), 16 sixth-graders (M age 11.8, $SD = .46$; 9 boys, 7 girls), and 18 college undergraduates (7 men, 11 women). Three additional children were tested but dropped, due to experimenter error (1) and refusal to complete the task (2). The children in Grades K/1 and 2/3 were from a mid-size city in the Midwestern U.S.; the children in Grades 5 and 6 were from a rural community in the southeastern U.S.; the college students attended a large public university in the same town as the younger groups of children.

Materials—For younger participants (Grades K/1 and 2/3), materials included photos used in three tasks: forced-choice training (money; painting vs. crumpled piece of paper; roller skates vs. dirty sock), monetary-judgment training (pack of gum, drum set, toy boat, and cup), and forced-choice warm-up (box of crayons vs. one crayon; fancy toy train vs. plain toy train; fancy pen vs. plain pen; whole cookie vs. cookie with one bite missing; clean shoe vs. dirty shoe). In addition, all participants received a monetary judgment warm-up with photos of six items (one Lego, pile of Legos, pencil, cell phone, diamond ring, and plastic fork).

The test items included photographs for 16 item-pairs, consisting of four item-pairs for each of four types of sets: celebrity possessions (e.g., the president's flag pin), personal possessions (e.g., a book the participant was to imagine having won in a contest), original

creations (e.g., the very first teddy bear), and merely old controls (old items with no special history; e.g., an old soccer ball) (see Table 1). Each item-pair included one authentic item (e.g., the president's flag pin) and one inauthentic item that was designed to be matched in important respects to the authentic item. For Celebrity Possessions, the inauthentic contrast items were also described as owned by someone, but the owner was someone of no significance to the participant (e.g., the experimenter's father). For Personal Possessions, the authentic item was a hypothetical item described as belonging to either the participant (toy frog, book) or a close relative (doll house, baseball glove). For example, for the toy frog, participants heard, "Let's pretend that when you were younger, you had a stuffed frog. This is your stuffed frog." The inauthentic contrast items were described as either owned by another person or found in a different context (e.g., stuffed frog that the experimenter saw at a store). For Original Creations and the Merely Old items, the inauthentic contrast items were described as a new version of the same item (e.g., a brand new teddy bear or a brand new soccer ball). The Merely Old item sets serve as a control, where the older item does not have any special history and so should not be more valuable. These items test whether participants are using a simple response bias to judge that anything old is more valuable.

The photographs used for the items sets differed somewhat by item type. For the Original Creation and Merely Old item sets, a fixed picture was used for each description. For example, the very first bicycle was a photo of an old-fashioned bicycle with a large front wheel and a small back wheel, whereas the brand-new bicycle was a shiny, modern bicycle with two equal-sized wheels. Similarly, the merely old items looked old (dirty or worn) whereas the comparison (new) items looked new. However, for Celebrity Possessions and Personal Possessions, the assignment of picture to description was counterbalanced (e.g., one flag pin picture was designed as belonging to President Obama for half the participants, but as belonging to the experimenter's father for half the participants). Because these items ostensibly differed only in their relationship to a famous individual, this precaution was taken to control for any possible differences between the base items. Additionally, a photo of the famous person was included next to the authentic celebrity possessions, as a reminder (e.g., a photo of President Obama).

Procedure: overview, training, and warm-ups—Children in Grades K/1 and 2/3 were interviewed individually in a quiet room in an on-campus laboratory. Adults as well as children in Grades 5 and 6 were given booklets with all items reproduced in full color, and wrote their answers directly onto the booklet. Children in Grades 5 and 6 were tested in a quiet hallway in their school; adults were tested in the same laboratory as the younger children.

The young children (Grades K/1 and 2/3) first received a brief training in which the experimenter showed a picture of money, explained that money is used to buy things, and gave examples of pairs of items in which one item cost more than the other (e.g., a nice painting costs more than a crumpled piece of paper). They then received a forced-choice warm-up task, consisting of five pairs of items for which they were asked, "Which would people pay more money for?" (e.g., one crayon vs. box of crayons). Feedback was provided for the forced-choice warm-up. Following this, the younger children were trained on monetary judgments for four items (e.g., they were told that people would pay \$1 for a pack

of gum, and \$100 for a drum set). Then all participants received a warm-up task consisting of six monetary judgments, for which they were asked, “Can you guess: how much would people pay for this X?” (e.g., Lego). No feedback was provided on this task.

Procedure: main task—The experimental trials were presented in pairs, in which one authentic item was paired with one matching inauthentic item (e.g., the president’s flag pin vs. the experimenter’s father’s flag pin). For each trial, the items were described (e.g., “Did you know that my dad likes to wear a pin with the flag on it? This is my dad’s favorite flag pin that he likes to wear.” and “Did you know that the President likes to wear a pin with the flag on it? This is the President’s favorite flag pin that he likes to wear.”). For celebrity possessions, a photo of the owner was placed next to the item (e.g., a photo of President Obama was placed next to his flag pin). After the items were described, participants were asked, “Which X [e.g., flag pin] would people pay more money for?” (forced-choice task). Then, participants were additionally asked, “How much would people pay for this X?” (concerning each of the two choices in turn) (monetary judgment task). The items were presented in blocks by item type (e.g., all the celebrity possession items were presented together), with the order of blocks counterbalanced across participants. Furthermore, the order of the item sets within each block was counterbalanced across participants. For each participant and within each item type, the authentic item was presented first for half the pairs in each set. For each set, the authentic item was presented first for half the participants.

On the last item of each type (celebrity possession, personal possession, original creation, and control), participants were asked to supply a justification (“Can you tell me why?” [and if needed]: “Why would people pay more money for this one?”) At the very end of the session, participants were asked about their history with an attachment object.

Results

We first determined whether participants were capable of making meaningful monetary judgments, by examining the results of the warm-up tasks, and the consistency between forced-choice responses and monetary values. We then present data from the forced-choice task and the monetary judgment task separately.

Warm-up tasks—Performance was excellent on the forced-choice warm-up task in which the younger two groups of children were asked to select which of two choices people would pay more money for, with children in Grades K/1 selecting the correct choice on 95% of trials, and children in Grades 2/3 selecting the correct choice on 100% of trials. The monetary warm-up task, in which participants were asked to provide monetary judgments for 3 pairs of items, also yielded excellent performance at all grades, with accuracy (defined as providing a higher value for the more valuable object in a pair) of 92% at Grades K/1 and 100% at all other grades. Thus, even the youngest children understood that money is an index of value, and could reliably supply specific dollar amounts that map onto relative value.

Consistency between choices and monetary judgments—In order to further validate the monetary judgment task, we examined the degree of consistency between the

forced-choice judgments (e.g., which flag pin people would pay more money for) and the monetary judgments (e.g., how much money people would pay for each flag pin). A response was coded as *consistent* if the item selected on the forced-choice question was given a higher dollar amount on the monetary judgment task; it was coded as *inconsistent* if the item selected on the forced-choice question was given a lower dollar amount. Responses in which the dollar amounts for the two choices were equal, or in which data were missing, were excluded from this analysis (3.1% of trials total). Based on these analyses, consistency rates (averaging over all test trials) were 89% (Grades K/1), 95% (Grades 2/3), 94% (Grade 5), 98% (Grade 6), and 98% (college). As indicated by one-sample *t*-tests, all scores were significantly above chance of 50%, $ps < .001$. This analysis validates the monetary judgment task as a meaningful assessment of children's evaluations, even in the youngest age group.

Forced-choice responses: composite scores—For each participant, a composite score was computed for each item type (celebrity possession, original creation, personal possession, merely old) indicating the number of trials on which participants selected the authentic choice (or, for merely old items, the old choice), with scores possibly ranging from 0–4 (see Figure 1). A repeated-measured ANOVA was conducted with item type as a within-subjects variable and grade (K/1, 2/3, 5, 6, college) as a between-subjects variable. We obtained a main effect of item type, $F(3, 234) = 78.83$, $p < .001$, $\eta_p^2 = .50$, a main effect of grade, $F(4,78) = 3.16$, $p < .02$, $\eta_p^2 = .14$, and a non-significant trend of an item type $\times$ grade interaction, $F(4,78) = 2.42$, $p = .056$, $\eta_p^2 = .11$.

As can be seen in Figure 1, Celebrity Possessions tended to receive the highest scores, Merely Old items tended to receive the lowest scores, and Original Creations and Personal Possessions were in the middle. In all grades, scores for Celebrity Possessions were significantly higher than scores for any of the other item types, ps ranging from .022 to $< .001$, with only two exceptions: when compared to scores for Personal Possessions in Grades K/1 and 6. Scores for Original Creations and Personal Possessions also were higher than scores for Merely Old items at every grade, with one exception (K/1, where Original Creations did not differ from Merely Old scores). Scores for Original Creations and Personal Possessions did not differ from one another at any age.

When examining effects of grade, we see that Celebrity Possession scores were lower in Grades K/1 than all other grades, $ps < .01$, and lower in Grades 2/3 than adults, $p = .058$. Personal Possession scores were highest in Grade 6, exceeding those of every age group except Grade 5, $ps < .05$. Original Creation scores were higher among College students than Grades K/1, $p < .05$, but none of the other grades differed from one another. Finally, Merely Old items received uniformly low scores at all grades, although sixth-graders produced significantly higher scores than 2nd/3rd graders, $p < .05$.

We also compared participants' responses to chance (2 out of 4, or 50%). Performance was significantly above chance for Celebrity Possessions at every grade except K/1, $ps < .001$. Personal Possessions were above chance at Grade 6 only, $p < .05$. Original Creations were below chance at Grades K/1, $p < .05$. Merely Old items were below chance at every grade, $ps < .001$. All other scores did not differ from chance.

Monetary judgments: composite scores—For each participant, two composite scores were computed for each item type (celebrity possession, original creation, personal possession, merely old), indicating the average monetary amount for the authentic and inauthentic choices, respectively, in U.S. dollars. These scores were then log-transformed to reduce the variability due to some extremely high values (e.g., “one billion million”), using the Lg10 function in SPSS. Then a difference score was calculated, subtracting the log-transformed score for the inauthentic items from the log-transformed score for the authentic items, separately for each item type. The transformed difference scores were entered into a repeated-measured ANOVA, with item type as a within-subjects variable and grade (K/1, 2/3, 5, 6, college) as a between-subjects variable (see Figure 2).

We obtained a main effect for item type, $F(3,231) = 21.68, p < .001, \eta_p^2 = .22$. A series of post-hoc tests reveal that scores for Celebrity Possessions were higher than all others, $ps < .001$, scores for Merely Old items were lower than all others, $ps < .001$, and Original Creations and Personal Possessions did not significantly differ from one another. There was no significant effect of grade, $p > .37$, and the item type $\times$ grade interaction was also non-significant, $p > .77$.

We also compared participants' responses to zero, which would indicate that a participant judged authentic and inauthentic (comparison) items to be of equal value. Performance was significantly above zero for Celebrity Possessions at every grade except the youngest (K/1), $ps < .02$. Performance was significantly below zero for Merely Old items at every grade except Grade 6, $ps < .001$. Finally, for Grade 6 only, Personal Possessions were above zero, $p < .02$. All other choices did not differ from chance.

Discussion

Object history influences judgments of monetary value, in children and adults. Specifically, by Grades 2/3, children consistently judged items owned by a famous individual to be more valuable than items owned by a comparison (non-famous) individual. Children could be quite articulate in their justifications, as with a sixth-grader who selected Dorothy's shoes by explaining, “They are the actual Dorothy's shoes from the Wizard of Oz”, or the sixth-grader who picked Harry Potter's wand because, “It was used by a famous person.” These data demonstrate that children in the elementary school years make use of historical features—invisible and no longer present—to assess the value of material objects. This extends beyond prior work by showing that not only do children recognize that certain items are deemed worthy of display in a museum (Frazier et al., 2009), but also that these items have greater monetary value to people in general.

Some children may have picked Harry Potter's wand because they believed it had magical properties. We tried to block this interpretation by presenting a photo of Daniel Radcliffe, the actor who played Harry Potter in the movies, as the owner of the wand, to imply that the wand was the prop used in the movie, not an actual magical wand. In any case, performance was equally high (or in some cases higher) with the president's flag pin, which presumably had no magical properties. Nonetheless, we return to this issue in Study 2, where we more directly control for this possibility.

Study 1 also showed that children's sensitivity to authenticity was quite specific and targeted: celebrity possessions were consistently viewed as more valuable than original creations, personal possessions, or merely old items. Even though prior work shows that both adults and children as young as kindergarten age judge that original creations belong in museums (Frazier & Gelman, 2009; Frazier et al., 2009), original creations were not judged to be worth as much money to others as celebrity possessions. Children are not simply following a rule that "old things are more valuable", given the results with original creations and merely old items (indeed, children seem to be following a rule that "(merely) old things are less valuable"). Furthermore, even though personal possessions are associated with a positive individual (the participant himself or herself, or a family member of the participant), and even though in prior research children reported that personal possessions are at least as desirable as celebrity possessions (Frazier & Gelman, 2009, Tables 1 and 2), personal possessions were not judged to be worth as much money to others as celebrity possessions. Thus, it would appear that children are not following a rule that "objects with positive associations are more valuable."

Celebrity possessions entail direct contact with a beloved or respected individual, consistent with the idea that some essential nature of that individual was transferred to the authentic object. In contrast, although original creations also have special history, they do not have direct contact with a particular individual. And although personal possessions also have special history, they are not of general interest to others. Only celebrity possessions involve direct contact with a person who is of general interest.

Although the data reveal early sensitivity to celebrity possessions, this sensitivity increases from kindergarten through sixth grade. Why appreciation of authenticity increases over time is unclear, though it may relate to changes with age in cultural knowledge, including celebrity auctions, antique stores, museum displays, etc. Perhaps, too, older participants are better able to pull their focus away from competing perceptual cues (e.g., the original creations looked older and not as "nice" as the brand-new items), due to domain-general attentional processes. Another potential source of developmental change may be age-related differences in knowledge about the specific items selected for study. For example, even the youngest children (Grades K/1) consistently judged the President's flag pin as more valuable than the inauthentic comparison flag pin, at times even providing compelling justifications (e.g., "It's the president's"; "it's real"), but none of the other items yielded above-chance performance. In their comments, some of the younger children seemed unaware of Dorothy's slippers from the Wizard of Oz, and other children disdained Sesame Street characters (including Ernie). Thus, although children overall placed high value on the Celebrity Possessions, the selection of items in Study 1 may have underestimated the extent of this effect. Study 2 was designed in part to address these concerns.

A further potential limitation of Study 1 was that participants, including adults, responded randomly when presented with original creations. This is surprising, given the historical significance of such items. However, a closer inspection of individual items was revealing. Adults actually placed high value on three of the four items (Candy Land, teddy bear, and bicycle; 71–76% authentic selections on each), but their overall score was pulled down for their responses on the computer; only 29% authentic selections). Similarly, monetary

judgments revealed lower authenticity selections for the computer and the bicycle than for Candy Land or the teddy bear. An inspection of adults' comments suggests that they considered computers and bicycles to have high value when new, and to be more functional when new than old. The inclusion of these items might therefore have worked against an appreciation of authenticity. Study 2 was designed in part to address this limitation.

STUDY 2

One primary purpose of Study 2 was to provide a more sensitive test of authenticity concepts. We provided enriched training to help the children understand monetary judgments. And second, the celebrity possessions were individualized to reflect each child's knowledge and interests. Study 2 was also designed to address the limitations of the Original Creation items used in Study 1. Specifically, for two item sets in that study, the inauthentic (brand-new) items were expensive and more functional than the authentic items. To address these concerns, we replaced the computer and bicycle sets with Thomas the tank engine and a Dr. Seuss book. Finally, the celebrity possessions in Study 2 were carefully selected so that none of the objects had (purported) magical powers (e.g., rather than Harry Potter's wand, we provided Harry Potter's glasses).

Because our primary interest was in the youngest children, we included a preschool sample as well as an early school-aged sample, in order to examine whether children who are just beginning to learn about money and public value would share the intuitions of the children from Study 1. A college sample was included to validate the adult end-points, with the prediction that adults would treat celebrity possessions and original creations as equally valuable. In contrast, we predicted that children would show the same differentiation between celebrity possessions and original creations as obtained in Study 1.

Method

Participants—Sixty-eight participants were tested, including 26 younger children (M age 4.9, $SD=.04$; 12 boys, 14 girls), 26 older children (M age 6.5, $SD=.31$; 10 boys, 16 girls), and 16 college students. The younger children were primarily preschoolers, and will be referred to as the Preschool group; the older children were primarily kindergarteners and first-graders, and will be referred to as the Grades K/1 group. All participants were from a mid-size city in the Midwestern U.S. The college students attended a large public university.

Materials—The initial tasks presented to children and adults used the same materials employed in Study 1. The test items included photographs for 8 item-pairs, consisting of four Original Creation item-pairs and four Celebrity Possession item-pairs. As described in the Introduction to this study, the Original Creations were modified from Study 1, to ensure that the authentic versions (e.g., the very first X) were fully functional, and to ensure that the control versions (e.g., the brand-new X) were not unusually valuable. The same sets were used for all participants.

The Celebrity Possessions for adults were identical to those of Study 1. For children, however, these items were selected on the basis of a parental checklist. The checklist included the names of 47 famous individuals: 7 historical figures (e.g., President Obama;

Queen Elizabeth) and 40 characters from popular culture, including both fictional characters (e.g., Bob the Builder) and non-fictional celebrities (e.g., Justin Bieber). For each, the parent was asked to indicate if the child was familiar with the person or character, and whether the child liked the person or character.

Item sets were prepared for each of the 47 individuals (pairs of authentic and inauthentic possessions; assignment of picture to authentic designation was randomized across participants), with care taken that the authentic object had no special magical or functional properties that would distinguish it from the matching control object (e.g., we selected Harry Potter's glasses rather than his wand). For each set, the authentic object belonged to the famous individual, and the inauthentic object belonged to someone associated with the experimenter (typically a friend or relative). We selected four individuals for each child that parents had indicated were both familiar and liked. Table 4 indicates how often each individual was included.

Additionally, adults received the same Merely Old items as in Study 1. However, pilot-testing revealed that the preschool children had difficulty getting through more than two item sets; therefore, in order to shorten the task for these children, the Merely Old items were not included for children and thus were not analyzed.

Procedure—The procedure for college students was identical to that of college students in Study 1, and children first received the same forced-choice training and monetary-judgment training tasks as were used in Study 1. All children then received a more intensive warm-up task that included both forced-choice and monetary judgments. In the warm-up, they saw six pairs of items that were matched such that one item was clearly higher in value than the other (e.g., one crayon vs. a box of crayons). These included the same five pairs that had been used in the warm-up task in Study 1, plus the Lego pair that had been used in the monetary training task of Study 1. For each pair, children were asked three questions: first, a forced-choice response (“Which would people pay more money for?”), and then a dollar amount for each of the two items in the pair (“How much would people pay for this one crayon? ... How much would people pay for this box of crayons?”). The order of the choices was counterbalanced such that the more valuable item was presented first for three of the pairs and second for three of the pairs. After answering all the questions on a given item (forced-choice as well as monetary judgments), children received direct feedback, with the experimenter saying either, “You’re right! People would pay more for this X because...” or “Actually, I think people would pay more for this X because...” The reasons provided during the feedback never mentioned authenticity (“there are more” (box of crayons); “it’s fancier” (fancy train); “it’s really special” (fancy pen); “it’s a whole cookie” (whole cookie); “it’s nice and clean” (clean shoe); “there are more” (pile of Legos)).

During the main task, participants received the celebrity possession and original creation items in blocks, with the order counterbalanced across participants. Order of assignment of authentic vs. control choice was counterbalanced across and between participants. As in Study 1, participants were first asked to make a forced-choice decision as to which item in the pair people would pay more money for (forced-choice task), and then were asked to

indicate how much would people pay for each (monetary judgment task). At the end, participants were asked about their attachment objects, as was done in Study 1.

Results

Warm-up tasks—Performance was excellent on the forced-choice warm-up task in which children were asked to select which of two choices people would pay more money for, with all participants in both age groups answering correctly on at least 4 of the 6 item pairs. The percentage selecting the more valuable item well exceeded chance (50%) in both the Preschool group (91%) and the Grades K/1 group (97%). The monetary warm-up task, in which children were asked to provide monetary judgments for 6 pairs of items, also yielded excellent performance at both ages, with accuracy (defined as providing a higher value for the more valuable object in a pair) of 88% and 92% for Preschool and K/1 children, respectively. Adults were 100% correct on their monetary judgments in the warm-up (i.e., provided higher monetary values for the more valuable item on all 3 item pairs). Thus, even the preschoolers understood that money is an index of value, and could reliably supply specific dollar amounts that mapped onto relative value.

Consistency between choices and monetary judgments—In order to further validate the monetary judgment task, we examined the degree of consistency between the forced-choice judgments (e.g., which flag pin people would pay more money for) and the monetary judgments (e.g., how much money people would pay for each flag pin), employing the same criteria used in Study 1. Responses in which the dollar amounts for the two choices were equal, or in which there was missing data, were excluded from this analysis (2.8% of trials total). Based on these analyses, consistency rates were 79% (Preschool), 89% (Grades K/1), and 99% (College). All scores were significantly above chance of 50%, p s < .001. This analysis validates the monetary judgment task as a meaningful assessment of children's evaluations, even in the preschool group.

Forced-choice responses: composite scores—For each participant, a score was computed for each item type (celebrity possession, original creation) indicating the number of trials on which he or she selected the authentic choice, with scores possibly ranging from 0–4. The data are presented in Table 5. A repeated-measured ANOVA was conducted with item type as a within-subjects variable and age (Preschool, Grades K/1, College) as a between-subjects variable. We obtained a main effect of item type, $F(1,65) = 19.23$, $p < .001$, $\eta_p^2 = .23$, a main effect of age, $F(2,65) = 22.96$, $p < .001$, $\eta_p^2 = .41$, and a significant age group $\times$ item type interaction, $F(2,65) = 4.29$, $p < .02$, $\eta_p^2 = .12$. Children at both age groups selected the authentic choice more often for celebrity possessions than for original creations, both p s < .001. In contrast, college students selected the authentic choice equally and at a high rate for both celebrity possessions and original creations. College students selected the authentic choice at higher rates than children for both item types, p s < .001; Preschool and K/1 children did not differ from one another. Children's choices (combined over ages) were above-chance for Celebrity Possessions ($p < .05$) but below-chance for Original Creations ($p < .001$). In contrast, college students' choices were above-chance for both item types, p s < .001.

Monetary judgments: composite scores—As in Study 1, we averaged the monetary judgments for authentic and inauthentic judgments separately, log-transformed these scales, and then created a difference score of the authentic minus the inauthentic log scores. These data are presented in Table 5. They were then entered into a 2 (item type: celebrity possession, original creation) $\times$ 3 (age group: Preschool, Grades K/1, College) ANOVA. We obtained a main effect of item type, $F(1,65) = 5.86$, $p < .02$, $\eta_p^2 = .08$, indicating that participants scored more highly on the celebrity possessions than the original creations, $M_s = .72$ and $.48$, respectively. We also obtained a main effect of age group, $F(2,65) = 36.52$, $p < .001$, $\eta_p^2 = .53$, indicating that adults scored significantly higher than both groups of children, $p < .001$, who did not differ from one another, $p > .63$.

Although there was no significant item type by age group interaction, $F(2,65) = 1.67$, $p > .19$, planned comparisons reveal that difference scores were higher for celebrity possessions than original creations for preschool children only, $p < .005$. K/1 children showed a non-significant trend, $p = .13$, and college students responded equivalently to the two types of items, $p > .90$. College students' responses were significantly above zero for both item types $p < .001$, and preschoolers were significantly below zero on the original creations, $p < .05$. However, when combining over the two child ages, children's scores were greater than zero for Celebrity Possessions, $p < .05$, and below zero for Original Creations, $p < .05$.

Discussion

Study 2, using a more sensitive task, extended Study 1 to a preschool sample, with a focus on two types of authentic items: celebrity possessions and original creations. Additionally, the original creation item sets were modified to address two potential concerns that might have underestimated participants' evaluations in Study 1. Finally, the celebrity possession item sets were individualized to children's background knowledge and preferences. With these new items, we now found that adults judged authentic items of both item types to be more valuable than their control counterparts, and equally so. Thus, for adults, the president's flag pin (celebrity possession) has higher monetary value compared to a flag pin owned by an ordinary other person, and the very first teddy bear (original creation) has higher monetary value compared to a brand-new teddy bear. Strikingly, and in contrast to the findings with adults, young children showed sensitivity to authenticity for the celebrity possessions only, and not for the original creations. These data replicate the findings from Study 2, but with a younger sample. Once again, their intuitions suggest that objects are imbued with special value because of their close contact with famous individuals, and not by other unique aspects of an object's history (e.g., originality).

In Study 2, the items used with children were pretested to ensure that the famous individuals were meaningful to each individual child (i.e., specifically tailored to the child's knowledge and interests). Furthermore, the items were carefully selected such that the authentic and control items did not differ in functional respects (e.g., none of the authentic items had magical properties or additional affordances). We found that young children assigned higher monetary values to the celebrity possessions than to their matched control objects (e.g., Dora's bracelet vs. another identical bracelet owned by the experimenter's sister), but did not assign higher values to the original creations than to their matched control objects. These

findings demonstrate that even preschool children accord special value to objects that had been owned by a famous, beloved individual. In contrast, objects that also have a notable history yet lack the direct link to a favored individual (i.e., original creations) are not accorded any special value.

Studies 1 and 2 together complement one another. Whereas Study 2 replicates the results of Study 1 regarding celebrity possessions and original creations, using an improved set of items and improved methodology, Study 1 has the benefit of including two additional types of items (personal possessions and merely old items) and a broader age range of children.

GENERAL DISCUSSION

Prior research has found that adults place greater monetary value on objects that are “authentic” in some way due to their history. Thus, celebrity possessions are more valuable than objects that have not been owned by a celebrity (Frazier et al., 2009; Newman, Diesendruck, & Bloom, 2011), and original creations are more valuable than brand-new objects (Frazier et al., 2009). At the same time, children treat both celebrity possessions and original creations as appropriate for display in a museum, indicating that they have observed the special status of both kinds of items in cultural practices. However, very little prior research has examined children’s *evaluation* of authentic items, and no prior research has examined children’s evaluation of a range of different types of authentic items.

The present studies focused on evaluation, using questions that assessed monetary value. On these measures, we found that children have an early appreciation for the value of celebrity possessions, starting in preschool, and that this appreciation both broadens in scope and strengthens with age. When asked to indicate how much a person would pay for an authentic object (such as Harry Potter’s glasses) and for an inauthentic object (a pair of glasses owned by a non-celebrity that the child hasn’t met), even young children who are first learning about the value of money provide higher scores for authentic objects. This result is not due to perceptual or material qualities of the objects, as we counterbalanced which of two equivalent exemplars was assigned to the authentic role.

Children’s tendency to place higher value on celebrity possessions is open to multiple interpretations: positive association (children like Harry Potter, so by means of a halo effect, they like his glasses), interesting history (having been owned by Harry Potter is a rare or notable event), or essentialism (children view some essential quality of Harry Potter as having “rubbed off” onto his glasses). Importantly, the different items used in the present studies provide an indirect test of these competing accounts. The positive association view would predict higher values for personal possessions as well as celebrity possessions, yet at no age did participants judge that personal possessions were higher in value than matched comparison objects. The interesting history view would predict higher values for original creations as well as celebrity possessions, yet children showed higher value for celebrity possessions only, not original creations. Finally, the essentialist view would predict highest values for celebrity possessions, which is what we found. Thus, children’s indifference to original objects (e.g., the very first Candy Land game) undermines the intriguing history

account for this age group, and therefore provides indirect support for the account that children view the glasses as holding Harry Potter's essence.

In future research it would be valuable to examine the "transfer of essence" explanation more directly by manipulating the extent to which an essential quality could (theoretically) have rubbed off onto the participant. In this context, both the extent to which the object was in direct contact with the original owner and the extent to which the object is (or could be) in direct contact with the participant could be relevant. For example, a shirt that was owned and worn by a celebrity for years may be more valuable than a shirt that was given to the celebrity but never taken out of its wrapping. Likewise, participants may prefer to own an unadulterated sheet of hand-written Beatles lyrics (which can be touched) than one that has been laminated (thus preventing contact with Beatle "essence"). Furthermore, studying beliefs regarding the effects of transfer (as did Johnson & Jacobs, 2001), in addition to value judgments per se, would be revealing. For example, it would be interesting to know if children believe that possessing or coming into contact with the possession of a beloved celebrity figure has consequences for their own abilities, characteristics, or behavior. Some suggestive evidence for such beliefs in adults comes from work showing that adults make more accurate golf shots if they believe they are using a famous pro's club (Lee, Linkenauger, Bakdash, Joy-Gaba, & Profitt, 2011).

Our data suggest that adults may be using multiple factors in computing object value, in addition to essentialist contamination. The most striking developmental change in our data is that adults embraced a broader set of authentic objects than children—most notably, placing high value on authentic original creations, such as the very first teddy bear. Moreover, prior research indicates that adults also value objects that are associated with historical events (e.g., dishes from the Titanic) as well as objects that are distant in space or time (e.g., an object from the bottom of the ocean, from the moon, or from a foreign land) (Frazier et al., 2009). Thus, although children's evaluation of celebrity possessions supports an essentialist mechanism, it is less clear how essentialism might explain these other kinds of valued items. For example, essentialism might have difficulty explaining why someone would treasure the boots of an anonymous soldier from the Civil War. In this (hypothetical) example, the particular soldier is probably not what makes the shoes valued, but rather the fact that the shoes were directly involved in the Civil War. But it seems unlikely that people view the war as having an essence that has rubbed onto the boots. The same problem extends to original creations, such as the very first Candy Land game. This suggests that additional mechanisms are likely to be operating in adults. We tentatively propose that adults in this culture may be susceptible to multiple mechanisms, including sensitivity to interesting histories, rareness, and/or market forces. In future research, it would be valuable to tease apart these factors and assess the relative influence of each at different points in development. For example, is a t-shirt once owned by George Clooney (a common object from a high-status celebrity) more or less valuable than a dish from the Titanic (a rare object without a famous owner but associated with an interesting history)?

A related unresolved question concerns the source of the developmental differences in children's performance. Although an appreciation of celebrity possessions was found by preschool age, original creations were not accorded higher value until sixth grade. One

possibility is that young children have difficulty grasping the notion of an original creation. Prior research indicates that young children don't yet understand the concept of "the first of its kind" as it applies to biological species (Evans, Mull, & Poling, 2002). Perhaps children likewise tend to assume that present-day objects have always existed in some form, and thus are not yet capable of considering original creations as distinct (but see Olson & Shaw, 2011, regarding 5-year-olds' recognition of the value of original works). Another possibility is that children only give special value to original creations for items that they care about. In future research, it would therefore be worth tailoring the original creations to the child's interests.

Children's failure to accord higher value to original creations is particularly interesting, given that by kindergarten age, children understand that original creations belong in museums. These results thus suggest that the enshrinement of original creations does not reflect a *value* judgment, at least for young children. Monetary value may not be the only feature that is important for museums, which contain things with historical value, even if they have little monetary value. It may even be that museum judgments reflect children's beliefs about cultural practices rather than value per se. For example, children may believe that it is appropriate to put old things or rare things in museum displays, much like it is appropriate to place books on a bookshelf or socks in a sock drawer.

Although we find that personal possessions were consistently judged as having low value in these experiments, this does not mean that these items wholly lack special value. First, children place higher value on attachment objects than "ordinary" owned objects (Hood & Bloom, 2008), and it is not clear that the items used in Study 1 were viewed as anything other than ordinary owned objects. Indeed, when participants were asked to describe their attachment objects at the end of the experiment, many recalled them with much fondness, sometimes even years later. Additionally, children and adults alike are susceptible to an endowment effect, in which actual owned objects (even ordinary ones) are more highly valued than non-owned objects (Kahneman, Knetsch, & Thaler, 1990; Gelman, Manczak, & Noles, 2012). The present studies may have reduced or eliminated an endowment effect, because we did not provide participants with actual objects that they truly owned.

Moreover, a critical aspect of the present studies is that we asked participants to assess the value of these objects for people *in general*, when the personal significance of the items was saliently applicable to the participant only. A participant can use theory-of-mind reasoning to infer that an old toy frog that he once owned is uniquely valuable to himself. For example, one adult participant said, "Though my frog has more significance to me, other people don't have the same attachment to it and would prefer the newer, brighter frog." It is thus likely that participants recognized that the value of personal possessions was idiosyncratic and not generally applicable to the public at large. It also may be that the personal possessors (your mother or grandfather) did not have the special appeal of celebrities. Just what it is that gives celebrities or famous individuals a special appeal is unknown. Perhaps status is an important factor. Asymmetric, authority-ranking relations are found in many cultures around the world (Fiske, 1992). Furthermore, recent research suggests that children are highly attentive to a person's status or social dominance (Thomsen, Frankenhuys, Ingold-Smith, & Carey, 2011) and wish to associate with individuals who experience good fortune (Olson, Banaji, Dweck,

& Spelke, 2006). In current society, celebrities are the epitome of powerful, high-status, lucky individuals. In future research, it would be interesting to examine the qualities of an individual that lead people to value their possessions.

More generally, in future research, it will be valuable to explore the practical implications of children's economic intuitions for understanding how they may inform behavior, including resource allocation (Olson, Dweck, Spelke, & Banaji, 2011), person judgments (Olson, Shutts, Kinzler, & Weisman, 2012), patterns of spending (Rick, Cryder, & Loewenstein, 2008), and consumption (Wang, Seidler, Hall, & Preston, 2012). The burgeoning field of behavioral economics has to date focused primarily on adults, thus inviting a wealth of topics to explore from a developmental perspective.

Conclusions

These results suggest two important findings. First, even preschool children are sensitive to an object's history in determining its value. Second, certain kinds of object history are privileged in this respect. In particular, authentic objects initially appear to gain value from essentialist assumptions regarding contact with a special individual, and not just from having an interesting or unusual object history.

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Figure 1.

Study 1, mean number of authentic choices (out of 4 possible) as a function of item type and grade.

Figure 2.

Study 1, monetary judgments expressed as the mean difference scores (authentic minus inauthentic) of log-transformed dollar judgments, as a function of grade and item type.

Table 1

Item sets in Studies 1 and 2.

CELEBRITY POSSESSIONS [Study 1, all ages; Study 2, adults only]
<ul style="list-style-type: none"> • President Obama's flag pin vs. dad's flag pin • Harry Potter's wand vs. experimenter's wand • (Sesame Street) Ernie's rubber ducky vs. sister's rubber ducky • (Wizard of Oz) Dorothy's ruby slippers vs. experimenter's shoes
ORIGINAL CREATIONS
<ul style="list-style-type: none"> • Very first Candy Land game vs. brand-new Candy Land game • Very first teddy bear vs. brand-new teddy bear • Very first bike vs. brand-new bike [Study 1 only] • Very first Macintosh computer vs. brand-new Macintosh computer [Study 1 only] • Very first Dr. Seuss book vs. brand-new Dr. Seuss book [Study 2 only] • Very first Thomas the Tank Engine vs. brand-new Thomas the Tank Engine [Study 2 only]
PERSONAL POSSESSIONS [Study 1 only]
<ul style="list-style-type: none"> • Book participant won in contest vs. library book • Participant's childhood toy frog vs. toy frog from store • Grandfather's baseball glove vs. experimenter's baseball glove • Mother's doll house vs. doll house from store
OLD ITEMS (CONTROL) [Study 1 only]
<ul style="list-style-type: none"> • Old car vs. brand-new car • Old ball vs. brand-new ball • Old chair vs. brand-new chair • Old book vs. brand-new book

Table 2

Study 1, individual items, choice task.

Grade:	K/1	2/3	5	6	C
CELEBRITY POSSESSIONS					
• President's flag pin	*	*	*	+	*
• Harry Potter's wand		*	*	*	*
• Ernie's rubber ducky		*	*	*	*
• Dorothy's ruby slippers			*	*	*
ORIGINAL CREATIONS					
• Very first Candy Land game	(*)				*
• Very first teddy bear					*
• Very first bike					*
• Very first Macintosh computer	(*)				(+)
PERSONAL POSSESSIONS					
• Participant's childhood toy frog	(*)	(*)			(*)
• Book won in contest					
• Mother's doll house				*	
• Grandfather's baseball glove					
OLD ITEMS (CONTROL)					
• Old chair	(*)	(*)	(*)	(*)	(*)
• Old ball	(*)			(*)	(*)
• Old car	(*)		(*)	(*)	(*)
• Old book	(*)	(*)			(*)

* significantly different from chance, $p < .05$;
+ marginally different from chance, $p < .10$; () significantly or marginally below chance.
() significantly or marginally below chance.

Table 3

Study 1, individual items, monetary task.

Grade:	K/1	2/3	5	6	C
CELEBRITY POSSESSIONS					
• President's flag pin	+	*	*		*
• Harry Potter's wand		*	*	*	*
• Ernie's rubber ducky			*	*	*
• Dorothy's ruby slippers			*	*	*
ORIGINAL CREATIONS					
• Very first Candy Land game				*	*
• Very first teddy bear				*	*
• Very first bike					*
• Very first Macintosh computer					
PERSONAL POSSESSIONS					
• Participant's childhood toy frog					
• Book won in contest			(+)		*
• Mother's doll house				*	
• Grandfather's baseball glove					
OLD ITEMS (CONTROL)					
• Old chair		(*)	(*)	(*)	(*)
• Old ball		*	(*)	(*)	(*)
• Old car		(*)	(*)		(*)
• Old book		(*)	(*)	(*)	(*)

* significantly different from chance, $p < .05$;
+ marginally different from chance, $p < .10$;
() significantly or marginally below chance.

Table 4

Study 2, characters used in the celebrity possession trials, in decreasing order of frequency.

<u># Participants</u>	<u>Character Name</u>	<u>Possession</u>
22	Dora the Explorer	bracelet
21	Scooby Doo	blue collar
20	Woody (Toy Story)	cowboy hat
15	Cinderella	glass slipper
14	Spongebob Squarepants	spatula
11	Mario (Super Mario Bros.)	red hat
10	Cat in the Hat	red and white hat
	Hello Kitty	flower hair clip
	Snow White	red headband
9	Batman	mask
	Hannah Montana	microphone
8	Spiderman	mask
7	Minnie Mouse	red bow
6	Alvin the Chipmunk	sweatshirt with letter "A"
4	Bob the Builder	yellow hat
	President Obama	flag pin
	Princess Tiana (Princess and the Frog)	tiara
	Snoopy (Peanuts)	scarf
3	Arthur the Aardvark	red shoe
	Justin Bieber	green shoes
	Charlie Brown	yellow shirt
	Dorothy (Wizard of Oz)	ruby slippers
	Mr. Incredible (The Incredibles)	black mask
	Winnie-the-Pooh	honey pot
2	Caillou	yellow sock
1	Alice in Wonderland	black shoe
	Blue (Blue's Clues)	red chair
	Franklin the Turtle	red bandana
	Harry Potter	glasses
	Puss-in-Boots	belt
	Scrat (Ice Age)	favorite acorn
	Stitch (Lilo & Stitch)	grass skirt
	Superman	cape

Table 5

Study 2, mean number of authentic choices and monetary judgments expressed as the mean difference scores (authentic minus inauthentic) of log-transformed dollar judgments, as a function of item type and age group. *SDs* are in parentheses.

	Celebrity Possessions	Original Creations
Authentic Choices		
Preschool Children	2.38 (1.27)	1.15 (1.25)
K/1 Children	2.38 (1.20)	1.38 (1.44)
College	3.69 (0.70)	3.69 (0.60)
Monetary Difference Scores		
Preschool Children	0.20 (0.64)	−0.27 (0.62)
K/1 Children	0.18 (0.54)	−0.06 (0.51)
College	1.78 (1.33)	1.77 (1.36)