From Second-Hand to Third-Hand: Reuse and Resale Cycle

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The long-term responsible use of energy and resources to achieve sustainable development has been listed by the United Nations as one of the most pressing issues facing the world in the next five decades (United Nations 2022). Therefore, the promotion of reuse and resale behaviors has been receiving extensive attention worldwide. Such behaviors can reduce waste as well as save energy and resources in the production of new goods for society, and at the same time create happiness for consumers (Donnelly et al. 2017; Huang and Fishbach 2021). With the efforts of all parties, the global resale market has had an impressive growth during the past decades and became a US$177 billion business by 2022 (Future Market Insights 2022). Although the COVID-19 pandemic curbed resale activities for certain sectors temporarily (e.g., used car and apparel transactions decreased by 6.0% and 3.6% in 2020, respectively; ThredUp 2021), the resale market has started to bounce back as online channels thrive. Further evidence has shown that one key obstacle to the continued growth of second-hand markets is the relatively low motivation on the sellers’ side (e.g., a seller’s market for used vehicles and fast fashion; Henry 2021; ThredUp 2021). Additional efforts should be made to boost the supply and better
promote this market. Thus, more understanding of when and why consumers resell their products is needed.

Several factors may lead consumers to resell products they no longer use, including product characteristics (e.g., preservation condition, Degenstein et al. 2020; expected product value, Jacoby, Berning, and Dietvorst 1977), motivational factors (e.g., profit-making, Paden and Stell 2005; opportunities for social interaction, Sherry 1990), and individual differences (e.g., environmental value, Lehner et al. 2020). In contrast, consumers sometimes prefer to retain a product, even if they barely use it, especially when the product carries treasured memories (Winterich, Reczek, and Irwin 2017), when it falls into an organized set (Ross, Meloy, and Bolton 2021), or when consumers have a strong product retention tendency (Haws et al. 2012) (for a review of consumers’ retention behaviors, see Haws and Reczek 2022). Along this line of research, we aim to further investigate when consumers are more likely to resell a product they own. Taking a novel perspective, we test whether a product was second-hand (vs. brand-new) when a consumer originally acquired it influences this consumer’s resale behaviors.

Imagine the following scenario: two consumers, Sam and John, each bought a tablet computer. While Sam bought a brand-new tablet, John bought a slightly used one. They have both enjoyed using their tablet for two years but recently found that the frequency of using it has decreased a lot. All things being equal, which of them is more likely to resell the tablet in this case? In answering this question, we propose a “reuse and resale cycle” effect. That is, John, who bought the second-hand tablet, is more likely to resell it. One possible mechanism underlying this effect is that consumers perceive a relatively low connection with a second-hand possession.

Our research advances the understanding of consumer resale behavior. The initial purchase of a second-hand product prompts a consumer to resell the item in the future, potentially leading to more rounds of reuse and resale behaviors by subsequent consumers based on the same psychological process—a phenomenon we call a “reuse and resale cycle.” While previous research has investigated more about the economic and environmental value that could be derived from second-hand transactions, our research explores, all else equal, whether a product’s “second-hand history” per se could affect consumers’ judgment and decision-making. To do this, we adopt a novel perspective to explore the specialty of second-hand products in terms of consumers’ psychological attachment to them. Our research has implications for consumers to avoid retaining excessive possessions but to return the items to the market system. Companies and public policymakers could also utilize the insights to motivate consumers’ resale. This cycle may go beyond individual consumers to operate at the market level, that is, the enhanced willingness to resell could effectively constitute greater second-hand supply, leading to more active second-hand transactions. Thus, with the continuous efforts of all parties, we could expect a consumption paradigm shift toward much more used products, which eventually contributes to society’s sustainability in the long run.

**CONSUMERS CONNECT LESS WITH SECOND-HAND PRODUCTS**

Previous literature has established that consumers have different levels of connection with the products they own. Consumers feel more connected with a product that carries important components of self-identity, such as reflecting group membership (Escalas and Bettman 2003) and personal efforts (Norton, Mochon, and Ariely 2012). In contrast, consumers connect less with products possessing merely functional or material value (Belk 1988; Ferraro, Escalas, and Bettman 2011; Graul and Brough 2021; Richins 1994). Extending this line of research, we ask whether a product is originally obtained second hand or brand new influences consumers’ perceived connection with it.

To answer this question, it is worth noting that a second-hand product was once used by others and is not associated only with the current owner’s personal history. In other words, such products are not psychologically exclusive to the current owner. Although consumers have full legal ownership of those second-hand products, their feeling of psychological ownership (the one that reflects the connection with the product; Pierce, Kostova, and Dirks 2003) may not be strong. For example, people have a “first-possession” heuristic such that the first person who possesses an object claims ownership right (Friedman 2008; Kirk, Peck, and Swain 2018). Second-hand products could even be viewed through a “sharing economy” lens to the extent that they serve multiple users (Donnelly et al. 2017; Eckhardt et al. 2019). In addition, since possessions are “repositories” of owners’ self-identity (van Dyne and Pierce 2004), previous owners’ identity may become salient traces that inhibit the current owner from signaling the unique self (Ferraro et al. 2011; Peck and Luangrath 2023). In other words, as consumers are more willing to link a possession to self when it symbolizes and records their own past and unique personal history (Bardhi and Eckhardt 2017; Belk 1988; Escalas and Bettman 2003; Richins 1994), they are less likely to establish a strong connection with a possession when such symbolization and records are diluted and thus weakened. Therefore, we argue that consumers feel less connected with a second-hand product they own, compared to a similar product initially obtained as a brand-new one. In the next section, we discuss how this reduced connection influences the current owner’s decision to resell the product.
WEAK CONNECTION WITH PRODUCTS FACILITATES RESALE BEHAVIORS

The extent to which consumers feel connected to a product they own is a critical determinant of their decisions concerning the disposal of the product. Previous research has shown that separating from connected products is a painful process characterized by self-threats and negative feelings (Ferraro et al. 2011; Lastovicka and Fernandez 2005; Trudel, Argo, and Meng 2016; Winterich et al. 2017). A strong connection with a product implies its irreplaceable inherent meaning (Graul, Brough, and Isaac 2022), and consumers are more likely to extend its usage (Dommer and Winterich 2021; Epp and Price 2010). Similarly, the endowment effect, which reflects the aversion to losing one’s possessions, has also been shown to be moderated by the owner’s connection with the possession (Arnthorsson 1996; Da Silva, Matsushita, and Silveira 2015; Dommer and Swaminathan 2013). That is, relinquishing highly connected possessions induces a greater loss of the self and exacerbates the endowment effect. Thus, for less connected possessions, it is possible that consumers part with them more easily. Even after a consumer decides to sell a product, the strength of connection still influences how s/he carries out the transaction. For example, consumers are more selective in finding a potential buyer for products with which they strongly connect but care less about the buyer of products to which they are weakly attached (Brough and Isaac 2012).

In short, reduced connection can ease the pain of separating from a possession. To this extent, it is possible that consumers are more likely to resell rather than retain products they feel less connected with when they barely use them.

THE “REUSE AND RESALE CYCLE” EFFECT

Integrating the ideas discussed above, consumers often feel less connected with a second-hand product they own, and such a weak connection could make consumers more likely to resell it, compared to a product they obtained as a brand-new one. Formally, we hypothesize that:

H1: Consumers are more willing to resell a product if the product was originally obtained second hand, compared to a product obtained brand new.

H2: The lower connection consumers perceive with a second-hand product they own mediates the effect in hypothesis 1.

When exploring the underlying mechanism for the phenomenon, we focus on identifying one process that could explain how the fact that a product was obtained second hand influences the decision to resell it. We also note that when a product becomes second-hand, it is often (although not always) accompanied by other changes, such as its quality or economic/environmental benefits. Those changes could also influence the reselling decision, and thus, in such cases, multiple processes are likely operating concurrently.

We further propose that the reuse and resale cycle effect should be mitigated among consumers who chronically have a high tendency to link themselves with possessions and use possessions to define themselves. Such an individual difference can be reflected by the self-extension tendency (Ferraro et al. 2011; Sprott, Czellar, and Spangenberg 2009). With a low self-extension tendency, people construct the self by focusing on a selective set of possessions that provide unique personal meanings; in contrast, people with a high self-extension tendency have a general propensity to include a broader set of possessions as part of the self, no matter whether such possessions exclusively symbolize the self (Ferraro et al. 2011). Thus, people with a high self-extension tendency would form relatively strong connections with second-hand products as well—in addition to new ones—and reduce the likelihood of reselling. Formally, we hypothesize that:

H3: The effect in hypothesis 1 is mitigated among consumers with a high self-extension tendency.

We conducted six studies to test these hypotheses. As an initial test for the proposed effect (hypothesis 1), study 1, a longitudinal study, traced consumers’ actual resale behaviors. Then, studies 2a–2c further tested the main effect (hypothesis 1) with a set of different stimuli and consumption contexts. The studies controlled for other factors that may potentially influence reselling intention and examined the proposed mechanism by directly measuring the connection consumers felt with the product (hypothesis 2). Study 3 further tested the process (hypothesis 2) by introducing an intervention of undermining connection with the products. Study 4 tested the moderating role of the self-extension tendency (hypothesis 3). Collectively, studies 3–4 showed that the proposed effect was mitigated when consumers felt almost equally connected with a second-hand product and a brand-new one. We preregistered studies 2–4. Data are posted on OSF (https://osf.io/h7qn/).

STUDY 1: A LONGITUDINAL STUDY OF CONSUMERS’ ACTUAL RESALE BEHAVIORS

Study 1 tested the “reuse and resale cycle” effect (hypothesis 1) by tracking consumers’ actual resale behaviors. Participants were first asked to write down a product they had recently purchased, either a second-hand product or a regular one. Four months later, participants reported...
whether they had resold the product. We expected a greater proportion of participants who had resold the product if it was second-hand when they bought it.

Method

The study had a two-stage design. In stage 1, we opened the study for 1,000 workers on Amazon Mechanical Turk (MTurk). All participants were randomly assigned to one of the two (product: regular vs. used) conditions and recalled their last purchase. In the used condition, the product they purchased had to: (1) be a second-hand product, (2) be appropriate for reselling in the future, and (3) cost them more than US$10. In the regular condition, the product needed to satisfy only requirements (2) and (3). In both conditions, the participants were asked to write down the name of the product and to describe the product in detail (see web appendix A for the product category information). A total of 1,002 workers participated, and we excluded three participants who did not provide valid answers, leaving a total of 999 participants (see web appendix B for details).

Four months later, we invited all the 999 MTurk workers to participate in the second part, and 656 of them (335 females; $M_{age} = 42.23, SD = 12.70$) completed it. The participants first entered their MTurk ID, which then led them to their own original responses (including the product name and detailed description) in the first stage. After participants were reminded of the product information, they indicated whether they had already sold the product (yes/no), which is the key dependent variable. If the answer was “yes,” they further reported the resale price (US$); if the answer was “no,” they indicated whether they had a plan to resell the product in the future (yes/no).

Results and Discussion

Results of chi-square analysis showed that a greater proportion of participants who had purchased a second-hand product resold it, compared to their counterparts in the regular condition (13.4% vs. 7.0%; $\chi^2(1) = 7.41, p = .006, \Phi = 0.11$). These results were consistent with our prediction. We also analyzed other measures, including resale price, initial purchase price, and future resale plan, and reported the results in web appendix C.

By tracking consumers’ actual resale behaviors, study 1 provides initial evidence for hypothesis 1 in real life and establishes the external validity of the effect. However, study 1 had some limitations. First, the regular condition may have included some used products as well, although this constituted a more conservative test for our prediction. In addition, this study does not provide an explanation for the effect. We thus designed the following studies in more controlled settings to further test the main effect and the underlying mechanism.

STUDY 2A: USED COATS CONNECT LESS AND ARE RESOLD MORE

Study 2a aimed to further test the “reuse and resale cycle.” More specifically, we predicted consumers would be more likely to resell a coat if it was originally purchased as a previously used one (hypothesis 1). We also tested the underlying mechanism by directly measuring consumers’ perceived connection with the coat (hypothesis 2). In addition, we experimentally controlled for the purchase/resale price and the amount of time participants expected to own the product. To reduce the inferences for the initial second-hand purchase (e.g., financial/environmental concerns or product fit), which may also influence a subsequent decision, we specified the reason for the initial second-hand purchase to be product availability, an exogenous reason. Finally, we measured other factors that could potentially influence reselling intention, including the salience of the second-hand market, social desirability concerns, and frugality concerns.

Method

A total of 400 Prolific workers (259 females; $M_{age} = 42.23, SD = 13.59$) participated in the study. They were randomly assigned to two (coat: used vs. new) between-subjects conditions. We preregistered this study (AsPredicted #104637).

All participants read a scenario in which they went to a very cold place for winter. Before they started the trip, they purchased a North Face McMurdo Parka at a price of £245. They planned to use it for the whole winter. In the used condition, participants purchased “a slightly used one at a second-hand store,” which was classified as “Like New,” for an exogenous reason (i.e., “due to supply chain issues, a brand new one was not available”). In the new condition, participants purchased a new coat. All participants were told that they had enjoyed wearing the coat during the winter and learnt that the resale price of the coat in a similar condition to theirs was typically £160. Then, participants indicated their interest in reselling the coat ($1 = not at all, 9 = very much$). To understand the psychological process, we measured the connection with the coat using two items (“I feel a personal connection to this coat,” and “This coat is linked to me;” $1 = strongly disagree, 9 = strongly agree; r = 0.86, p < .001$). We also measured the alternative explanations, including the salience of the second-hand market, social desirability concerns, and frugality concerns ($1 = not at all, 9 = very much$; see web appendix D for the items).

Results and Discussion

As predicted, participants indicated a greater intention to resell the used coat ($M = 4.84, SD = 2.47$) than the new
one (\(M = 4.14, \text{SD} = 2.45; F(1, 398) = 7.98, p = .005; \eta^2_p = 0.02\)).

In addition, participants felt less connected with the used coat (\(M = 5.02, \text{SD} = 1.92\)) than with the new one (\(M = 5.77, \text{SD} = 1.92; F(1, 398) = 15.67, p < .001; \eta^2_p = 0.04\)). We further performed a mediation analysis using the PROCESS macro (model 4). We observed a significant indirect effect of coat manipulation (new = 0, used = 1) on reselling intention via connection with the coat (unstandardized \(\beta = 0.30, \text{SE} = 0.09, 95\% \text{ CI} = [0.15, 0.53]\), based on 10,000 bootstrap samples). We found no effect of coat manipulation on the alternative factors. Additional analyses are reported in web appendix E.

The results of study 2a confirmed the “reuse and resale cycle” and suggested that the weak connection with the product could at least partly explain the effect. We acknowledge that in this study, the same price for used and new products might create unequal perceived utility. In subsequent studies, we aim to address this issue with more rigorous control and provide more evidence of the proposed effect with different product stimuli.

**STUDY 2B: USED GAME CONSOLES CONNECT LESS AND ARE RESOLD MORE**

Study 2b aimed to further test the main effect and the underlying mechanism (hypotheses 1 and 2) with another product category, that is, electronic products (game consoles). Study 2b adopted similar methods to study 2a, with additional experimental control (i.e., product quality, warranty, and unused utility). Finally, we measured feelings of disgust to evaluate contamination concerns about used products as an alternative explanation (Argo, Dahl, and Morales 2006; Newman, Diesendruck, and Bloom 2011).

**Method**

A total of 429 university students (295 females; \(M_{\text{age}} = 21.40, \text{SD} = 3.00\)) from an online subject pool participated in the study and were randomly assigned to two (game console: used vs. new) between-subjects conditions. We preregistered this study (AsPredicted #105812).

All participants read that they had purchased a Nintendo Switch of the “most up to date model” (HAC-001[1-01]) two years previously. In the used condition, similar to study 2a, they purchased a slightly used one, which was classified as “Like New,” at a second-hand store due to the lack of availability of a brand-new one. In the new condition, to control for quality and utility, participants were told that they had purchased a new one with a minor defect due to the storage. All the participants were told that they had paid 85% of original retail price, which was equivalent to US$254 (in local currency). They had used the Nintendo Switch for two years (i.e., the warranty had expired). They noticed that the frequency of using it had decreased a lot recently. The current condition of the product was about 70% new, and the resale price of such a product in a similar condition was typically US$120 (in local currency). Participants were then asked to indicate their reselling intention (1 = not at all, 9 = very much). Using the same items as in study 2a, we measured the connection with the console as the proposed mediator (\(r = 0.82, p < .001\)). To check the effectiveness of the control for quality, we measured participants’ perceived quality of the console both for the initial purchase and when they considered reselling it (1 = very bad, 9 = very good). Finally, we measured a set of alternative factors, including the salience of the second-hand market, social desirability concerns, frugality concerns, and feelings of disgust (1 = not at all, 9 = very much; see web appendix D for the items).

**Results and Discussion**

As predicted, participants reported a greater intention to resell the used console (\(M = 5.22, \text{SD} = 2.11\)) than the new one (\(M = 4.75, \text{SD} = 2.29; F(1, 427) = 5.02, p = .026; \eta^2_p = 0.01\)). And the control for quality was successful. Participants perceived no difference in product quality between the conditions for both the initial purchase (\(M_{\text{new}} = 6.53, \text{SD} = 1.54 \text{vs. } M_{\text{used}} = 6.74, \text{SD} = 1.35; F(1, 427) = 2.42, p = .120\)) and the resale (\(M_{\text{new}} = 5.48, \text{SD} = 1.44 \text{vs. } M_{\text{used}} = 5.33, \text{SD} = 1.39; F(1, 427) = 1.25, p = .264\)).

In addition, participants felt less connected with the used console (\(M = 5.64, \text{SD} = 1.69\)) than with the new one (\(M = 6.00, \text{SD} = 1.55; F(1, 427) = 5.28, p = .022; \eta^2_p = 0.01\)). Mediation analysis using the PROCESS macro (model 4) revealed a significant indirect effect of console manipulation (new = 0, used = 1) on reselling intention via connection with the console (unstandardized \(\beta = 0.12, \text{SE} = 0.06, 95\% \text{ CI} = [0.02, 0.27]\), based on 10,000 bootstrap samples). We found no effect of manipulation on the alternative factors. Additional analyses are reported in web appendix E.

**STUDY 2C: USED COLLECTOR’S ITEMS CONNECT LESS AND ARE RESOLD MORE**

Study 2c aimed to further test the effect and the underlying mechanism in another consumption context, namely, the market of collector’s items. One may argue that consumers are reluctant to resell a product originally obtained brand new because they perceive things depreciate in an asymptotic manner (i.e., more depreciation occurs at the first resale compared to subsequent resales). To control for this issue, this study adopted a collector’s item, which does not depreciate with resale, as the stimulus.
Method

A total of 400 Prolific workers (238 females; $M_{age} = 43.05, SD = 14.45$) participated in the study. They were randomly assigned to two (LEGO set: used vs. new) between-subjects conditions. We preregistered this study (AsPredicted #105119).

All participants read that several years previously they had purchased a “collector’s edition of a themed LEGO set” just released that year at its retail price. In the used condition, they purchased a slightly used one due to the lack of availability of a brand-new one. In the new condition, they purchased a brand-new one. To control for depreciation, all participants then read that someone had recently expressed a desire to pay “a price slightly higher than its original retail price” to buy this collector’s edition ($M = 5.89, SD = 1.83$). They then reported their reselling intention ($F(1, 398) = 16.23, p < .001$; $\eta^2_p = 0.04$).

In addition, participants felt less connected with the used LEGO set ($M = 5.66, SD = 1.86$) than with the new one ($M = 6.29, SD = 1.62$; $F(1, 398) = 13.03, p < .001$; $\eta^2_p = 0.03$). Mediation analysis using the PROCESS macro (model 4) revealed a significant indirect effect of LEGO manipulation (new = 0, used = 1) on reselling intention via connection with the LEGO set (unstandardized $\beta = 0.36$, SE = 0.11, 95% CI = [0.15, 0.59], based on 10,000 bootstrap samples). We found no effect of manipulation on the alternative factors. Additional analyses are reported in web appendix D.

Results and Discussion

As predicted, participants showed a greater intention to resell the used LEGO set ($M = 5.33, SD = 2.50$) than the new one ($M = 4.31, SD = 2.55$; $F(1, 398) = 16.23, p < .001$; $\eta^2_p = 0.04$).

Across different product categories (clothes in study 2a, electronic products in study 2b, and collector’s items in study 2c), the results collectively supported the “reuse and resale cycle” and suggested connection with the product to be one underlying mechanism.

STUDY 3: AN INTERVENTION THAT UNDERMINES CONNECTION

Study 3 aimed to further test the proposed process (hypothesis 2) by introducing an intervention of undermining connection with the products. When facing this intervention, consumers were expected to report a high intention to resell their items, regardless of whether they had originally purchased the items second hand or brand new. In addition, we also measured the proposed mediator and aimed to test the moderated mediation effect.

Method

A total of 801 Prolific workers (475 females; $M_{age} = 42.73, SD = 13.52$) participated in the study and were randomly assigned to conditions in a 2 (coat: used vs. new) × 2 (connection: undermined vs. neutral) between-subjects design. We preregistered this study (AsPredicted #106393).

The participants first completed the connection intervention task. In the undermined connection condition, to inhibit participants from establishing a close connection with their possessions, we asked them to meditate and then write down why materialism (e.g., attaching too much importance to physical possessions) can be harmful to people’s well-being; those in the neutral connection condition wrote about a typical day in their lives. All participants were then presented with the same scenario as in study 2a, in which they purchased either a used or a brand-new coat. They then reported their reselling intention ($F(1, 397) = 10.04, p = .002$; $\eta^2_p = 0.01$) and their connection with the coat using the same items as in previous studies ($r = 0.86, p < .001$).

Results and Discussion

For intention to resell, a 2 × 2 ANOVA revealed the predicted coat manipulation × connection intervention interaction ($F(1, 797) = 4.12, p = .043$; $\eta^2_p = 0.01$; figure 1). In the neutral connection condition, participants showed a greater intention to resell the used coat ($M = 4.38, SD = 2.64$) than the new one ($M = 3.57, SD = 2.39$; $F(1, 797) = 10.04, p = .002$; $\eta^2_p = 0.01$). In the undermined connection condition, however, the difference became nonsignificant ($M_{used} = 4.50, SD = 2.58$ vs. $M_{new} = 4.42, SD = 2.57$; $F(1, 797) = 0.10, p = .758$).

We ran another 2 × 2 ANOVA on measured connection with the coat, and the results revealed a predicted interaction ($F(1, 797) = 5.12, p = .024$; $\eta^2_p = 0.01$). In the neutral connection condition, participants felt less connected with the used coat ($M = 4.94, SD = 2.01$) than with the new coat ($M = 5.89, SD = 1.83$; $F(1, 797) = 24.75, p < .001$; $\eta^2_p = 0.03$). In the undermined connection condition, however, the difference became nonsignificant ($M_{used} = 5.05, SD = 1.91$ vs. $M_{new} = 5.39, SD = 1.90$; $F(1, 797) = 3.23, p = .073$).

We performed a moderated mediation analysis using the PROCESS macro (model 8), with coat manipulation (new = 0, used = 1) as the IV, connection intervention as the moderator (neutral = 0, undermined = 1), measured connection as the mediator, and reselling intention as the DV. The results revealed a significant moderated mediation effect ($\beta = -0.24, SE = 0.11, 95% CI = [-0.49, -0.04]$; based on 10,000 bootstrap samples). An indirect effect
through measured connection was observed for participants in the neutral connection (unstandardized $\beta = 0.38$, SE = 0.09, 95% CI = [0.21, 0.58]), but became nonsignificant in the undermined connection condition ($\beta = 0.14$, SE = 0.08, 95% CI = [−0.01, 0.29]).

With a moderation-of-process design, study 3 offered additional evidence for the connection process (hypothesis 2) and provided an intervention approach to encourage resales. We expect that other interventions would work along a similar logic to the current study regarding the connection process. Future research may test different possibilities.

**STUDY 4: THE MODERATING ROLE OF SELF-EXTENSION TENDENCY**

In study 4, we aimed to replicate the previous findings with another product category (bike) and test the moderating role of self-extension tendency (hypothesis 3). We expected that consumers with a very high self-extension tendency would tend to link themselves with their possessions in general, no matter whether those possessions were purchased used or new. Thus, the proposed effect should be mitigated for these consumers.

**Method**

A total of 401 MTurk workers (192 females; $M_{age} = 40.51$, SD = 12.28) participated in the study and were randomly assigned to the used or new condition in a 2 (bike: used vs. new, between factor) × (self-extension tendency, measured factor) design. We preregistered this study (AsPredicted #96272).

The participants read a scenario in which they had purchased either a used or a new bike two years previously on Amazon at a price of US$250. They recently had ridden the bike less frequently, although it still functioned well. They then reported their interest in reselling it on Amazon at a price of US$100 (1 = not at all, 9 = very much).

Finally, we measured the participants’ self-extension tendency using an eight-item scale ($x = 0.96$; $1 = strongly disagree, 9 = strongly agree$) adopted from Ferraro et al. (2011), capturing the extent to which participants generally use possessions to define the self.

**Results and Discussion**

Results of a one-way ANOVA showed a greater intention to resell the bike in the used condition ($M = 5.37$, SD = 2.47) than in the new condition ($M = 4.58$, SD = 2.49; $F(1, 399) = 10.15, p = .002; \eta^2_p = 0.03$). The results were consistent with those in our previous studies.

We then examined whether the main effect of bike manipulation on reselling intention was contingent on participants’ self-extension tendency by conducting a regression analysis. Indicator variables of bike manipulation (0 = new, 1 = used), mean-centered self-extension tendency, and their interaction term were regressed on reselling intention. This analysis yielded a significant main effect of bike manipulation ($\beta = 0.79$, SE = 0.25; $t = 3.24$, $p = .001$) and an interaction effect ($\beta = -0.26$, SE = 0.12; $t = 2.04$, $p = .042$), as predicted in hypothesis 3. Probing the interaction using floodlight analysis revealed that the effect of product manipulation was robust among participants who had self-extension tendency scores below 6.21, which covered 67.33% of all participants. However, the effect diminished among those whose self-extension tendency scores were above 6.21 (figure 2).

Study 4 confirmed that consumers were more likely to resell a product purchased second hand when their self-extension tendency was low or moderate. However, the effect diminished when such a tendency was rather high. Interestingly, in this study, although reselling intention for the second-hand product decreased as the self-extension tendency increased, there was no such relationship for the new product. Be that as it may, we do not predict that the “new product” line should always be flat (e.g., the slope might change for different stimuli). We suspect that the slope depends on whether this new product falls into the selective set of possessions for consumers with a relatively low self-extension tendency.

**GENERAL DISCUSSION**

We identify a “reuse and resale cycle” effect and explore its underlying mechanism. Consumers are more willing to resell a product that was originally obtained second hand, compared to a product obtained brand new. Such an effect occurs in actual resale behavior (study 1) and is confirmed across various product categories (self-reported product categories, coat, game console, collector’s item, and bike; studies 1–4). One explanation for this effect is consumers’ relatively weak connection with the second-hand products (studies 2–3), and thus, the effect diminishes when
consumers’ self-extension tendency is high (study 4). Through the studies, we also showed that the phenomenon and the proposed process still held for second-hand products, even when other concerns that may be raised during a second-hand transaction were not apparent.

The current research advances the understanding of reuse and resale behaviors. The initial purchase of a second-hand product prompts a consumer to resell the item in the future, potentially leading to the same behavioral pattern among subsequent consumers. The findings have implications for consumer well-being, that is, avoiding the retention of excessive possessions, which has been shown to have many dark sides (Donnelly et al. 2016; Haws and Reczek 2022). This reuse and rescale cycle could also help consumers develop sustainable lifestyles by cultivating a sharing economy lens in their consumption and even a circular economy mindset. At the market level, this cycle potentially helps boost second-hand supply, leading to a healthier development of the second-hand market. Those changes could facilitate a consumption paradigm shift toward more used products and contribute to society’s sustainability in the long run.

Open Questions and Future Directions

In our studies, we observed consistent evidence for the “reuse and rescale cycle” and the consumer connection process. We acknowledge that this process may not be the sole mechanism, but it is the one for which we observed clear support to explain the phenomenon. Multiple mechanisms are likely at play, especially that the “second-hand history” is often (although not always) accompanied by other changes, for example, value and quality perceptions, reminders of the second-hand market, social desirability concerns, frugality concerns, and depreciation. In the current research, we controlled for these potentially accompanying factors and found that the second-hand history could still affect reselling decisions because it could lower consumers’ connection with a product. Investigating more complex situations and other processes could be an intriguing direction for future research. At the same time, we believe that, to achieve further external validity, it would be meaningful for future research to examine more real behavior and market-level data in various contexts.

There are several potentially promising ways to further extend the model. First, in this research, we treat the initial purchase of a second-hand product as exogenous (e.g., availability reason in studies 2–3). However, consumers may buy second-hand products for various reasons in the first place, including financial reasons, environmental concerns, and experiences with resale markets (Garvey and Bolton 2017). Those reasons may also influence the subsequent reselling intention. We believe that it would be interesting for future research to incorporate the initial purchase decisions to achieve a more extensive model. Second, the present research focuses on reselling and uncovers a reuse and rescale cycle. To the extent that a weaker connection suggests higher willingness to detach from a possession, the phenomenon could have implications for other consumer disposal behaviors (e.g., donating, recycling, trashing, and gifting; Dommer and Winterich 2021). To encourage consumers to choose an appropriate disposal method (e.g., reselling, not trashing), firms are suggested to provide more relevant channels (e.g., convenient resale platforms) and make them readily accessible to consumers. It would be meaningful for future research to explore the broader implications for other disposal behaviors.

In the current research, we followed common practice and referred a second-hand product to a product that was used by a previous owner. However, an unanswered question is how consumers treat a product owned by someone but has never been used, that is, a “still-in-the-box” product. We conducted a pilot test to explore this case (see web appendix F for details). Relatedly, how consumers perceive open-box items (opened but not used), refurbished products, new products using recycled materials, or even products pieced together from used items (e.g., Patagonia’s recrafted collection) also carries significance for future research to explore.

Finally, this research calls to mind a fundamental question: what can be done to promote the second-hand market in the future? While many existing monetary rewards (e.g., tax incentives for second-hand trade) did not receive desirable responses, weakening consumers’ attachment to material possessions could be worth trying. Other methods to stimulate this market could also be a fruitful direction for future research.

DATA COLLECTION STATEMENT

The first and second authors collected the data for studies 1 and 4 in the article and the study in the web appendix.
via MTurk from December 2021 to August 2022. The first and second authors collected the data for studies 2a, 2c, and 3 via Prolific from August 2022 to September 2022. The first and second authors collected the data for study 2b with a student subject pool at the Hong Kong Polytechnic University from August to September 2022. The data for all studies were analyzed and discussed on multiple occasions by both authors. The data are currently stored in a project directory on the Open Science Framework.

REFERENCES


