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Consumers Infer Higher Status from Others' Choice of Relatively Larger Options: Conceptual Replications of Experiment 1 in Dubois, Rucker, and Galinsky (2012)

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Experiment 1 in Dubois et al. (2012) found that choosing a larger size within a set of hierarchically arranged sizes (e.g., small, medium, large) leads the chooser to be perceived as having higher status without systematically altering perceptions of non-status dimensions. Six conceptual replication studies (total N = 7,318) offer results largely consistent with this effect. In addition to using food items (coffee, smoothie) as in Dubois et al. (2012), we show that the effect can occur outside of the food domain (notebook computers, framed pictures). We also provide initial evidence that attempts to reconcile the original and current findings with a recent replication failure by Tunca et al. (2022). Notably, the current work used stimuli closer to the original stimuli which visually represented the different sizes arranged hierarchically within a set as well as the chosen option, thereby making the size hierarchy vivid (as opposed to text-only stimuli used in Tunca et al. [2022]).

Key Words: Product Size; Consumer Perceptions; Size Hierarchy; Supersizing; Food Consumption

Electronic copy available at: http://ssrn.com/abstract=4404021

1. Introduction

In contemporary marketplaces consumers frequently encounter varying sizes of a single option, and brands often nudge consumers to opt for larger, and often more expensive, options (Spurlock 2004). Variation in size is particularly prevalent in the food domain where consumers can choose the same food item in different sizes (e.g., small, medium, large). Ratcheting up portion sizes, or supersizing, is a common marketing tactic with important consequences for consumption (Zlatevska et al. 2014). In fact, fast food chains Wendy's and Burger King have been recently accused of exaggerating the size of their products to enhance their appeal among customers (Paúl 2022). Besides the prevalence of supersizing tactics, and their impact on food intake, another reason why it is important to understand choice of relative size is that such choice can signal status and shape observers' perceptions of the chooser.

In an initial investigation of relative product size in the food domain, Dubois et al. (2012), hereinafter "DRG," proposed that the choice of size, when relative, becomes a marker of status and offered evidence that a consumer is perceived as having higher status when choosing a larger (vs. smaller) size within a set of hierarchically arranged options (Experiment 1). Elsewhere, Otterbring et al. (2018) showed that male consumers confronted with other physically dominant men tend to signal their status through larger logos. Status being a central human need (Anderson et al. 2015), unpacking how common physical features, such as size, can shape status perceptions is an important endeavor for consumer research.

Recently, the idea that size can be used to signal status has been called into question. Notably, Tunca et al. (2022), hereinafter "TZW," conducted a preregistered replication of Experiment 1 in DRG using a sample of 415 Amazon Mechanical Turk participants and observed a non-significant effect in the opposite direction. The central goal of this paper is to

offer novel evidence from a series of conceptual replications that further probe the effect documented in Experiment 1 of DRG and test the generalizability of the original findings outside of the food domain. In addition, we conjecture as to why TZW failed to replicate the findings and offer initial evidence to reconcile their results with the original findings. Replication efforts vary on several dimensions (Nosek et al. 2022), among which adherence to original materials and procedures may be a critical factor shaping the likelihood of replication success. For instance, Luttrell et al. (2017) identified procedural differences to explain Ebersole et al. (2016)'s failure to replicate a classic finding from the elaboration likelihood model of persuasion (Cacioppo et al. 1983).

Direct replications typically follow (or should follow) the exact stimuli originally administered (Schmidt 2009). Conceptual replications, including the current work and TZW, typically aim to test the generalizability of the original effect with procedural discrepancies (e.g., using different stimuli when the exact original stimuli are unavailable). A key methodological difference between TZW and DRG is that the former used only textual scenarios, whereas the latter employed images to help participants more clearly visualize the options arranged hierarchically within a set (i.e., visuals of products varying in size) as well as the chosen option (i.e., the option was visually highlighted). Notably, the publication by DRG did not include the original images used.

We test these ideas across six studies: Studies 1–4 conceptually replicate the effect originally demonstrated in DRG, while Study 5 examines a possible reason for TZW's replication failure: the lack of visuals may have reduced the vividness of the size hierarchy.

2. Studies 1–4: Conceptual Replications

2.1 Method

We developed new stimuli for online Prolific samples, given that the exact original stimuli in DRG were (1) no longer available and (2) specific to the population (e.g.,

undergraduates from a large US university) and to the time when the study was conducted (e.g., a pizza brand specific to the Chicago area). We tested the effect in food (coffee, smoothie) and non-food (notebook computers, framed pictures) domains. As DRG conducted Experiment 1 using a student sample, we restricted participants' age to 18-30 in Studies 1, 2, and 4. We dropped this age filter in Studies 3a and 3b which employed a more expensive product category (i.e., MacBooks). We recruited UK-based Prolific participants in Study 2 and US-based Prolific participants in all other studies.

Studies 1–4 used a 3 (size of observed choice: small vs. medium vs. large) $\times$ 2 (dimensions: status vs. non-status) mixed-design, with dimensions as a within-subject factor. Participants read a scenario in which they were observing a consumer choosing a small, medium, or large option from an assortment of different sizes. We included an image of the options arranged in a hierarchical fashion from the smallest to the largest, as in DRG. We also visually inserted a box around the option chosen. We varied whether the assortment had three (Studies 2–4) or five (Study 1) sizes. Like in DRG, price information was omitted (Studies 1 and 2) or kept constant (Studies 3 and 4; i.e., by having the target consumer win a lucky draw and thus making the product free).

After reading the scenario, participants indicated their perceptions of the target consumer using the measures used in the original paper (DRG) and in TZW: two status items ("This person has high status" and "This person is respected") and three non-status items ("This person is honest, nice, attractive") on seven-point scales (1 = *strongly disagree*, 7 = *strongly agree*). We counterbalanced the items to avoid an order effect. As a manipulation check, participants also rated how big the chosen option was (1 = *not at all big*, 7 = *very big*).

We report all manipulations and all measures (see the web appendix for all stimuli and measures used across studies). We did not exclude any participants across studies. All data

and preregistration documents are available at

https://researchbox.org/1330&PEER_REVIEW_passcode=QLYTVA.

2.1.1 Study 1: Starbucks Coffee

Participants ($N = 601$) read about an individual at a Starbucks store ordering the

smallest (demi), medium (tall), or largest (venti) coffee from a set of five hierarchically

arranged sizes: demi (3 oz.), short (8 oz.), tall (12 oz.), grande (16 oz.), and venti (20 oz.).

This study was preregistered (https://aspredicted.org/X33_KS3).

2.1.2 Study 2: Smoothie

Participants ($N = 1,503$) read about an individual attending a social gathering at an up-

and-coming smoothie bar and choosing a small, medium, or large smoothie from a set of three

sizes. This study was preregistered (https://aspredicted.org/HFD_YHS).

2.1.3 Studies 3a and 3b: MacBook

Participants ($N_{3a} = 1,003$ and $N_{3b} = 1,503$) read about an individual at an Apple store

winning a lucky draw. As the winner, the individual chose a small (13-inch), medium (14-

inch), or large (16-inch) MacBook from a set of three sizes. Both Studies 3a

(https://aspredicted.org/Z6X_QTR) and 3b (https://aspredicted.org/MB1_QYW) were

preregistered.

2.1.4 Study 4: Framed Picture

Participants ($N = 1,505$) read about an individual at a furniture store winning a lucky

draw. As the winner, the individual chose a small (20×24 inch), medium (24×30 inch), or

large (32×40 inch) artwork from a set of three sizes. The size of the individual's apartment

was kept constant (600 sqft) across conditions.

2.2 Results

In each study, we averaged participants' scores across the two status items and the

three non-status items, yielding two separate indices (status perceptions and non-status

perceptions, respectively, as in DRG and TZW). Reliability of the two indices for each study is presented in Table 1. Then we ran a 3 (size of observed choice: small vs. medium vs. large) × 2 (dimensions: status vs. non-status) mixed-model analysis of variance (ANOVA) with repeated measures on the last factor. Below, we briefly report the key results of each study (see Table 1 and Figure 1 for full results).

2.2.1 Study 1: Starbucks Coffee

The size × dimensions interaction was significant, $F(2, 598) = 17.66$, $p < .001$, $\eta_p^2 = .06$. There was a significant effect of size on status perceptions, $F(2, 598) = 17.85$, $p < .001$, $\eta_p^2 = .06$. Perceived status increased as a function of the size chosen, from small ($M = 3.89$, $SD = .97$) to medium ($M = 4.04$, $SD = .82$) to large ($M = 4.42$, $SD = .96$). The effect of size on non-status perceptions was not significant, $F(2, 598) = .20$, $p = .817$.

2.2.2 Study 2: Smoothie

The size × dimensions interaction was significant, $F(2, 1500) = 27.28$, $p < .001$, $\eta_p^2 = .04$. There was a significant effect of size on status perceptions, $F(2, 1500) = 6.32$, $p = .002$, $\eta_p^2 = .01$. Perceived status increased as a function of the size chosen, from small ($M = 4.16$, $SD = .88$) to medium ($M = 4.24$, $SD = .83$) to large ($M = 4.36$, $SD = .90$). The effect of size on non-status perceptions was also significant, $F(2, 1500) = 6.88$, $p = .001$, $\eta_p^2 = .01$, but it took a different direction: perceptions of non-status dimensions were significantly lower in the large condition ($M = 4.34$, $SD = .74$) than in the small condition ($M = 4.46$, $SD = .77$) and the medium condition ($M = 4.51$, $SD = .77$). This pattern, also observed in Study 5, is consistent with past findings showing that having status can bear negative social costs (e.g., being judged as less warm; Cannon and Rucker 2019).

2.2.3 Study 3a: MacBook

The size × dimensions interaction was significant, $F(2, 1000) = 24.30$, $p < .001$, $\eta_p^2 = .05$. There was a significant effect of size on status perceptions, $F(2, 1000) = 12.84$, p

$< .001$, $\eta_p^2 = .03$. Perceived status increased as a function of the size chosen, from small ($M = 4.19$, $SD = .95$) to medium ($M = 4.43$, $SD = .87$) to large ($M = 4.56$, $SD = 1.02$). The effect of size on non-status perceptions was not significant, $F(2, 1000) = .72$, $p = .489$.

2.2.4 Study 3b: MacBook

The size × dimensions interaction was significant, $F(2, 1500) = 30.44$, $p < .001$, $\eta_p^2 = .04$. There was a significant effect of size on status perceptions, $F(2, 1500) = 15.40$, $p < .001$, $\eta_p^2 = .02$, such that perceived status increased from small ($M = 4.20$, $SD = .86$) to medium ($M = 4.36$, $SD = .85$) to large ($M = 4.51$, $SD = .94$). The effect of size on non-status perceptions was not significant, $F(2, 1500) = 1.78$, $p = .168$.

2.2.5 Study 4: Framed Picture

The size × dimensions interaction was significant, $F(2, 1502) = 35.44$, $p < .001$, $\eta_p^2 = .05$. There was a significant effect of size on status perceptions, $F(2, 1502) = 17.48$, $p < .001$, $\eta_p^2 = .02$, such that perceived status increased from small ($M = 4.13$, $SD = .90$) to medium ($M = 4.33$, $SD = .90$) to large ($M = 4.47$, $SD = .93$). The effect of size on non-status perceptions was also significant, $F(2, 1502) = 5.23$, $p = .005$, $\eta_p^2 = .01$: as in Study 2, perceptions of non-status dimensions were significantly lower in the large condition ($M = 4.83$, $SD = .80$) than in the small condition ($M = 4.94$, $SD = .82$) and the medium condition ($M = 5.00$, $SD = .84$).

Table 1. Results of Conceptual Replication Studies

Replication Study (Stimuli) *N*, Platform, Location, Number of Sizes, Age Range, Gender	Variable	Small Condition	Medium Condition	Large Condition	Statistics SM = Small Condition versus Medium Condition ML = Medium Condition versus Large Condition SL = Small Condition versus Large Condition	
1 (Starbucks Coffee) *N* = 601, Prolific, US 5 Sizes Age 18-32 (Prolific filter: 18-30) 72.0% female, 4.2% other gender **Preregistered:** https://aspredicted.org/X33_KS3	Status Dimensions Non-Status Dimensions Manipulation Check Cell Size	3.89 (.97) 4.28 (.80) 1.08 (.39) 200	4.04 (.82) 4.31 (.79) 3.92 (.39) 200	4.42 (.96) 4.33 (.77) 6.88 (.37) 201	**Size × Dimensions Two-Way Interaction:** $F(2, 598) = 17.66$, $p < .001$, $\eta_p^2 = .06$ **Status Dimensions ($r = .52$)** $F(2, 598) = 17.85$, $p < .001$, $\eta_p^2 = .06$ **SM:** $F(1, 598) = 2.68$, $p = .102$, $\eta_p^2 = .004$ **ML:** $F(1, 598) = 17.27$, $p < .001$, $\eta_p^2 = .03$ **SL:** $F(1, 598) = 33.57$, $p < .001$, $\eta_p^2 = .05$	**Non-Status Dimensions ($\alpha = .73$)** $F(2, 598) = .20$, $p = .817$ **SM:** $F(1, 598) = .20$, $p = .656$ **ML:** $F(1, 598) = .03$, $p = .865$ **SL:** $F(1, 598) = .38$, $p = .538$
2 (Smoothie) *N* = 1,503, Prolific, UK 3 Sizes Age 18-38[1] (Prolific filter: 18-30) 67.5% female, 1.9% other gender **Preregistered:** https://aspredicted.org/HFD_YHS	Status Dimensions Non-Status Dimensions Manipulation Check Cell Size	4.16 (.88) 4.46 (.77) 1.44 (.64) 498	4.24 (.83) 4.51 (.77) 4.05 (.27) 502	4.36 (.90) 4.34 (.74) 6.56 (.65) 503	**Size × Dimensions Two-Way Interaction:** $F(2, 1500) = 27.28$, $p < .001$, $\eta_p^2 = .04$ **Status Dimensions ($r = .59$)** $F(2, 1500) = 6.32$, $p = .002$, $\eta_p^2 = .01$ **SM:** $F(1, 1500) = 2.03$, $p = .154$ **ML:** $F(1, 1500) = 4.46$, $p = .035$, $\eta_p^2 = .003$ **SL:** $F(1, 1500) = 12.48$, $p < .001$, $\eta_p^2 = .008$	**Non-Status Dimensions ($\alpha = .72$)** $F(2, 1500) = 6.88$, $p = .001$, $\eta_p^2 = .01$ **SM:** $F(1, 1500) = 1.14$, $p = .285$ **ML:** $F(1, 1500) = 13.04$, $p < .001$, $\eta_p^2 = .009$ **SL:** $F(1, 1500) = 6.42$, $p = .011$, $\eta_p^2 = .004$
3a (MacBook) *N* = 1,003, Prolific, US 3 Sizes Age 18-79 (No age filter) 58.3% female, 1.2% other gender **Preregistered:** https://aspredicted.org/Z6X_QTR	Status Dimensions Non-Status Dimensions Manipulation Check Cell Size	4.19 (.95) 4.64 (.83) 1.75 (.83) 336	4.43 (.87) 4.70 (.84) 4.15 (.51) 334	4.56 (1.02) 4.63 (.92) 6.38 (.71) 333	**Size × Dimensions Two-Way Interaction:** $F(2, 1000) = 24.30$, $p < .001$, $\eta_p^2 = .05$ **Status Dimensions ($r = .58$)** $F(2, 1000) = 12.84$, $p < .001$, $\eta_p^2 = .03$ **SM:** $F(1, 1000) = 10.07$, $p = .002$, $\eta_p^2 = .01$ **ML:** $F(1, 1000) = 3.36$, $p = .067$, $\eta_p^2 = .003$ **SL:** $F(1, 1000) = 25.06$, $p < .001$, $\eta_p^2 = .02$	**Non-Status Dimensions ($\alpha = .80$)** $F(2, 1000) = .72$, $p = .489$ **SM:** $F(1, 1000) = .91$, $p = .341$ **ML:** $F(1, 1000) = 1.22$, $p = .270$ **SL:** $F(1, 1000) = .02$, $p = .878$
3b (MacBook) *N* = 1,503, Prolific, US 3 Sizes Age 18-84[2] (No age filter) 64.5% female, 2.4% other gender **Preregistered:** https://aspredicted.org/MB1_QYW	Status Dimensions Non-Status Dimensions Manipulation Check Cell Size	4.20 (.86) 4.63 (.77) 1.84 (.91) 502	4.36 (.85) 4.65 (.80) 4.14 (.44) 501	4.51 (.94) 4.56 (.81) 6.36 (.74) 500	**Size × Dimensions Two-Way Interaction:** $F(2, 1500) = 30.44$, $p < .001$, $\eta_p^2 = .04$ **Status Dimensions ($r = .55$)** $F(2, 1500) = 15.40$, $p < .001$, $\eta_p^2 = .02$ **SM:** $F(1, 1500) = 8.13$, $p = .004$, $\eta_p^2 = .005$ **ML:** $F(1, 1500) = 7.28$, $p = .007$, $\eta_p^2 = .005$ **SL:** $F(1, 1500) = 30.79$, $p < .001$, $\eta_p^2 = .02$	**Non-Status Dimensions ($\alpha = .73$)** $F(2, 1500) = 1.78$, $p = .168$ **SM:** $F(1, 1500) = .19$, $p = .662$ **ML:** $F(1, 1500) = 3.28$, $p = .070$, $\eta_p^2 = .002$ **SL:** $F(1, 1500) = 1.89$, $p = .170$
4 (Framed Picture) *N* = 1,505, Prolific, US 3 Sizes Age 18-31[3] (Prolific filter: 18-30) 69.9% female, 3.5% other gender	Status Dimensions Non-Status Dimensions Manipulation Check Cell Size	4.13 (.90) 4.94 (.82) 1.97 (.91) 503	4.33 (.90) 5.00 (.84) 4.10 (.45) 500	4.47 (.93) 4.83 (.80) 6.26 (.78) 502	**Size × Dimensions Two-Way Interaction:** $F(2, 1502) = 35.44$, $p < .001$, $\eta_p^2 = .05$ **Status Dimensions ($r = .48$)** $F(2, 1502) = 17.48$, $p < .001$, $\eta_p^2 = .02$ **SM:** $F(1, 1502) = 12.35$, $p < .001$, $\eta_p^2 = .008$ **ML:** $F(1, 1502) = 5.53$, $p = .019$, $\eta_p^2 = .004$ **SL:** $F(1, 1502) = 34.50$, $p < .001$, $\eta_p^2 = .02$	**Non-Status Dimensions ($\alpha = .76$)** $F(2, 1502) = 5.23$, $p = .005$, $\eta_p^2 = .01$ **SM:** $F(1, 1502) = 1.27$, $p = .261$ **ML:** $F(1, 1502) = 10.17$, $p = .001$, $\eta_p^2 = .007$ **SL:** $F(1, 1502) = 4.28$, $p = .039$, $\eta_p^2 = .003$

[1] In Study 2, one participant reported an age (2 years) below the minimum age required to participate in studies on Prolific. We removed this participant's age data.

[2] In Study 3b, one participant reported an age (13 years) below the minimum age required to participate in studies on Prolific. We removed this participant's age data.

[3] In Study 4, one participant reported an age (9 years) below the minimum age required to participate in studies on Prolific. We removed this participant's age data.

Figure 1. Planned Contrasts across Conceptual Replications (Studies 1–4)
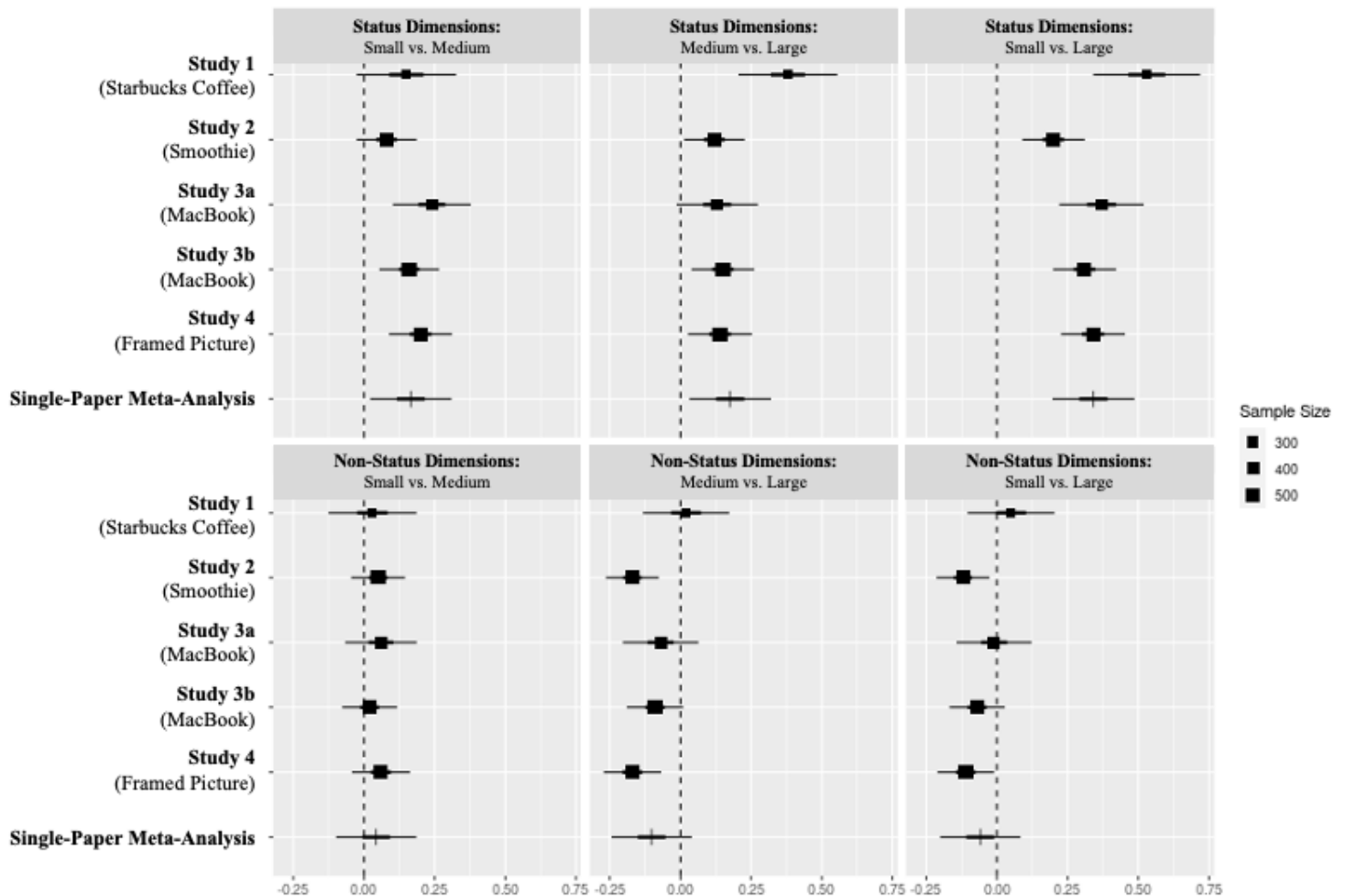
3. Study 5: A Matter of Vividness of the Size Hierarchy?

Study 5 examines whether the vividness of the size hierarchy may, as least in part, explain TZW's replication failure. Specifically, TZW relied solely on textual stimuli, whereas DRG used a combination of textual and visual stimuli. It is possible that this combination enabled participants to more clearly visualize a set of hierarchically arranged options, making the size hierarchy (as well as the chosen size) more vivid. In addition to varying the presence

of images, we also varied the number of sizes in a set (three vs. five) and the brand (no brand vs. Starbucks) to further boost vividness.

3.1 Method

We recruited 1,203 US-based participants on Prolific (age filter used: 18-30; age range: 18-40; 66.3% female, 4.7% other gender) and randomly assigned them to one of six conditions in a 3 (size of observed choice: smallest vs. medium vs. largest) × 2 (vividness: higher vs. lower) between-subjects design. Participants read about an individual entering a coffee shop and ordering the smallest, medium, or largest coffee from a set of hierarchically arranged sizes.

In the higher vividness condition, we adapted the coffee stimuli used in Study 1 (see the web appendix for the exact stimuli). In the lower vividness condition, we used the coffee stimuli from TZW. The two conditions differed in several key aspects. The higher vividness condition contained images of the coffee shop and an image of the coffee sizes arranged in a hierarchical fashion (with the chosen size highlighted in the image), presented five coffee sizes (demi, short, tall, grande, venti), used a Starbucks coffee shop featuring a barista, and did not mention price (as in Study 1). In contrast, the lower vividness condition did not contain visuals, presented three coffee sizes (small, medium, large), used a non-branded local coffee shop featuring a cashier, and specified that the coffee was free.

Next, participants indicated their perceptions of the target consumer on two status items ($r = .64$, $p < .001$) as in previous studies. We assessed vividness of the size hierarchy using four items, such as "To what extent did the scenario make the hierarchy of coffee sizes vivid (i.e., coffee varying in size from the smallest to the largest)?" (1 = *not at all vivid*, 7 = *extremely vivid*; see the web appendix for the full scale), which we averaged to form a vividness index ($\alpha = .81$). Finally, as a manipulation check, participants rated how big the chosen coffee was (1 = *not at all big*, 7 = *very big*).

3.2 Results

For brevity, we report all means and standard deviations in Table 2.

Table 2. Means and Standard Deviations (in Parentheses) across Experimental Conditions in Study 5

		Smallest Condition	Medium Condition	Largest Condition	Average (Vividness Condition)
Manipulation Check (Perceived Size of Chosen Option)	**Higher Vividness Condition**	1.15 (.58)	3.92 (.54)	6.69 (.76)	3.92 (2.35)
	Lower Vividness Condition	1.56 (.88)	4.04 (.39)	6.21 (.98)	3.94 (2.06)
	Average (Size Condition)	1.35 (.77)	3.98 (.48)	6.45 (.91)	
Manipulation Check (Vividness of Size Hierarchy)	**Higher Vividness Condition**	5.76 (1.09)	5.47 (1.08)	5.66 (1.11)	5.63 (1.10)
	Lower Vividness Condition	5.16 (1.25)	5.07 (1.29)	5.25 (1.16)	5.16 (1.23)
	Average (Size Condition)	5.46 (1.21)	5.27 (1.21)	5.45 (1.15)	
Status Perceptions	**Higher Vividness Condition**	3.80 (1.06)	4.14 (.89)	4.38 (1.08)	4.11 (1.04)
	Lower Vividness Condition	4.31 (1.00)	4.24 (.82)	4.04 (1.04)	4.19 (.96)
	Average (Size Condition)	4.05 (1.06)	4.19 (.85)	4.21 (1.07)	

3.2.1. Manipulation Check (Perceived Size of the Chosen Option)

A 3 (size) × 2 (vividness) ANOVA on perceived size of the chosen option revealed a significant main effect of size, $F(2, 1197) = 5066.22$, $p < .001$, $\eta_p^2 = .89$. The main effect of vividness was not significant, $F(1, 1197) = .13$, $p = .723$. There was also a significant size × vividness interaction, $F(2, 1197) = 40.12$, $p < .001$, $\eta_p^2 = .06$. Although the "smallest < medium < largest" pattern emerged in both the higher vividness condition ($F(2, 1197) = 3000.60$, $p < .001$, $\eta_p^2 = .83$) and the lower vividness condition ($F(2, 1197) = 2107.73$, $p < .001$, $\eta_p^2 = .78$), this pattern was more pronounced in the former than in the latter.

3.2.2. Manipulation Check (Vividness of the Size Hierarchy)

A 3 × 2 ANOVA on vividness of the size hierarchy revealed a significant main effect of vividness, $F(1, 1197) = 49.95$, $p < .001$, $\eta_p^2 = .04$. As intended, the size hierarchy was more vivid in the higher vividness condition than in the lower vividness condition. Unexpectedly,

the main effect of size was also significant, $F(2, 1197) = 3.46$, $p = .032$, $\eta_p^2 = .006$. The size hierarchy was less vivid in the medium condition than in the smallest condition, $F(1, 1200) = 5.26$, $p = .022$, $\eta_p^2 = .004$, and the largest condition, $F(1, 1200) = 4.76$, $p = .029$, $\eta_p^2 = .004$. The size × vividness interaction was not significant, $F(2, 1197) = .87$, $p = .421$.

3.2.3. Status Perceptions

A 3 × 2 ANOVA on status perceptions revealed a marginally significant main effect of size, $F(2, 1197) = 2.89$, $p = .056$, $\eta_p^2 = .005$, a non-significant main effect of vividness, $F(1, 1197) = 2.29$, $p = .130$, and most importantly a significant size × vividness interaction, $F(2, 1197) = 18.60$, $p < .001$, $\eta_p^2 = .03$. Replicating the findings of Study 1, we found a significant effect of size on status perceptions in the higher vividness condition, $F(2, 1197) = 17.49$, $p < .001$, $\eta_p^2 = .03$. Perceived status was significantly higher in the largest condition than in the smallest condition, $F(1, 1197) = 34.64$, $p < .001$, $\eta_p^2 = .03$, and the medium condition, $F(1, 1197) = 5.96$, $p = .015$, $\eta_p^2 = .005$. In addition, perceived status was higher in the medium condition than in the smallest condition, $F(1, 1197) = 11.79$, $p < .001$, $\eta_p^2 = .01$. In the lower vividness condition, there was also a significant effect of size on status perceptions, $F(2, 1197) = 4.04$, $p = .018$, $\eta_p^2 = .007$, but it took a different direction: perceived status was significantly lower in the largest condition than in the smallest condition, $F(1, 1197) = 7.52$, $p = .006$, $\eta_p^2 = .006$, and the medium condition, $F(1, 1197) = 4.06$, $p = .044$, $\eta_p^2 = .003$. The latter two conditions did not differ, $F(1, 1197) = .52$, $p = .471$.

3.3 Discussion

These results suggest that the findings of Experiment 1 in DRG are more likely to replicate when the size hierarchy is vivid (as in Study 1) compared to when the size hierarchy is less vivid (as in TZW). Notably, one may wonder whether the failure to replicate the effect in the lower vividness condition stemmed from framing the coffee as free. This factor is

unlikely to explain the replication failure entirely, given the results of Studies 3 and 4 in which we successfully replicated the effect despite the product being free.

4. General Discussion

Six well-powered conceptual replication studies yielded results largely consistent with the findings of Experiment 1 in DRG and extended them to non-food domains. These results stand in contrast to the recent replication failure by TZW. Given that TZW observed a nonsignificant effect in the opposite direction, it is unlikely that the failure was due to a lack of statistical power. Rather, it is possible that procedural differences may explain the discrepancy: specifically, the effect may be more likely to emerge when participants can vividly imagine or directly see the different sizes arranged hierarchically within a set. By omitting visual representations of the size hierarchy and the option selected (which were present in DRG) and relying on text-only stimuli, TZW may have made the size hierarchy less vivid or the consumer's choice of a specific size less salient. Notably, the publication by DRG did not include the original pictures used, which highlights the value of including web appendices with the exact stimuli to facilitate replication efforts.

We surmise that the effect may be more likely to be observed when the size hierarchy becomes more vivid and stark, for example, by stretching the hierarchy. The current findings hint at this possibility, as the contrast between the small and large conditions was about 1.5–2.4 times bigger when using five different sizes (as in Study 1) than three sizes (as in Studies 2–4). Relatedly, using stronger labels for size (e.g., "largest" as in Studies 1 and 5 vs. "large" as in Studies 2–4) and well-known brands (e.g., Starbucks in Studies 1 and 5, Apple in Studies 3a and 3b) may also help participants construct a more vivid mental image of the size hierarchy.

The current work has implications for product assortment, status signaling, and consumer perceptions. Given that assortment design is a critical dimension of retail strategy

(Kahn et al. 2018), the findings suggest an easily implementable tactic to build status perceptions through the design of retail space. Even outside of the realm of luxury, the choice of relative size within an assortment can signal status, especially in contexts where one's choice is visible and conspicuous. Future efforts may examine novel boundary conditions. For instance, size may be interpreted differently in different cultures (Panchal and Gill 2020), and the effect of relative product size on status perceptions may depend on observers' characteristics, such as their product-relevant knowledge and expertise.

Finally, the current findings have implications for replications. Authors tend to design their stimuli carefully, often pretesting them to ensure their effectiveness. Replication efforts should involve gathering as much information about the original study to ensure that the stimuli used match the original stimuli on critical dimensions. This is particularly important for older papers that may not have a web appendix or do not fully make available the original stimuli (as in DRG). In the case of direct replications, it is imperative that replicators have access to and employ the full stimuli used in the original study. Overall, a more complete understanding of the original study may be helpful in conducting more informed replications.

References

Anderson, C., Hildreth, J. A. D., & Howland, L. (2015). Is the desire for status a fundamental human motive? A review of the empirical literature. *Psychological Bulletin*, *141*(3), 574-601.

Bradlow, E. T., Golder, P. N., Huber, J., Jap, S., Labroo, A. A., Lehmann, D. R., Lynch, J., Mizik N., & Winer, R. S. (2020). Relaunching Marketing Letters. *Marketing Letters*, *31*(4), 311-314.

Cacioppo, J. T., Petty, R. E., & Morris, K. J. (1983). Effects of need for cognition on message evaluation, recall, and persuasion. *Journal of Personality and Social Psychology, 45*(4), 805-818.

Cannon, C., & Rucker, D. D. (2019). The dark side of luxury: Social costs of luxury consumption. *Personality and Social Psychology Bulletin*, *45*(5), 767-779.

Dubois, D., Rucker, D. D., & Galinsky, A. D. (2012). Super size me: Product size as a signal of status. *Journal of Consumer Research*, *38*(6), 1047-1062.

Ebersole, C. R., Atherton, O. E., Belanger, A. L., Skulborstad, H. M., Allen, J. M., Banks, J. B., ... & Nosek, B. A. (2016). Many Labs 3: Evaluating participant pool quality across the academic semester via replication. *Journal of Experimental Social Psychology*, *67*, 68-82.

Kahn, B. E., Inman, J. J., & Verhoef, P. C. (2018). Introduction to special issue: Consumer response to the evolving retailing landscape. *Journal of the Association for Consumer Research*, *3*(3), 255-259.

Luttrell, A., Petty, R. E., & Xu, M. (2017). Replicating and fixing failed replications: The case of need for cognition and argument quality. *Journal of Experimental Social Psychology*, *69*, 178-183.

Nosek, B. A., Hardwicke,... & Vazire, S. (2022). Replicability, robustness, and reproducibility in psychological science. *Annual Review of Psychology*, *73*, 719-748.

Otterbring, T., Ringler, C., Sirianni, N. J., & Gustafsson, A. (2018). The Abercrombie & Fitch effect: The impact of physical dominance on male customers' status-signaling consumption. *Journal of Marketing Research*, *55*(1), 69-79.

Panchal, S., & Gill, T. (2020). When size does matter: Dominance versus prestige based status signaling. *Journal of Business Research*, *120*, 539-550.

Paúl, María L. (2022, May 18). *McDonald's, Wendy's accused of beefing up burgers in ads*. The Washington Post.

Schmidt, S. (2009). Shall we really do it again? The powerful concept of replication is neglected in the social sciences. *Review of General Psychology*, 13(2), 90–100.

Spurlock, Morgan (2004), *Supersize Me*, Roadside Attractions, Samuel Goldwyn Films, and Showtime Independent Films, 100 minutes.

Tunca, B., Ziano, I., & Wenting, X. (2022). Super-Size Me: An unsuccessful preregistered replication of the effect of product size on status signaling. *Meta-Psychology*, *6*.

Zlatevska, N., Dubelaar, C., & Holden, S. S. (2014). Sizing up the effect of portion size on consumption: A meta-analytic review. *Journal of Marketing*, *78*(3), 140-154.

Web Appendix: All Stimuli and All Measures Used across Studies

Study 1

In this research, we are interested in how individuals make snap judgments about others based on their behavior. You will read a scenario describing a person performing a behavior, and will be asked to answer some questions about this person.

[Small Condition]

You are reading at your local Starbucks coffee shop.

A person comes in, gets to the counter, and orders a coffee. The barista asks which coffee size the customer would like to order. The coffee is available in five different sizes: Demi (3 oz.), Short (8 oz.), Tall (12 oz.), Grande (16 oz.), and Venti (20 oz.).

Demi 3 oz.   Short 8 oz.   Tall 12 oz.   Grande 16 oz.   Venti 20 oz.

The customer chooses the **SMALLEST SIZE (Demi).**

[Medium Condition]

You are reading at your local Starbucks coffee shop.

A person comes in, gets to the counter, and orders a coffee. The barista asks which coffee size the customer would like to order. The coffee is available in five different sizes: Demi (3 oz.), Short (8 oz.), Tall (12 oz.), Grande (16 oz.), and Venti (20 oz.).

Demi	Short	Tall	Grande	Venti
3 oz.	8 oz.	12 oz.	16 oz.	20 oz.

The customer chooses the **MEDIUM SIZE (Tall).**

[Large Condition]

You are reading at your local Starbucks coffee shop.

A person comes in, gets to the counter, and orders a coffee. The barista asks which coffee size the customer would like to order. The coffee is available in five different sizes: Demi (3 oz.), Short (8 oz.), Tall (12 oz.), Grande (16 oz.), and Venti (20 oz.).

| Demi | Short | Tall | Grande | Venti |
| 3 oz. | 8 oz. | 12 oz. | 16 oz. | 20 oz. |

The customer chooses the **LARGEST SIZE (Venti).**

Based on what you read above, please make snap judgments of the target individual in the scenario. (1 = Strongly disagree, 7 = Strongly agree)
- This person has high status.
- This person is respected.
- This person is honest.
- This person is nice.
- This person is attractive.

*The items were counterbalanced.

{Page Break}

How big was the coffee that the individual chose in the scenario? (1 = Not at all big, 7 = Very big)

{Page Break}

What is your age?

What is your gender? (Male, Female, Other)

Think of this ladder as representing where people stand in the US.

At the top of the ladder are the people who are the best off - those who have the most money, the most education, and the most respected jobs. At the bottom are the people who are the worst off - those who have the least money, the least education, and the least respected jobs or no job. The higher up you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the bottom. Where would you place yourself on this ladder? (1 = People at the bottom of society, 10 = People at the top of society)

To what extent are you familiar with Starbucks? (1 = Not at all familiar, 7 = Very familiar)

How frequently do you purchase Starbucks coffee? (1 = Never, 7 = Very frequently)

How much do you like Starbucks? (1 = Not at all, 7 = Very much)

Study 2

In this research, we are interested in how individuals make snap judgments about others based on their behavior. You will read a scenario describing a person performing a behavior, and will be asked to answer some questions about this person.

[Small Condition]

You're attending a social gathering hosted at an up-and-coming smoothie bar.

You're at the bar. A person you don't know moves closer to the counter, and gets to choose a smoothie. The smoothie is available in one of three different sizes: small, medium, and large
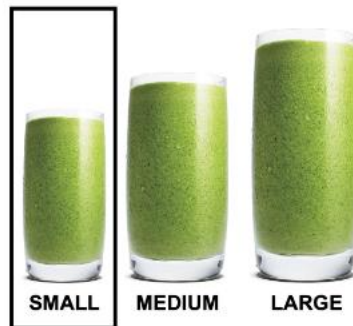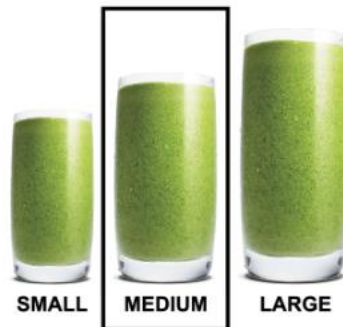
The individual chooses the **SMALL smoothie**.

[Medium Condition]

You're attending a social gathering hosted at an up-and-coming smoothie bar.

You're at the bar. A person you don't know moves closer to the counter, and gets to choose a smoothie. The smoothie is available in one of three different sizes: small, medium, and large
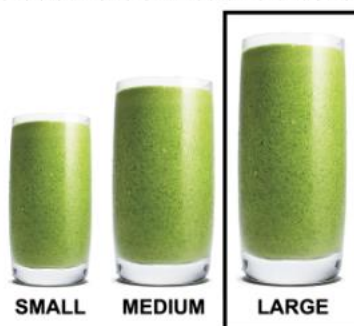
SMALL   MEDIUM   LARGE

The individual chooses the **MEDIUM smoothie**.

[Large Condition]

You're attending a social gathering hosted at an up-and-coming smoothie bar.

You're at the bar. A person you don't know moves closer to the counter, and gets to choose a smoothie. The smoothie is available in one of three different sizes: small, medium, and large

SMALL   MEDIUM   LARGE

The individual chooses the **LARGE smoothie**.

Based on what you read above, please make snap judgments of the target individual in the scenario. (1 = Strongly disagree, 7 = Strongly agree)
- This person has high status.
- This person is respected.
- This person is honest.
- This person is nice.
- This person is attractive.

*The items were counterbalanced.

{Page Break}

How big was the smoothie that the individual chose in the scenario? (1 = Not at all big, 7 = Very big)

{Page Break}

What is your age?

What is your gender? (Male, Female, Other)

Have you been to a smoothie bar? (Yes, No)

To what extent are you familiar with smoothie bars? (1 = Not at all familiar, 7 = Very familiar)

Studies 3a

In this research, we are interested in how individuals make snap judgments about others based on their behavior. You will read a scenario describing a person performing a behavior, and will be asked to answer some questions about this person.

[Small Condition]

You're at an Apple store.

An individual enters a lucky draw and wins. As the winner, he gets to choose a MacBook available in three different sizes: small (13-inch), medium (14-inch), and large (16-inch).

The individual chooses to receive the small MacBook (13-inch).

[Medium Condition]

You're at an Apple store.

An individual enters a lucky draw and wins. As the winner, he gets to choose a MacBook available in three different sizes: small (13-inch), medium (14-inch), and large (16-inch).

The individual chooses to receive the medium MacBook (14-inch).

[Large Condition]

You're at an Apple store.

An individual enters a lucky draw and wins. As the winner, he gets to choose a MacBook available in three different sizes: small (13-inch), medium (14-inch), and large (16-inch).

The individual chooses to receive the large MacBook (16-inch).

Based on what you read above, please make snap judgments of the target individual in the scenario. (1 = Strongly disagree, 7 = Strongly agree)
- This person has high status.
- This person is respected.
- This person is honest.
- This person is nice.
- This person is attractive.

*The items were counterbalanced.

{Page Break}

How big was the MacBook that the individual chose in the scenario? (1 = Not at all big, 7 = Very big)

{Page Break}

What is your age?

What is your gender? (Male, Female, Other)

Study 3b

In this research, we are interested in how individuals make snap judgments about others based on their behavior. You will read a scenario describing a person performing a behavior, and will be asked to answer some questions about this person.

[Small Condition] – Same as in Study 3a
[Medium Condition] – Same as in Study 3a
[Large Condition] – Same as in Study 3a

Based on what you read above, please make snap judgments of the target individual in the scenario. (1 = Strongly disagree, 7 = Strongly agree)
- This person has high status.
- This person is respected.
- This person is honest.
- This person is nice.
- This person is attractive.

*The items were counterbalanced.

{Page Break}

How big was the MacBook that the individual chose in the scenario? (1 = Not at all big, 7 = Very big)

{Page Break}

What is your age?

What is your gender? (Male, Female, Other)

Study 4

In this research, we are interested in how individuals make snap judgments about others based on their behavior. You will read a scenario describing a person performing a behavior, and will be asked to answer some questions about this person.

[Small Condition]

You are at a furniture store.

An individual enters a lucky draw and wins. As the winner, she gets to choose an artwork available in three different sizes: small (20 x 24 inch), medium (24 x 30 inch), and large (32 x 40 inch).

She mentions that she recently moved into a new apartment (600 sqft), so winning an artwork is a great opportunity for her to decorate her new home.

She chooses to receive the small artwork (20 x 24 inch).

[Medium Condition]

You are at a furniture store.

An individual enters a lucky draw and wins. As the winner, she gets to choose an artwork available in three different sizes: small (20 x 24 inch), medium (24 x 30 inch), and large (32 x 40 inch).

She mentions that she recently moved into a new apartment (600 sqft), so winning an artwork is a great opportunity for her to decorate her new home.

She chooses to receive the medium artwork (24 x 30 inch).

[Large Condition]

You are at a furniture store.

An individual enters a lucky draw and wins. As the winner, she gets to choose an artwork available in three different sizes: small (20 x 24 inch), medium (24 x 30 inch), and large (32 x 40 inch).

She mentions that she recently moved into a new apartment (600 sqft), so winning an artwork is a great opportunity for her to decorate her new home.

She chooses to receive the large artwork (32 x 40 inch).

Based on what you read above, please make snap judgments of the target individual in the scenario. (1 = Strongly disagree, 7 = Strongly agree)
- This person has high status.
- This person is respected.
- This person is honest.
- This person is nice.
- This person is attractive.

*The items were counterbalanced.

{Page Break}

How big was the artwork that the individual chose in the scenario? (1 = Not at all big, 7 = Very big)

{Page Break}

What is your age?

What is your gender? (Male, Female, Other)

Think of this ladder as representing where people stand in the US.

At the top of the ladder are the people who are the best off - those who have the most money, the most education, and the most respected jobs. At the bottom are the people who are the worst off - those who have the least money, the least education, and the least respected jobs or no job. The higher up you are on this ladder, the closer you are to the people at the very top; the lower you are, the closer you are to the people at the bottom. Where would you place yourself on this ladder? (1 = People at the bottom of society, 10 = People at the top of society)

To what extent are you familiar with artwork? (1 = Not at all familiar, 7 = Very familiar)

How frequently do you purchase artwork? (1 = Never, 7 = Very frequently)

How much do you like artwork? (1 = Not at all, 7 = Very much)

Study 5

In this research, we are interested in how individuals make snap judgments about others based on their behavior. You will read a scenario describing a person performing a behavior, and will be asked to answer some questions about this person.

[Smallest + Higher Vividness Condition]

You're at a local Starbucks coffee shop.

An individuals enters the coffee shop and asks for a coffee. The barista explains to him that the coffee comes in five sizes: Demi (3 oz.), Short (8 oz.), Tall (12 oz.), Grande (16 oz.), and Venti (20 oz.), and asks him which size he would like to choose.

The individual orders the smallest size (Demi).

[Medium + Higher Vividness Condition]

You're at a local Starbucks coffee shop.

An individuals enters the coffee shop and asks for a coffee. The barista explains to him that the coffee comes in five sizes: Demi (3 oz.), Short (8 oz.), Tall (12 oz.), Grande (16 oz.), and Venti (20 oz.), and asks him which size he would like to choose.

The individual orders the medium size (Tall).

Demi	Short	Tall	Grande	Venti
3 oz.	8 oz.	12 oz.	16 oz.	20 oz.

[Largest + Higher Vividness Condition]

You're at a local Starbucks coffee shop.

An individuals enters the coffee shop and asks for a coffee. The barista explains to him that the coffee comes in five sizes: Demi (3 oz.), Short (8 oz.), Tall (12 oz.), Grande (16 oz.), and Venti (20 oz.), and asks him which size he would like to choose.

The individual orders the largest size (Venti).

[Smallest + Lower Vividness Condition]

You're at a local coffee shop. An individual enters the coffee shop, and he knows the coffee shop provides free coffee. The cashier explains to him that the coffee comes in three sizes: small (8 oz.), medium (12 oz.), and large (16 oz.), and asks him which size he would like to choose.

The individual orders the smallest size.

[Medium + Lower Vividness Condition]

You're at a local coffee shop. An individual enters the coffee shop, and he knows the coffee shop provides free coffee. The cashier explains to him that the coffee comes in three sizes: small (8 oz.), medium (12 oz.), and large (16 oz.), and asks him which size he would like to choose.

The individual orders the medium size.

[Largest + Lower Vividness Condition]

You're at a local coffee shop. An individual enters the coffee shop, and he knows the coffee shop provides free coffee. The cashier explains to him that the coffee comes in three sizes: small (8 oz.), medium (12 oz.), and large (16 oz.), and asks him which size he would like to choose.

The individual orders the largest size.

Based on what you read above, please make snap judgments of the target individual in the scenario. (1 = Strongly disagree, 7 = Strongly agree)
- This person has high status.
- This person is respected.

*The items were counterbalanced.

{Page Break}

To what extent did the scenario make the hierarchy of coffee sizes vivid (i.e., coffee varying in size from the smallest to the largest)? (1 = Not at all vivid, 7 = Extremely vivid)

To what extent did the scenario make the hierarchy of coffee sizes salient (i.e., coffee varying in size from the smallest to the largest)? (1 = Not at all salient, 7 = Extremely salient)

To what extent did you think about the hierarchy of coffee sizes when reading the scenario? (1 = Not at all, 7 = Very much)

How clearly were you able to visualize the hierarchy of coffee sizes when reading the scenario? (1 = Not at all clearly, 7 = Very clearly)

{Page Break}

How big was the coffee that the individual chose in the scenario? (1 = Not at all big, 7 = Very big)

What is your age?

What is your gender? (Male, Female, Other)