A Social Perception Theory of the Endowment Effect

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ABSTRACT

In nine experiments (total $N = 2107$, with British, French, and U.S. American participants), this paper proposes and tests a social perception theory of the endowment effect. First, the authors show that buyers are more likely to focus on themselves, and that sellers are more likely to focus on buyers. Then, the authors show that the endowment effect is mediated by misperceptions that sellers have about buyers' features. Sellers base their willingness-to-accept in part on their biased perceptions of the buyers. Since individuals misconstrue others in many ways that contribute to increases in features linked with willingness-to-pay, this contributes to the endowment effect. Consistent with this explanation, the authors find that selling prices can be moderated by changing the description of the counterpart in several ways, to the point of reversing the endowment effect for positively valued goods. Further, the authors find a stronger endowment effect for products considered highly materialistic. Theoretically, these findings support a new explanation for the endowment effect and connect research on the endowment effect with research about misperceptions of others. Practically, the authors discuss ways of improving negotiations and pricing centered around correcting misperceptions of others.

Keywords: endowment effect, willingness-to-pay, willingness-to-accept, misperceptions, bias

Mr. R bought a case of good wine in the late '50's for about \$5 a bottle. A few years later *his wine merchant* offered to buy the wine back for \$100 a bottle. He refused, although he has never paid more than \$35 for a bottle of wine.

Thaler (1980), p. 44 (italics added for emphasis)

Imagine you want to sell a bottle of wine. Typically, you would be willing to accept more money for it than you would be willing to pay for it. This systematic phenomenon is called the endowment effect: in many transactions, sellers are willing to accept more money to sell a product than they are willing to pay for it (Thaler 1980). But do buyer's features matter for the endowment effect? For instance, would knowing that the buyer is a wine merchant influence how much you are willing to accept for a wine bottle? In this paper, we propose and test a social perception theory of the endowment effect. This theory makes several proposals, which we test in a series of studies. The first is that when people are selling, they focus more on others to come up with a valuation, and when they are buying, they focus more on themselves to come up with a valuation. The second is that ingrained misperceptions of others' features – for instance, perceptions of materialism, product usefulness, and willingness-to-pay – play a central role in the endowment effect.

We suggest consumers engage in price discrimination (i.e., charging different prices to different people, depending on judgments of the prospective customer's willingness-to-pay [WTP]; Varian 1989) when considering what price they would accept to sell a product (i.e., willingness-to-accept [WTA]). We argue that, in the same way that firms attempt to charge a higher price for those willing to pay it and offer a lower price to induce purchase by those who otherwise would not transact, sellers in the endowment effect paradigm use their beliefs about prospective buyers to inform their selling prices.

Thus, while buyers consider how *they* value the product, we argue that sellers consider *buyers'* valuation of the product; whereas buyers think of *themselves*, sellers think of *others*. We argue that the endowment effect can be construed in terms of an interpersonal valuation discrepancy and therefore is linked to related interpersonal perception biases. There are many features that people may connect to how much they are willing to accept to sell a certain product to others. We focus on three that have been suggested by prior literature – perceived WTP, perceived product usefulness, and perceived materialism. Others could play situation-specific roles; we are not making the claim that misperceptions of the three features listed above are the only explanations for the endowment effect. We believe that each and any one of them (and possibly additional ones) may influence the endowment effect. However, we focus on the three suggested – but not yet tested – by prior literature that have the most plausible links to the endowment effect per our theory.

Specifically, we suggest that an overestimation of others' perceived materialism may partially underlie the endowment effect. Because people overestimate others' materialism, and more materialistic individuals have a greater affinity for products, they also believe others would find those products more useful, and others would pay more for those products (Ziano and Villanova 2020). Because others are expected to be willing to pay more for those products, this creates an opportunity for sellers to price discriminate and report WTA that is higher than their own WTP. Notably, this process bears out because sellers think about others while buyers think about themselves when valuing the product, rendering the process subject to these misperceptions. Consequently, we show that this bias in perceived materialism helps explain the buyer-seller valuation gap.

Because buyers are less likely to focus on others, while sellers consider *buyers'* relevant features, manipulating beliefs about others may affect the magnitude of the endowment effect. For instance, sellers usually believe others (buyers) are more materialistic

and are therefore willing to charge higher prices, resulting in the classic endowment effect where WTA is greater than WTP. However, when buyers are perceived to be very non-materialistic, sellers are willing to charge lower prices, resulting in a *reversed* endowment effect where WTP is greater than WTA. Consistent with the importance of perceived materialism, we also show that the endowment effect varies with respect to a critical product characteristic- the extent to which the product supports the pursuit of materialistic values. Products that are more suited to the consumption style of materialists are more prone to the endowment effect, while products that are less suited to the consumption style of materialists are less conducive to generating an endowment effect. We find similar results with manipulated perceptions of product usefulness and WTP, two features that people tend to overestimate in others.

This is a significant addition to research on the endowment effect as prior explanations have mostly emphasized differences in how the target *product* is viewed by the seller or buyer, but we show that the way the seller views the *buyer* is a cause of the endowment effect. Further, by showing that misperceptions of others' materialism, product usefulness, and WTP contribute to the endowment effect, we connect two important streams of literature that have - until now - proceeded in parallel: the literature on self-serving biases in social comparisons (Alicke 1985; Kruger 1999; Kruger and Dunning 1999) and the literature about the endowment effect (Kahneman et al. 1990, 1991; Thaler 1980). We also identify an important source of product-based heterogeneity in the endowment effect. Finally, we relate these results to prior explanations for the endowment effect and discuss how these findings serve to promote future research.

Our practical implications range from contexts such as negotiations and pricing to perceptions of others. Whenever two actors need to decide on a willingness-to-pay and a willingness-to- accept, the self-serving biases that are already present may play a role, and

changing them may produce more favorable outcomes for one of the parts involved. We now turn to the theoretical background for this research, in which we first cover existing explanations of the endowment effect, and then we propose a social perception theory of the endowment effect.

THEORETICAL BACKGROUND

The endowment effect is the robust empirical finding that sellers appear to value products more than buyers (Thaler 1980). Sellers' willingness-to-accept (WTA) often exceeds buyers' willingness-to-pay (WTP). The endowment effect has implications for psychology, marketing, economics, and even public policy as it suggests difficulties for price-based market systems to efficiently allocate resources. Further illustrating its importance, the endowment effect has been studied extensively over several decades, with many explanations offered to account for it.

Explanations for the Endowment Effect

Seven major explanations exist: 1) loss sensitivity, 2) strategic responding, 3) differences between buyers and sellers in information processing, 4) self-enhancement, 5) psychological ownership, 6) attribute sampling bias, and 7) self-extension. To provide an overview, we discuss each briefly (for more detailed reviews and additional information on the nuances of which explanations are better-suited to explain the full slate of empirical findings surrounding the endowment effect, see Morewedge and Giblin 2015 and Villanova 2019).

The loss sensitivity (or loss aversion) explanation argues that selling is inherently seen as a loss, whereas buying is seen as a gain, leading to sellers compensating with higher WTA values (Brenner et al. 2007; Kahneman et al. 1990, 1991; Strahilevitz and Loewenstein 1998; Thaler 1980). The strategic responding explanation argues that buyers and sellers strategically misrepresent their valuation as higher or lower than it truly is to avoid getting a bad deal in what they misbelieve is a negotiation (Isoni 2011; Plott and Zeiler 2005, 2007; Weaver and Frederick 2012). The role-based information processing explanation suggests that the endowment effect arises from differences in how the product is viewed by virtue of being put in the position of buyer or seller (Carmon and Ariely 2000; Nayakankuppam and Mishra 2005).

The self-enhancement explanation suggests that selling presents a self-threat that sellers compensate for with higher WTA values (Chatterjee et al. 2013; Dommer and Swaminathan 2013; Maddux et al. 2010). The psychological ownership explanation, which has enjoyed much attention in recent years, argues that what is critical to valuation discrepancies such as the endowment effect is the feeling that a consumer has when they believe a target object is perceived to be “theirs” (Morewedge et al. 2009; Reb and Connolly 2007; Shu and Peck 2011).

The attribute sampling bias perspective posits that various antecedents can make different product attributes systematically more or less accessible in the minds of consumers (Morewedge and Gliblin 2015). Bias in attribute sampling can arise from ways consumers relate to the product (e.g., greater psychological ownership) or from the roles they find themselves in (e.g., being a seller vs. buyer). Finally, the self-extension perspective suggests that valuation discrepancies may result from differences in the degree of extension of the self into an object, which either adds a positive self-association or prompts different processing strategies during product valuation (Villanova 2019).

These prior explanations (with the exception of strategic responding, which we return to in the General Discussion) all emphasize differences in how the target *product* is viewed by the seller or buyer. We suggest that a difference in how the target *buyer* is viewed is relevant as well. More specifically, we suggest that differences in the perceived materialism of the buyer can contribute to the endowment effect. This hypothesis is motivated by research on misperceptions of others, which we turn to next.

Perceptions of Others and Perceived Materialism

Individuals compare themselves favorably (and inaccurately) to others. As individuals are driven to maintain high self-esteem and a positive self-concept (Van Lange 1991), they perceive themselves as above the average person on positive traits such as loyalty and below the average person on negative traits such as rudeness (Alicke 1985; successfully replicated in Ziano, Mok, and Feldman 2020). This self-serving tendency can underpin interpersonal discrepancies in perceptions of various characteristics. Individuals believe that they are more morally virtuous than others (Allison, Goethals, and Messick 1989), that they are smarter than average, and that they are smarter than they actually are (Kruger and Dunning 1999). Most drivers believe they are better drivers than average (Roy and Liersch 2013) and most college professors believe that they are better teachers than their colleagues (Cross 1977).

Such discrepancies also extend to consumer settings. For instance, consumers think that others are more variety-seeking than them (Ratner and Kahn 2002) and they think that performance-enhancing drugs are a natural enabler of their own abilities, but an unfair embellishment of other people's skills (Williams and Steffel 2014). Further, consumers believe that others have more intense reactions to experiences (Jung et al. 2020), and they

assume that others would find the same product more useful than they themselves would (Ziano and Villanova 2020).

The “X effect,” or overestimating others’ willingness-to-pay, is also an example of an important consumer-centric discrepancy in perceptions of others (Frederick 2012; Matthews, Gheorghiu, and Callan 2016). Interestingly, although overestimation of others’ WTP has been hypothesized to relate to the endowment effect (Frederick 2012), to date there has been no theory causally linking mispredicting others’ WTP and the endowment effect. This is surprising, considering that in the earliest formulation of the endowment effect (Thaler 1980, on which we built in Study 4a), participants were asked to imagine that they are buying and selling a bottle of wine *from a wine merchant* rather than to simply state their WTP and WTA for the bottle in a vacuum. In this formulation, people may be likely to focus on what they think *of the wine merchant* to establish their WTA. Therefore, the transaction counterpart features may play a role. As mentioned before, explanations for the endowment effect have focused on buyer-seller differences in viewing the *product* rather than a bias in how the seller views the *buyer*. We propose that when buying and selling, people focus on their own and other people’s features to a different extent. This is the first novel result that the present paper seeks to establish.

H1: When people are selling, they focus more on others (i.e., on the buyers’ features) compared with the buyer role; when people are buying, they focus more on themselves compared with the seller role

We argue that as long as the seller considers their perceptions of the *buyer* (an other) in generating their WTA while the buyer considers themselves (self) in generating their WTP, inaccurate perceptions of others may help drive the endowment effect. What perceptions are

relevant to judging how much the buyer may value the product? Ziano and Villanova (2020) show that a discrepancy in perceived materialism contributes to overestimating others' product usefulness and WTP, or how much they value the product. In general, people believe that they are less materialistic than their counterparts. Since materialistic people are stereotyped as particularly liking and appreciating products (Holt 1995; Shrum et al. 2013, 2014), people believe that others will use and value the same products more than they would. It is important to underline that these are just some of the factors that laypeople may connect with how much they believe others would be willing to pay for products. Many other features may be linked to how much people think others will be willing to pay. Further, it is crucial to show that seller's overestimation of buyers' WTP influences sellers' WTA. While this proposition has been suggested before (Frederick 2012), to the best of our knowledge, it has not been empirically tested. Formally,

H2a: Sellers' estimates of buyers' WTP influence sellers' WTA

The above hypothesis, if correct, naturally suggests that manipulating sellers' information about the level of buyers' WTP will causally increase or decrease sellers' WTA.

H2b: Manipulating information about buyers' WTP will cause increases and decreases in sellers' WTA

Coupled with our argument here that sellers and buyers differ in *whom* they think about when reporting their selling and buying prices, we suggest that inaccurate perceptions of others' features contribute to the endowment effect. As we mentioned earlier, previous research (Ziano and Villanova 2020) showed that people think that others would find the same products more useful. Perceived product usefulness is another factor that may be causally

connected to how much people believe others will pay for the same products. If this is correct, informing participants about how much others would find the same product useful may affect how much people are willing to accept for the same product. Thus:

H3: Manipulating information about buyers' perceptions of product usefulness will cause increases and decreases in sellers' WTA

This difference in perceived usefulness stems from an antecedent difference in others' perceived materialism (Ziano and Villanova 2020). If our reasoning is correct, then sellers' WTA should depend on their perceptions of the buyer's level of materialism, such that WTA would be lower to sell to a buyer described as a less materialistic person but higher to sell to a buyer described as highly materialistic:

H4a: Describing a buyer as more (vs. less) materialistic will result in a higher selling price, i.e., WTA

H4b: The endowment effect is mediated - in part - by an overestimation of other's materialism

To drive this point home, when sellers have reason to believe the buyer is more materialistic, the higher WTA should result in a strong endowment effect. When the buyer is less materialistic, the lower WTA should result a weaker endowment effect. If the indicator that the buyer is less materialistic is so strong as to even overcome the baseline tendency to believe others are more materialistic and instead lead to believing the buyer is less

materialistic than they are, WTA could be reduced below WTP and produce not just a weaker but reversed endowment effect:

H5: Describing a buyer as more materialistic (vs. as an average person) will result in a stronger endowment effect, but describing a buyer as less materialistic (vs. as an average person) will result in a weaker, even reversed, endowment effect

Findings supporting this hypothesis would be important because they would provide additional process evidence of the perceived materialism discrepancy we suggest contributes to the endowment effect. Additionally, they would exhibit a novel reversed endowment effect for a positively-valued product, something our theorizing suggests is possible but is generally not contemplated by previous explanations (we return to this point in the General Discussion).

It is also possible that different products are more or less susceptible to the influence of the interpersonal biases we contemplate in this research. This would suggest the endowment effect would vary across products. If consumers believe that others are more materialistic than they are, they should also believe that others are especially likely to appreciate products that are representative of materialistic values, such as jewelry (van Boven et al. 2010), or luxury products (Fournier and Richins 1991; Ziano and Villanova 2020). Thus, biases due to a discrepancy in perceptions of materialism should be accentuated for products that are more (vs. less) materialistic values aligned. This should lead to a stronger endowment effect for a product more aligned with materialistic values (such as a Louis Vuitton bag) than for a product less aligned with materialistic values (such as a reusable bottle).

H6: More (vs. less) materialistic values aligned products produce stronger endowment effects

Findings supporting this hypothesis would offer process-relevant moderation evidence and identify a source of heterogeneity with important implications for consumer valuation gaps. We address these and other contributions in detail in the General Discussion.

Next, we present our empirical findings.

STUDY OVERVIEW

In nine studies (summarized in Table 1), using multiple products and participants from the U.S.A., U.K., and France, we investigate how the perceived materialism of the buyer contributes to the endowment effect. Study 1 establishes that people are more likely to focus on the buyer when they are establishing their WTA, and more focused on themselves when they are establishing their WTP; we replicate this in Study W1. Study 2 finds that people believe that a number of personal features affect others' WTP and that perceived usefulness and materialism are seen as very important features for this.

In Studies 3a-c, we show the influence of several features on WTA. Study 3a shows that buyers' WTP influences WTA. The same is found for perceptions of product usefulness (Study 3b). In Study 3c, in a sample of French students, we find that the materialism of the buyer affects WTA, hinting that in turn the endowment effect may also be a function of perceptions of the buyer.

In Studies 4a-c, we provide a suite of process evidence for materialism. In Study 4a, in a sample of American adults, we find that the perceived materialism of the buyer statistically mediates the endowment effect. In Study 4b, we provide additional evidence for the causal role of materialism by manipulating buyer materialism and observing its effect on product valuation. In Study 4c, we find that more materialistic products are more susceptible to the

endowment effect, providing process-relevant moderation evidence supporting the contributory role of perceptions of buyer materialism in the endowment effect.

Data and analyses are available at this anonymized link:

https://osf.io/ugkx7/?view_only=7f8a83f0bf7d419ca19847d41a34ef67/

TABLE 1
STUDY OVERVIEW

Study	N (Participants)	Main result
Study 1	308 (Prolific)	People think more about others when selling than when buying; similarly likely to think about the product
Study 2	300 (MTurk)	People link several personal features with perceived WTP
Study 3a	61 (French students)	Manipulated buyer WTP affects WTA
Study 3b	61 (French students)	Manipulated buyer product usefulness affects WTA
Study 3c	60 (French students)	Manipulated buyer materialism affects WTA
Study 4a	401 (MTurk)	Perceived buyer materialism mediates the endowment effect
Study 4b	298 (MTurk)	Manipulating buyer materialism modulates the endowment effect
Study 4c	274 (MTurk)	Product material values alignment moderates the endowment effect
Study W1	281 (MTurk)	People think more about others when selling than when buying

STUDY 1 – BUYERS AND SELLERS FOCUS ON DIFFERENT PEOPLE

The objective of this study was to test whether buyer and seller have a different focus on the product, themselves, or the counterpart.

Method

Participants. We recruited 308 U.K. residents from Prolific (102 males, 206 females, $M_{age} = 34.97$, $SD_{age} = 11.47$). None of them selected “Yes” as a response to the question “Have you ever had a fatal heart attack?” that we employed as an attention check, so we retained them all for analyses.

Procedure. Participants were randomly assigned to one of two conditions, buyer and seller. In both conditions, they were showed a picture of a product (binoculars). In the buyer condition, they were asked to imagine they wanted to buy the binoculars and were deciding how much they were willing to pay for it. In the seller condition, they were asked to imagine they were selling the binoculars and that they were deciding how much they were willing to accept for it. Participants read the following scenario (underlined in brackets, the seller condition):

Imagine you are buying (selling) a product (binoculars). You are deciding how much you are willing to pay (accept) for it

Measures. Then, participants were asked three questions, in randomized order. As a measure of focus on the product, participants were asked “When deciding how much you are willing to pay/willing to accept for the binocular, do you take into account features of the product?”; as a measure of focus on the self, participants were asked “When deciding how

much you are willing to pay/willing to accept for the binocular, do you take into account how much you value the product?"; as a measure as a measure of focus on the other, participants were asked "When deciding how much you are willing to pay/willing to accept for the binocular, do you take into account how much the seller/buyer values the product?". All items were 7-point scales anchored at 1 (*not at all*) and 7 (*very much*).

Results

Focus on the product. Participants rated that they were similarly likely to focus on the product in the buyer condition ($M = 6.13$, $SD = 0.92$) compared to the seller condition ($M = 5.95$, $SD = 1.02$), $t(306) = 1.22$, $p = .11$, $d = 0.18$.

Focus on the self. Participants rated that they were more likely to focus on the self in the buyer condition ($M = 5.93$, $SD = 1.16$) than in the seller condition ($M = 5.44$, $SD = 1.25$), $t(306) = 3.33$, $p < .001$, $d = 0.40$.

Focus on the other. Participants rated that they were more likely to focus on the other person in the transaction in the seller condition ($M = 4.94$, $SD = 1.54$) compared to the buyer condition ($M = 3.73$, $SD = 1.64$), $t(306) = -6.69$, $p < .001$, $d = 0.76$.

Discussion

This study shows that buyers are more likely than sellers to focus on how much they value the product, and that sellers are more likely than buyers to focus on the other person (i.e., the buyer) values the product in the transaction.

Study 1 provides support that when selling, people are attentive to the buyer and what the buyer values in the product (i.e., thinking about others); when buying, people primarily think about themselves. Further, we found no evidence supporting the notion that people are

more or less focused on the product when buying or selling. In an additional study ($N = 281$, MTurk, reported in full in the Web Appendix as Study W1), we replicated this result using a relative measure of focusing on oneself vs. the other.

Next, we test whether people believe that other's specific traits influence their WTP for products.

STUDY 2 – PEOPLE BELIEVE MANY TRAITS INFLUENCE OTHERS' WTP

The objective of this study was to test whether people believe that some other people's traits influence their WTP.

Method

Participants. We recruited 300 participants from MTurk. Two participants failed the attention check at the end of the survey, by replying “Yes” to the question “Have you ever been on the planet Mars?” This left 298 valid participants (160 males, 135 females, 2 other, 1 preferred not to disclose, $M_{age} = 39.65$, $SD_{age} = 11.35$).

Procedure. Participants were shown the following instructions:

The following are traits with which one could describe other people. How much do you think these traits influence how much other people are willing to pay for products, in general?

Per each trait, please indicate whether each trait influences how much other people would be willing to pay for products, on this scale that goes from 1 - Does not influence how much others are willing to pay at all to 7 - influences how much others are willing to pay a lot.

Then, they were shown 40 of the 149 traits from Alicke (1985), plus “materialism” and “would find the product useful” from Ziano and Villanova (2020) in randomized order. This ensured that each trait’s perceived influence on WTP would be evaluated by about 80 participants.

Results

Overall, participants seemed to consider most traits as influencing other people’s WTP for products to a certain extent, as a large majority of them had an average value above the scale midpoint (4), and many of them had values above 5. “Materialistic” had an average of 5.33, and “finding product useful” had an average of 6.05. Other notable traits that were perceived as strongly influencing WTP were “fashionable” ($M = 5.44$); “self-disciplined” ($M = 5.39$); “thrifty” ($M = 5.33$); “wise” ($M = 5.31$); and “extravagant” ($M = 5.30$). A complete list is available in the Web Appendix and depicted in Figure 1.

FIGURE 1
PEOPLE BELIEVE MANY PERSONAL FEATURES INFLUENCE OTHERS’ WTP

Discussion

This study shows that people hold strong beliefs that a wealth of traits influence other people's WTP. This study shows the inherently social aspect of other's WTP estimations. They are perceived as being inherently linked to other people's features. The main objective of the next studies is to provide theoretical support for our psychological processes, by investigating whether others' perceived WTP, materialism, and product usefulness could influence WTA. To do so, we instructed participants imagine alternative targets who have different features and about whom they have different information. Imagining people with different features is a task that individuals engage in quite often, as evidenced by research on the topic. In fact, this methodology of imagining an alternative person, with different features, is a staple in the study of self-other psychology. For instance, Deri et al. (2019) asked participants to imagine target others who differed on skill levels; Polman et al. (2020) asked participants to imagine target others varying on features such as uniqueness and malleability; Kuo et al. (2020) asked participants to imagine people varying on a status dimension. Thus, we utilize this approach in our studies.

STUDY 3A – THE CAUSAL EFFECT OF PERCEIVED WTP ON WTA

As we made the argument that sellers are focused on others, with this study we begin our investigation on the features that can influence WTA. It is important, as a first step, to test whether perceptions of other people's WTP influences seller's WTA. Therefore, the objective of this study is to directly test whether declared WTP of the target participant affects WTA. This study was preregistered at <https://aspredicted.org/blind.php?x=di7gm2>.

Method

We recruited 61 participants in a French business school (25 males, 36 females, $M_{age} = 20.2$, $SD_{age} = 0.91$). Participants were shown a product (a binocular) and told to imagine that they were given the product new and unboxed. Then, they were shown the description of two participants (named person #1 and person #2): they were told that participant #1, in a previous survey, declared that they would pay €35 for the binoculars, and that person #2, in a previous survey, declared that they would pay €150 for the binoculars. Then, they were asked how much they would be willing to accept for the pair of binoculars from participant #1 and from participant #2, on two separate sliders from €0 to €300. Finally, they rated how much person #1 and person #2 were willing to pay on two items anchored at 1 (*not at all*) and 7 (*very much*), as a manipulation check.

Results

Manipulation check. A paired- samples t-test showed that participants rated the WTP of person #1 ($M = 2.53$, $SD = 0.98$) as lower than the WTP of person #2 ($M = 5.54$, $SD = 1.03$), $t(60) = 17.02$, $p < .001$, $d = 2.18$.

WTA. A paired- samples t-test showed that participants were willing to accept less money for the binocular from person #1, who had declared a lower WTP ($M = 72.54$, $SD = 40.81$), compared to person #2, who had declared a higher WTP ($M = 137.21$, $SD = 33.79$), $t(60) = -11.20$, $p < .001$, $d = 1.43$.

Discussion

This study shows that sellers' WTA is causally influenced by perceived WTP. This is a crucial step in our reasoning, as it reinforces the notion that the consideration of others influences WTA. Next, we turn to perceived product usefulness.

STUDY 3B – THE CAUSAL EFFECT OF PERCEIVED PRODUCT USEFULNESS ON WTA

The objective of this study is to show that manipulating perceptions of the buyer's product usefulness influences seller's WTA. This study was preregistered at <https://aspredicted.org/blind.php?x=be3sf2>.

Method

We recruited 61 students at a French business school (21 males, 40 females; $M_{age} = 20.15$, $SD_{age} = 0.75$). They were told to imagine they received a pair of binoculars, new and unboxed. They were given the description of two people, person #1 and person #2, and told that person #1 would not find the product useful at all, and that person #2 would find the product very useful. Then, they were asked to indicate their willingness to accept for the binoculars from person #1 and person #2 on two sliders from €0 and €300. Finally, as a manipulation check, participant rated how useful person #1 and person #2 would find the product useful on two 7-point items anchored at 1 (*not at all*) and 7 (*very much*).

Results

Manipulation check. A paired-samples t-test showed that participants indicated lower product usefulness for person #1 ($M = 1.51$, $SD = 0.83$), who indicated they would not find the product useful at all, compared to person #2 ($M = 6.39$, $SD = 1.20$), who indicated they would find the product very useful, $t(60) = 22.39$, $p < .001$, $d = 2.87$.

WTA. A paired-samples t-test showed that participants indicated lower WTA for person #1 ($M = 94.89$, $SD = 47.75$), who indicated they would not find the product useful at all, compared to person #2 ($M = 139.18$, $SD = 61.59$), who indicated they would find the product very useful, $t(60) = 6.08$, $p < .001$, $d = 0.79$.

Discussion

This study shows that manipulating the perceived buyer product usefulness affects WTA, which is higher when the buyer is described as finding the product more useful, and lower when the buyer is described as finding the product less useful. In the next study, we turn to perceived buyer materialism.

STUDY 3C – THE CAUSAL EFFECT OF PERCEIVED MATERIALISM ON WTA

The objective of this study is to show that perceptions of the buyer's materialism influences WTA. This study was preregistered at <http://aspredicted.org/blind.php?x=cu9s7f>.

Method

We recruited 60 students at a French business school (20 males, 40 females, $M_{\text{age}} = 20.03$, $SD_{\text{age}} = 0.75$). They imagined they had received a pair of binoculars. They were given the description of two people, person #1 and person #2, and told that person #1 had been classified as a non-materialistic person, having scored 2.5/10 on a materialism scale in a previous survey, and that person #2 had been classified as a very materialistic person, having scored 9.5/10 on a materialism scale in a previous survey. Then, they were asked to indicate their WTA for the binoculars from person #1 and person #2 on two sliders from €0 and €300. Finally, as a manipulation check, participants rated how materialistic person #1 and person #2 were, on two seven-point items anchored at 1 (*not at all*) and 7 (*very much*).

Results

Manipulation check. A paired-samples t-test showed that participants indicated lower materialism for person #1 ($M = 2.15$, $SD = 1.04$), who had been classified as a non-materialistic person, compared to person #2 ($M = 5.92$, $SD = 1.21$), who had been classified as a very materialistic person ($t(59) = 14.15$, $p < .001$, $d = 1.83$), confirming the success of our manipulation.

WTA. A paired-samples t-test showed that participants indicated lower WTA for person #1 ($M = 92.00$, $SD = 59.79$), who had been classified as a non-materialistic person, compared to person #2 ($M = 139.97$, $SD = 66.06$), who had been classified as a very materialistic person ($t(59) = 6.86$, $p < .001$, $d = 0.89$).

Discussion

In support of our reasoning, this study shows that the perceived materialism of the buyer affects WTA. This is important as it shows that perceptions of others have a causal influence on WTA. Until now, our studies have focused on WTA alone; the next three studies test whether WTP/WTA gaps can be explained by misperceptions of buyer's materialism, and we provide statistical mediation and moderation evidence for the relevance of materialism.

STUDY 4A – PERCEIVED MATERIALISM AND THE ENDOWMENT EFFECT

The objective of this study was to mediate a classic and reliable endowment effect scenario (Mandel 2002; Thaler, 1980; replicated in Ziano, Yao, Gao, and Feldman, 2020) and show that the endowment effect is mediated by an interpersonal discrepancy in perceived materialism. This study was preregistered at <http://aspredicted.org/blind.php?x=f2n95r>.

Method

We recruited 401 participants from MTurk (217 males, 181 females, 2 other, 1 preferred not to disclose, $M_{age} = 37.48$, $SD_{age} = 12.37$). Six participants answered “Yes” to the question “Have you ever had a fatal heart attack?” (Yes/No answer) and were excluded from analyses, as we preregistered, leaving a final sample of 395 MTurk participants (211 males, 181 females, 2 other, 1 preferred not to disclose, $M_{age} = 37.39$, $SD_{age} = 12.04$).

Participants were randomly assigned to one of two conditions, buyer and seller. Participants were shown a scenario adapted (adjusting for inflation) from Thaler (1980), in which they imagined that either they or a wine merchant were selling a case of wine bottle they had bought for \$15 per bottle, a decade before the present. In the buyer condition, participants rated how much they would be willing to pay (WTP) the wine merchant per

bottle; in the seller condition, they rated how much they would be willing to accept (WTA) per bottle to sell to the wine merchant. Both WTP and WTA were measured on a slider anchored at \$0 and \$50. In the buyer condition, participants were asked to rate how materialistic they were; in the seller condition, participants were asked to rate how materialistic they thought that the wine merchant was, both on items anchored at 1 (*not at all*) and 7 (*very much*).

Results

Prices. Participants' WTA ($M = 26.14$, $SD = 10.73$) was significantly higher than their WTP ($M = 19.56$, $SD = 8.79$, Welch's $t(371.36) = 6.64$, $p < .001$, $d = 0.67$), replicating the endowment effect.

Materialism. Participants rated themselves ($M = 3.00$, $SD = 1.44$) as significantly less materialistic than the wine merchant ($M = 4.57$, $SD = 1.32$), Welch's $t(392.48) = -11.28$, $p < .001$, $d = 1.13$, replicating the self-other bias in materialism perceptions shown in Ziano and Villanova (2020).

Mediation. A bootstrap mediation analysis (PROCESS macro for SPSS v3.4; Hayes 2013; 5000 bootstraps) using condition as the independent variable, perceptions of materialism as the mediator, and price as the dependent variable found a significant indirect effect, ab (SE) = 1.40 (.65), 95% CI [.20, 2.76], confirming that materialism perceptions mediated the effect of buyer/seller role on reported valuations.

Discussion

This preregistered study replicates the endowment effect, as well as the self-other discrepancy in materialism perceptions shown by Ziano and Villanova (2020). Most importantly, it shows that this discrepancy mediates the endowment effect, providing support for our theoretical argument. Next, we investigate whether changing the perceived materialism of the buyer can modulate the endowment effect (i.e. strengthening it or reversing it depending on the target materialism description).

STUDY 4B – MANIPULATED MATERIALISM AFFECTS THE ENDOWMENT EFFECT

The objective of this study is to modulate the endowment effect by changing the target buyer. This study was preregistered at <http://aspredicted.org/blind.php?x=sr37fm>.

Method

We recruited 298 participants on MTurk (188 males, 109 females, $M_{\text{age}} = 37.68$, $SD_{\text{age}} = 13.75$), of which 22 failed to identify the correct word in an audio snippet used as an attention check and were therefore excluded from analyses, leaving a valid sample of 276 participants (169 males, 106 females, $M_{\text{age}} = 37.51$, $SD_{\text{age}} = 12.87$). Participants rated their own WTP for a flat-screen TV; their WTA for the TV to an average person; their WTA for the TV to person #100, who was rated as not materialistic; and their WTA for the TV to person #200, who was rated as highly materialistic. The method of eliciting prices within-subjects is not unusual in studies of the endowment effect (see for instance, Chapman, Dean, Ortoleva, Snowberg, and Camerer, 2017). Then, participants rated themselves, the average

person, person #100, and person #200 on perceived materialism, on four items anchored at 1 (*not at all*) and 7 (*very much*).

Results

Materialism. A repeated-measures ANOVA found a main effect of target ($F(3, 825) = 246.56, p < .001, \eta^2 = .362$). People thought the average person ($M = 4.80, SD = 1.05$) was more materialistic than they were ($M = 3.65, SD = 1.71, t(825) = 10.03, p < .001, d = 0.70$), that the non-materialistic person ($M = 3.05, SD = 1.79$) was less materialistic than they were ($t(825) = -5.27, p < .001, d = -0.37$), and that the highly materialistic person ($M = 5.93, SD = 1.18$) was more materialistic than they were ($t(825) = 19.81, p < .001, d = 1.03$).

Prices. A repeated-measures ANOVA found a main effect of target ($F(3, 825) = 23.43, p < .001, \eta^2 = .015$). Compared to WTP ($M = 232.60, SD = 100$), we did not observe different WTA to sell to the average person (i.e., no endowment effect; $M = 232.97, SD = 108.30, t(825) = .08, p = .99, d = 0.01$); we observed a reversed endowment effect regarding the WTA to sell to the non-materialistic person ($M = 214.48, SD = 105.18, t(825) = -4.10, p < .001, d = -0.22$), and a strong endowment effect for the WTA to sell to the highly-materialistic person ($M = 251.57, SD = 105.83, t(825) = 4.29, p < .001, d = 0.22$, also see Table 1).

TABLE 1
RESULTS, STUDY 3

Target	Price <i>M</i> (SD)	Materialism <i>M</i> (SD)
Self [WTP]	232.60 (100.33)	3.65 (1.71)
Average Other [WTA]	232.97 (108.30)	4.80 (1.05)
Low-materialism Other [WTA]	214.48 (105.18)	3.05 (1.79)
High-materialism Other [WTA]	251.57 (105.83)	5.93 (1.18)

Discussion

This study shows that the endowment effect can vary in magnitude and even reverse depending on the target buyer, and specifically depending on their perceived level of materialism. This evidence strengthens the notion that a self-other bias in materialism can contribute to the endowment effect. We did not find a classic endowment effect when comparing the self and the “average other.” This is consistent with some prior literature that identified some difficulties in replicating the endowment effect (Ziano et al. 2020). Nonetheless, we believe that this study makes an important theoretical point - that perceptions of the buyer’s materialism can produce large and even reversed endowment effects. We return to this point in the General Discussion.

Next, we test whether the nature of the product (more vs. less materialistic values aligned) can moderate the endowment effect.

STUDY 4C – MODERATION BY PRODUCTS’ MATERIALISTIC VALUES ALIGNMENT

This study aims to test whether the endowment effect is stronger with more materialistic values aligned products compared to less materialistic products. This study was preregistered at <http://aspredicted.org/blind.php?x=y6mr2s>.

Method

We recruited 274 participants on MTurk (152 males, 120 females, 2 other/prefer not to disclose, $M_{\text{age}} = 35.00$, $SD_{\text{age}} = 13.34$). Participants were assigned to a 4 (product) x 2 (role: seller vs. buyer) fully within-subjects scenario. Participants were exposed to a seller and a buyer role in randomized order. In both conditions, they were shown four products, two more

materialistic values aligned (a TV and a Louis Vuitton bag) and two less materialistic values aligned (a durable plastic bottle and a dictionary), in randomized order. We selected these products from Ziano and Villanova (2020), who showed that indeed the TV and luxury bag are considered more representative of materialistic values than the bottle and dictionary.

In the buyer (seller) condition, participants indicated their WTP (WTA) for all four products, on a slider from \$0-\$70 for the bottle and dictionary and on a slider from \$0-\$500 for the TV and luxury bag. We standardized these responses within each product prior to analysis to put responses on a comparable scale. At the end of the buyer condition, participants were asked to rate themselves on materialism, and at the end of the seller condition, they were asked to rate the person they would be selling the product to on materialism, both on items anchored at 1 (*not at all*) and 7 (*very much*).

Results

Prices. A repeated-measures ANOVA found a significant effect of role (i.e., an endowment effect; $F(1, 273) = 26.98, p < .001, \eta^2 = .09$), and the predicted Role x Product interaction ($F(1, 273) = 37.14, p < .001, \eta^2 = .12$). We found a larger and significant endowment effect for more materialistic values aligned products ($M_{WTP} = -.13, SD = .87$ vs. $M_{WTA} = .13, SD = .87, t(273) = 6.55, p < .001, d = .40$) compared to less materialistic values aligned products ($M_{WTP} = -.02, SD = .96$ vs. $M_{WTA} = .02, SD = .98, t(273) = 1.56, p = .12, d = .09$).

Materialism. Participants rated themselves ($M = 3.67, SD = 1.85$) as less materialistic than the person they would be selling the products to ($M = 4.53, SD = 1.60, t(273) = 7.82, p < .001, d = 0.47$).

Moderated mediation analysis. To account for our repeated measures, we conducted a mediation analysis using the MLmed macro for SPSS (Hayes and Rockwood 2020, 10,000

Monte Carlo samples), with materialism scores (self and other) as the mediator, valuations (WTP and WTA) as the dependent variable, and product materialistic values alignment as the second-step moderator. We found a significant index of moderated mediation (.08, 95% CI: [.03, .14]). The indirect effect for the more materialistic products was significant (ab (SE) = .10 (.02), 95% CI: [.06, .14]), while the indirect effect for the less materialistic products was weaker and not statistically significant (ab (SE) = .02 (.02), 90% CI: [-.01, .05]). Thus, the self-other bias in perceived materialism mediated the endowment effect for more materialistic products but did not contribute to the endowment effect for less materialistic products.

Discussion

This study shows that the endowment effect is stronger for more materialistic values aligned products compared to less materialistic values aligned products. This evidence strengthens our argument that the endowment effect is partly a function of perceptions of the buyer: since sellers believe others are more materialistic than they are, they set selling prices higher than their own WTP for highly materialistic values aligned products, but not for those products for which such a price discrimination opportunity is weaker.

GENERAL DISCUSSION

We presented nine studies which showed how biased perceptions of materialism contribute to the endowment effect. Study 1 establishes that people are more likely to focus on the buyer when they are establishing their WTA, and more focused on themselves when they are establishing their WTP. Study 2 finds that people believe that a number of traits affect others' WTP, with usefulness and materialism noted as particularly important ones. Study 3a

shows that buyers' WTP influences WTA. The same is found for perceptions of product usefulness (Study 3b). In Study 3c, in a sample of French students, we find that the materialism of the buyer affects WTA, hinting that in turn the endowment effect may also be a function of perceptions of the buyer. In Study 4a, in a sample of American adults, we find that the perceived materialism of the buyer statistically mediates the endowment effect. In Study 4b, we provide additional evidence for the causal role of materialism by manipulating buyer materialism and observing its effect on product valuation. In Study 4c, we find that more materialistic products are more susceptible to the endowment effect, providing process-relevant moderation evidence supporting the contributory role of perceptions of buyer materialism in the endowment effect.

Theoretical Contribution

We show that overestimation of others' materialism and product usefulness perception contribute to the endowment effect. Our work links two important areas of consumer research: the literature about self-serving biases in social comparisons (Alicke 1985; Kruger 1999; Kruger and Dunning 1999) and the literature about the endowment effect (Kahneman et al. 1990, 1991; Thaler 1980). This significantly adds to research on the endowment effect as prior explanations have mostly emphasized differences in how the target *product* is viewed by the seller or buyer, but we show that the way the seller views the *buyer* is a cause of the endowment effect. Notably, since sellers tend to view buyers as more materialistic than they are, they charge higher prices than buyers would be willing to pay, a process akin to price discrimination. We also find that when this tendency breaks down when provided a strong indicator of the buyer's materialism, sellers actually view buyers as less materialistic, and they charge lower prices than buyers would be willing to pay, reversing the endowment effect.

Our reversal of the endowment effect - which we obtained when manipulating the buyer's purported materialism - is particularly interesting in light of prior explanations for the endowment effect. Empirical evidence for a reversed endowment effect for positively-valued goods is limited. Only incidental sadness has been shown to reverse the endowment effect (for positively-valued goods), and that is by compensatorily increasing buyers' WTP (Lerner, Small, and Loewenstein 2004; Shu and Peck 2011); we find a reversed endowment effect from sellers reducing their WTA based on perceptions of the buyer.

As noted by Villanova (2019), only attribute sampling bias and self-extension predict a reversed endowment effect for a positively-valued good, and only under rather narrow circumstances. Attribute sampling bias can account for the incidental sadness findings if emotions are construed as differentially changing the accessibility of attributes across roles (e.g., by making positive product attributes more accessible to buyers without a concomitant change for sellers). Self-extension can predict a reversed endowment effect when an otherwise valuable good is associated with a dissociative reference group. However, these and the other *product perception* accounts (loss aversion, role-based information processing, self-enhancement, and psychological ownership) are insufficient to account for the findings presented here that seller *perceptions of the buyer* are pertinent to the endowment effect.

Strategic responding is the only prior explanation that is not product-based. Strategic responding argues that sellers consider the buyer in that they realize there is an advantage to be taken- either by misrepresenting their WTA as higher than it truly is to get a leg up in a negotiation or by increasing their WTA in line with known market prices to avoid getting a bad deal (Weaver and Frederick 2012). Our theory allows for the possibility that sellers could view buyers as less materialistic than they are and result in WTA that is less than WTP (Study 3c), whereas a strategic responder would always report WTA above WTP.

One existing finding is relevant to ours. Mandel (2002) showed that buyers and sellers consider which party is “demanding” the transaction and adjust their prices accordingly (when the buyer wants the transaction, prices increase; when the seller wants the transaction, prices decrease). Like our theory, valuation in this case reflects price discrimination when considering the counterparty. However, while Mandel’s (2002) finding concerns objective and exogenous demand signals, our theory of an endogenous interpersonal perception bias suggests that even in the absence of such objective signals, sellers attend to their perceptions of the buyer (see Study 2).

We show that perceptions of the buyer’s features help explain valuation gaps- both the endowment effect and a reversed endowment effect. Regarding buyers’ materialism, we provided evidence for this process through manipulating buyer materialism, statistical mediation, and process-relevant moderation by product type. This product heterogeneity is important as it helps outline where we would expect greater negotiation and pricing frictions (more materialistic values aligned products) and where these frictions may be weaker (less materialistic values aligned products).

Is materialism the only better-than-average effect underlying the endowment effect? Probably not. In the present work, we focused on perceptions of materialism because of its strong connection with the acquisition and appreciation of products (Holt 1995; Shrum et al. 2013, 2014), as well as its identified linkage with product usefulness and valuation (Ziano and Villanova 2020), which we also studied in this work. We encourage future research in this direction to study additional counterparty perceptions that could affect the endowment effect.

Practical implications

Our findings also have practical implications, particularly in negotiation and pricing. Perception management may be beneficial in a negotiation- when a buyer is perceived as highly materialistic, the seller is inclined to charge a higher price, and so buyers may want to instead cultivate an image of being less materialistic in order to get a better deal. Because this misperception contributes to the endowment effect, naïve sellers may inadvertently overprice their wares in secondhand or online marketplaces, causing unnecessary frictions in negotiation or leading to submaximal sales quantities (though whether this is suboptimal from a revenue or profit standpoint depends on many other factors as well, such as demand elasticity and cost structure). Having more information on the counterparty's level of materialism may help align WTP and WTA and make these markets and negotiations more efficient. Similar

Limitations and future research

A possible critique to our findings pertains to the design of some of our experiments. Namely, we have employed within-subjects designs for some of our studies. Sometimes, within-subjects designs are critiqued because participants see multiple stimuli or questions. Proponents of this critique believe that, in a within-subjects design, participants will become aware of the experimenters' hypotheses, and compromise internal validity. However, this critique does not have empirical support. For instance, Lambdin and Shaffer (2009) show that even classic framing effects, which a priori should be the ones most affected by an increase in design transparency, are alive and well in within-subjects design. Coming to the endowment effect, while classic formulations are between-subjects (Thaler, 1980), the endowment effect has been observed in within-subjects designs as well (Chapman et al. 2017; Fehr, Hakimov, and Kübler 2015; Isoni, Loomes, and Sugden 2011). Finally, even though participant

awareness is necessary but not sufficient to introduce a demand artifact (Shimp, Hyatt, and Snyder 1991), we note that Study 4a used a between-subjects formulation.

Another possible objection to our findings is that in some studies we did not observe statistically significant endowment effects. We have two responses to this objection.

First, we believe that it is important to report our results even if some comparisons are non-significant, considering that transparency is a scientific value of the utmost importance. Second, we are not the first ones to encounter difficulties replicating the endowment effect. Ziano et al. (2020) successfully replicated – twice – the endowment effect proposed in Mandel (2002) Experiment 1 but could not successfully replicate – twice – the endowment effect proposed in Irmak et al. (2013) Study 2. Perhaps the formulation in which the buyer's features are specified and relevant to the product (e.g., a wine merchant when the product is a bottle of wine; Mandel 2002; Thaler 1980), are better suited to yielding a statistically significant endowment effect. If so, this would even underscore our contention that attending to perceptions of the counterparty contributes to the endowment effect. Regardless, despite some endowment effects failing to arise, we *do* in fact observe the endowment effect several times, as well as its reversal and attenuation, all in line with our hypotheses. In sum, the overall pattern of our results is very supportive of our theorizing.

Our work has investigated how misperceptions of others modulate WTA. Perhaps, they can also affect WTP. For instance, if a buyer is buying something from someone who they think is not a materialist at all, WTP may be adjusted downwards. This is an interesting research question that we leave for future research.

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Web Appendix

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STUDY W1 – TESTING CONSUMERS’ FOCUS, WITHIN-SUBJECTS

The objective of this study was to test whether people think more of themselves or of the counterpart when buying and selling.

This study was preregistered at <http://aspredicted.org/blind.php?x=zg9s6n>.

Method

Participants. We recruited 281 participants from MTurk (178 males, 102 females, 1 other/ preferred not to disclose, $M_{age} = 38.28$, $SD_{age} = 12.24$). Twenty-two participants answered “Yes” to the question “Have you ever had a fatal heart attack” at the end of the survey and were excluded from analyses, leaving a final sample of 259 participants (158 males, 100 females, 1 other/ preferred not to disclose, $M_{age} = 38.17$, $SD_{age} = 11.87$).

Procedure. Participants were randomly assigned to one of two conditions, buyer and seller. In both conditions, they were shown a picture of a product (binoculars). In the buyer condition, they were asked to imagine they wanted to buy the binoculars and were deciding how much they were willing to pay for it. In the seller condition, they were asked to imagine they were selling the binoculars and that they were deciding how much they were willing to accept for it. Participants read the following scenario (underlined in brackets, the seller condition):

Imagine you are buying (selling) a product (binoculars). You are deciding how much you are willing to pay (accept) for it.

Do you give more weight to how much you consider the product important or how much the seller (buyer) considers it important?

Measures. Participants were asked how much they gave weight to their own considerations or the counterpart’s considerations on a 7- point item anchored at 1 (*I give more weight to how much I consider it important*), 4 (*I give equal weight to what I and the buyer/seller consider important*) and 7 (*I give much more weight to what the buyer/seller considers important*).

Results

Participants reported greater emphasis on their own considerations in the buyer condition ($M = 2.94$, $SD = 1.95$) compared to the seller condition ($M = 4.27$, $SD = 1.68$), $t(257) = 5.92$, $p < .001$, $d = 0.74$. Rather than primarily thinking of themselves, those in the seller condition considered the buyer to a greater extent.

Discussion

This study shows that sellers are more likely than buyers to take into account what the counterpart thinks is important. This study provides evidence for our notion that buyers are more self-focused and that sellers are more other-focused.

FULL LIST OF TRAITS FROM STUDY 2

Trait	Mean	Trait	Mean	Trait	Mean	Trait	Mean
useful	6.05	meticulous	4.51	neat	4.01	meddlesome	3.35
fashionable	5.44	interesting	4.48	polite	3.99	softspoken	3.33
selfdisciplined	5.39	clever	4.47	punctual	3.98	rude	3.33
materialistic	5.33	considerate	4.47	obedient	3.97	unpleasant	3.31
thrifty	5.33	cooperative	4.47	cunning	3.96	withdrawn	3.31
wise	5.31	selfsatisfied	4.47	inhibited	3.95	timid	3.28
extravagant	5.30	bright	4.45	unreasonable	3.90	disobedient	3.27
responsible	5.26	versatile	4.45	changeable	3.89	passive	3.27
impulsive	5.20	conforming	4.41	normal	3.88	belligerent	3.25
choosy	5.18	prudent	4.40	sportsmanlike	3.84	melancholic	3.24
reliable	5.16	irresponsible	4.38	jealous	3.83	uncivil	3.23
compulsive	5.12	admirable	4.37	incompetent	3.76	unpleasing	3.20
clearheaded	5.08	imaginative	4.32	reserved	3.72	dishonorable	3.18
gullible	5.04	sincere	4.32	complaining	3.71	unoriginal	3.17
levelheaded	5.03	goodtempered	4.32	lazy	3.70	solemn	3.15
perceptive	5.00	prideful	4.30	strict	3.70	unkind	3.14
intelligent	4.96	sharpwitted	4.30	dishonest	3.69	spiteful	3.12
resourceful	4.96	persistent	4.28	humorous	3.67	impolite	3.12
trustful	4.95	kind	4.27	daydreamer	3.66	unentertaining	3.11
attractive	4.94	clean	4.26	radical	3.66	disrespectful	3.09
overcautious	4.88	friendly	4.24	religious	3.64	unpopular	3.09
impressionable	4.85	lively	4.24	fearless	3.62	maladjusted	3.06
ethical	4.81	irrational	4.22	lucky	3.62	unstudious	3.01
intellectual	4.80	shallow	4.22	unsophisticated	3.58	cold	3.00
wellread	4.75	deceptive	4.19	illmannered	3.52	hostile	2.98
mature	4.73	dissatisfied	4.19	ordinary	3.51	mean	2.98
boastful	4.72	pleasant	4.19	unappreciative	3.51	forgetful	2.92
observant	4.71	respectful	4.19	unskilled	3.48	unforgiving	2.92
snobbish	4.71	insecure	4.17	restless	3.47	unemotional	2.89
bold	4.70	selfcentered	4.15	discontented	3.47	tiresome	2.88
selfconcerned	4.69	hesitant	4.10	sensitive	3.47	unpoised	2.84
dependable	4.67	honourable	4.09	witty	3.46	meek	2.82
original	4.67	vain	4.07	troubled	3.45	bashful	2.81
loyal	4.63	quick	4.07	philosophical	3.44	clumsy	2.81
progressive	4.63	authoritative	4.04	discourteous	3.42	humorless	2.77
creative	4.53	phony	4.04	liar	3.41	irreligious	2.75
eccentric	4.52	ingenious	4.03	uncultured	3.36	profane	2.55
grateful	4.52	unethical	4.03	deceitful	3.35		