**To Buy or How Much to Buy? Partition Dependence in Purchase-Quantity Decisions**

**1 Introduction**

Choice architectures are not neutral measurement devices that leave unaffected respondents’ behavior (Johnson et al. 2012) and responses to one query can be affected by a preceding one, such as in the foot-in-the-door technique (e.g., Burger 1999), self-prophecy effect (Sherman 1980), and cognitive survey research (e.g., Krosnick 1999; Kreuter et al. 2011). We examine the effect of directly making a purchase-quantity decision or doing so only after affirming purchase interest. For example, a child may ask a parent “How many cookies may I have?” with or without first asking “May I have some cookies?” Online donations can be solicited directly (“No thanks”, $1, $5, $10, and “Other amount”) or after making a yes/no decision to an initial “Donate Now” option. Some e-commerce sites require customers to select a product by indicating a quantity from a pull-down menu, whereas others require customers to first select an item before making a separate quantity decision. We find that asking people a seemingly innocuous yes/no purchase-interest question prior to making a purchase-quantity decision leads fewer people to buy, but that it does not affect the average purchase quantity among those who do.

**2 Theoretical background**

We rely on the concept of partition dependence (e.g., Fox & Rottenstreich 2003) to provide a novel basis for explaining why more people purchase when directly responding to a format that fully partitions purchase quantities (0, 1, 2 … *n*) than when first responding to a dichotomousyes/no purchase-interest scale that groups all (*n*)positive purchase quantities into a single “yes” response option. Partition dependence has been shown to influence forced-choice allocations of probabilities and fixed financial amounts across a set of options. People tend to evenly distribute their allocations across available partitions, some of which implicitly (e.g., a catch-all category of “all other”) or explicitly integrate multiple alternatives into a single response category (e.g., different funds into “Large-cap funds”). For example, a fund was more likely to attract investments when listed separately than if subsumed as part of a grouping of other funds (Benartzi & Thaler 2001). Similarly, a business school was judged more likely to be ranked first in the *Business Week* rankings when it was one of two options that grouped all other possibilities than when it was listed as one of six discrete options (Fox & Clemen 2005; study 1).

Partition dependence has also been found to affect single-item choices (Tannenbaum, Fox & Goldstein 2015). For example, physicians were more likely to prescribe one of four narrow-spectrum antibiotics when these were listed as discrete options alongside an option that grouped six broad-spectrum antibiotics, than when the four narrow-spectrum antibiotics were grouped and the six broad-spectrum ones were listed as separate options (Tannenbaum et al. 2015). Finally, frequency judgments have also been affected by the partitioning of the numeric response scale, such that participants report higher frequencies for irregular or moderately regular behaviors (e.g., snacking) on response scales that group low (“Up to 7 times”) and segregate high frequency options (8-9, 10-11, 12-13 and “Up to 13 times”) compared to scales that segregate low (“Up to 1 time”, 2-3, 4-5, 5-7 and “More than 7 times”) and group high ones (“More than 7 times”) (Menon, Raghubir & Schwarz 1995).

**3 Hypothesis**

To the best of our knowledge, partition dependence research has relied exclusively on forced-choice settings, where respondents had to choose one or more of the alternatives (e.g., one of the medicines provided, Tannenbaum et al. 2015) or fully allocate amounts provided (e.g., across investment options; Benartzi & Thaler 2001; or probabilities, Fox & Clemen 2005). It is possible, however, that the partitioning of the decision space might not only bias which alternatives are chosen, but also whether *any* are chosen (e.g., Dhar & Nowlis 2004).

A fully-partitioned scale that lists all possible quantities as separate options (0, 1, 2 … *n*) has a single negative purchase option (0) among *n* positive ones. In contrast, a dichotomous yes/no decision has an equal proportion of negative (“no”) and positive (“yes”) response options, the latter of which subsumes all positive quantities into one partition. In terms of an entirely naïve partition dependence (Benartzi & Thaler 2001), purchase incidence should therefore be lower in response to a yes/no (1/2) than a fully-partitioned quantity scale (1/*n+1*).

Of course, choices tend not to be random. Partitions can nevertheless serve as anchors with adjustments made based on factors such as prior knowledge or preference (Fox & Rottenstreich 2003). We therefore hypothesize that purchase incidence will be higherwhen a quantity decision is made directly in response to a fully-partitioned scale (anchored on a *n*-1/*n* naïve purchase prior) than when this same choice is made after an initial yes/no purchase-interest query, as that should result in more respondents opting out (anchored on a 1/2 naïve prior). We test this hypothesis in 4 studies. We also assess in study 4 whether purchase interest using an unbalanced scale (Malhotra 2006) with multiple positive purchase-interest options(“No”, “Mildly”, “Somewhat”, “Likely”, “Very”, and “Definitely”) eliminates this opt-out effect.

Partition dependence is considered to be a multi-determined phenomenon with the relative influence of underlying psychological processes dependent on the specific context (Johnson et al. 2012). For example, in choice allocations, a naïve prior anchor can be reinforced by a diversification bias (e.g., to manage investment risk, Benartzi & Thaler, 2001; or to seek variety, Fox, Ratner & Lieb, 2005). Psychological factors not traditionally considered as drivers of partition dependence may also operate, such as partitions affecting respondent mindsets (Gollwitzer 1990). We explore several potential mechanisms (e.g., attitude retrieval, extremeness aversion, mindsets, naïve responding). However, in line with prior research, we do not aim to establish the precise psychological underpinnings of partition dependence (Benartzi & Thaler 2001; Fox, Ratner & Lieb 2005; Tannenbaum et al. 2015; Williams et al. 2020) but rather focus on its novel application.

Finally, while partition dependence makes clear predictions for purchase incidence, it does not for purchase intensity among buyers. On the one hand, different from previous research (e.g., Menon, Raghubir & Schwarz 1995) all purchase quantities are selected using the same scale whether doing so directly or after responding “yes” to the yes/no purchase-interest question. This may result in a naïve purchase-quantity average of *n*/2 across conditions. On the other hand, an initial yes/no question may disproportionally cause “light” (“heavy”) buyers to opt out, which would result in a higher (lower) average purchase quantity among those who buy in the yes/no condition. We therefore examine quantity decisions among buyers on an exploratory basis.

**4 Study 1**

The purpose of study 1 was to test the hypothesis that purchase incidence is attenuated by an initial yes/no query regarding *whether to buy* versus directly asking *how much to buy* using a fully-partitioned quantity scale. We used instant lottery tickets that have the benefit of allowing the choice of different quantities of an identical product on a single purchase occasion.

**4.1 Procedure**

One hundred participants (average age = 32.4; 76% male) read the following instructions:“In a few moments you will receive your payment for participating in the study. As an extra bonus, we are offering you the option of receiving up to £5 of your payment in the form of half-price Monopoly® instant scratch cards and the remainder in cash. The tickets are actual tickets with a potential top prize of £100,000 that you would collect from the National Lottery. They normally cost £2 but you can receive them for only £1 as part of your compensation.” This procedure ensured there was no budget constraint and participants were aware their choices were binding, making the procedure incentive compatible.

Participants were randomly assigned to conditions. In the direct-quantityrequest(DQ) condition a quantity request immediately followed the instructions: “How many Monopoly® instant scratch cards are you interested in receiving as part of your payment?” Participants responded by selecting among quantity options ranging from “0” to “5”, with zero being the left-most option. The only difference in the yes/no purchase-interest question (Y/N) condition was that participants had to first respond “yes” or “no” to the question “Are you interested in receiving part of your payment in the form of Monopoly® instant scratch cards?” Participants further indicated their attitude towards scratch card lottery tickets on a 7-point scale (-3 = “Very negative”, 0 = “Neither negative, nor positive”, +3 = “Very positive”).

**4.2 Results**

Purchase incidence was higher in the direct-quantity (*M*DQ = 62%) than in the yes/no interest-first condition (*M*Y/N = 34%), χ2 (1, *N* = 100) = 7.64, *p* = .006. Among those who bought, there was no significant difference in the average quantity purchased (*M*DQ = 3.03 vs. *M*Y/N = 3.29, *t*(46) = .465, *p* = .64), or in the number of buyers who bought one (*M*DQ = 32.3% vs. *M*Y/N = 29.4%), three(*M*DQ = 22.6% vs. *M*Y/N = 17.7%), or five (*M*DQ = 45.2% vs. *M*Y/N = 52.9%) tickets (there were no purchases of 2 or 4 tickets; χ2’*s* > .76). This pattern suggests (1) that buyers did not entirely randomly select a quantity to purchase (i.e., by allocating their choices in a 1/*n* pattern), (2) that the results were not due to extremeness aversion (Neumann, Böckenholt & Sinha 2016) – among buyers “5” was chosen most often in both conditions and “0” was chosen most often among all participants – and (3) that there was no selection bias based on people with different purchase-quantity preferences.

The effect of condition on purchase incidence remained significant (χ2 = 8.75; *p* = 0.003) controlling for attitude valence (χ2 = 12.80; *p* = 0.0003) in a binary logistic regression. Condition also did not interact with attitude valence (χ2 = 1.67; *p* = 0.2) suggesting that the yes/no interest question did not activate attitudes in memory and thereby decrease (increase) purchasing among those with more negative (positive) attitudes (Fox, Ratner & Lieb 2005). Attitudes further had no main or interaction effect on purchase intensity in a multiple regression (*p*’s > .53). Finally, indicating the committal nature of the response, every participant who responded “yes” to the purchase-interest question selected a positive purchase quantity, whereas none of the participants who responded “no” did.

**5 Study 2**

The initial request in the interest-first choice condition of Study 1 represented a forced-choice yes/no response format. This type of dichotomous format can lead people who are uncertain about their response to select the option that is least likely to result in psychological discomfort (Luce 1988). Buying a lottery ticket represents a risk-taking behavior, and a yes/no response format could thus have led to disacquiescence similar to how acquiescence can occur with socially desirable responding (Sherman 1980). Alternatively, uncertainty can also lead to satisficing which can lead participants to opt out to avoid further questioning (Kreuter et al. 2011) or extreme responding (Krosnick 1999). Study 2 therefore included an “unsure” response option which should limit (dis)acquiesence (Dhar & Simonson 2003) and satisficing (Krosnick 1999) among uncertain participants.

**5.1 Procedure**

MTurk participants were randomly assigned to a direct-quantity, a yes/no, or a yes/no/unsure (Y/N/U) response format. Twelve participants failed to correctly answer a manipulation check (Oppenheimer, Meyvis & Davidenko 2009) resulting in a final sample of 417 (average age = 36.6; 57% male). Participants read the following scenario before making their hypothetical decisions: “Imagine that you stop at corner store on your way home from work in order to buy a magazine. You find a magazine you like and pay for it with a $10 bill. As the cashier is handing you your change of $5, you notice an instant lottery dispenser. You are feeling lucky. A scratch card costs $1 and the jackpot is $5000.” In the two interest-first conditions but not the direct-quantity condition, participants were asked “Would you be interested in buying any scratch cards?” before selecting a 0 to 5 quantity in response to “How many scratch cards would you be interested in buying?”

**5.2 Results**

Purchase incidence was higher in the direct-quantity (*M*DQ = 79%) than the yes/no (*M*Y/N = 61.3%), χ2 (1, *N* = 280) = 10.52, *p* = .001, and yes/no/unsure interest-first conditions (*M*Y/N/U = 66.4%), χ2 (1, *N* = 280) = 5.62, *p* = .02 (the means did not differ between the interest-first conditions, *p* > .37). There were no significant differences (*p*’s ≥ .27) in the average quantities purchased among buyers (*M*DQ = 2.49, *M*Y/N = 2.29, *M*Y/N/U = 2.25) or of any specific purchase quantity. Purchase incidence was consistent with the “yes” and “no” response for 265 of 269 participants in the interest-first conditions. The results of Study 2, therefore, replicated those of Study 1 without relying on a forced-choice format.

**6 Study 3**

Studies 1 and 2 found that the choice format affected *whether* but not *how much* people purchased. More people purchased when directly responding to a quantity request than when first asked to indicate their purchase interest in response to a dichotomous yes/no scale. This effect is consistent with partition dependence but also with mindset theory (Gollwitzer 1990). For example, in a heterogeneous choice setting, Xu & Wyer (2007) suggested “that the process of determining which of several options one would prefer to buy presupposes that a decision to purchase something has already been made” thereby creating an implemental “which-to-buy” mindset that “directs thoughts away from the option of not buying anything at all” (p.556). A direct purchase-quantity request may similarly create an implemental mindset that increases the likelihood of action, whereas an initial purchase-interest query may create a deliberative mindsetthat inhibits action (Gollwitzer 1990). For example, asking oneself “should I … or not?” has been shown to activate a deliberative mindset where individuals ponder an action’s expected value (Taylor & Gollwitzer 1995).

Study 3 therefore introduced a procedure commonly used for inducing a deliberative mindset (Gollwitzer & Kinney 1989). If the effects demonstrated were due to the interest question creating a deliberative mindset, then this procedure should eliminate the effect. Study 3 further included several tests for an implemental mindset (breadth of attention, Büttner et al. 2014; illusion of control, Wohl & Enzle 2002; and illusionary optimism, Gollwitzer & Kinney 1989).

**6.1 Procedure**

MTurk participants were randomly assigned to a 2 (direct-quantity vs. yes/no interest-first) by 2 (pre- vs. post-purchase appraisal) between-subjects design. Eighteen participants failed to correctly answer a manipulation check, resulting in a final sample of 637 (average age = 30.1; 59% male). The appraisal instructions read: “We would like you to take some time and reflect on gambling in general and on scratch cards in particular. In a brief statement could you tell us your position on this subject?” Participants also indicated attitude valence on a 7-point scale (Please rate your overall attitude towards instant-lottery scratch cards: +3 = Very positive, +2, + 1, 0 = Neither positive, nor negative, -1, -2, -3 = Very negative). In the pre-purchase appraisal conditions, this occurred before participants read the scenario. In the post-purchase appraisal conditions, it occurred after participants made their purchase decision and were assessed for an implemental mindset.

At the end of the study, participants indicated to what extent they considered their past behavior and general thoughts and feelings about scratch cards in their decision, and how carefully versus impulsively they made it. The results were robust when controlling for these measures and they are not included in the main analysis. The procedure was otherwise identical to that of Study 2.

**6.2 Results**

A logistic regression revealed two main effects but no interaction (*p* > 0.59) on purchase incidence. Purchase incidence was lower when attitude appraisal occurred pre versus post the purchase decision (*M*pre = 51.6% vs. *M*post = 67.3%, *χ2*= 7.014; *p* = 0.008). As before, purchase incidence was higher in response to the direct-quantity than the yes/no interest-first response formats (*M*DQ = 73.9% vs. *M*Y/N = 57.8%; *χ2*= 10.828; *p* < 0.001). This effect was significant both when attitude appraisal occurred pre (*M*DQ-pre = 67.3%vs. *M*Y/N-pre = 51.6%), *χ2*(1, *N* = 314) = 8.01, *p* = .006, and post the purchase decision (*M*DQ-post = 80.4% vs. *M*Y/N-post = 63.5%), *χ2*(1, *N* = 323) = 11.094, *p* = .001.

There were no other notable effects. The average purchase quantity amongst those who bought (*M*DQ-pre = 2.32, *M*Y/N-pre = 2.45, *M*DQ-post = 2.53, *M*Y/N-post = 2.46), or the purchase of any specific purchase quantity, did not differ between conditions (*p*’s > .55). Purchase quantity decisions were consistent with the “yes” or “no” response of 299 of the 315 participants in the interest-first conditions. There were no differences (*p*’s > .24) between conditions on the implemental mindset measures. Purchase incidence remained significantly higher in direct-quantity than y/n interest-first formats (χ2 = 14.21; *p* = 0.0002) controlling for attitude valence (χ2 = 157.36; *p* < 0.0001) and its interaction (*p* = .35) in a binary logistic regression. Response formats also continued to have no effect on purchase quantity (*p* > 0.91) when controlling for attitude valence (*F*[6, 405] = 11.47; *p* < 0.0001) and its interaction (*p* > 0.98) in a multiple regression.

Finally, while satisficing due to low cognitive effort is generally associated with acquiescence (Krosnick 1999), it is also possible that participants unwilling to expend effort would respond “no” in the interest-first conditions to avoid further questioning (Kreuter et al. 2011). The results do not support this possibility. In fact, non-buyers in the interest-first conditions rated their decision to have been more careful (*M* = 5.2) than did buyers (*M* = 4.3), *t*(312) = 5.02, *p* < 0.0001. Buyers (*M* = 4.5) in the direct-quantity condition similarly reported a lower level of carefulness than non-buyers (*M* = 5.0), *t*(320) = 2.52, *p* = 0.01, and the respective means did not differ between conditions (*p*‘s > .22).

**7 Study 4**

Study 4 was designed to directly explore whether the dichotomous nature of the yes/no interest question caused the opt-out effect replicated in studies 1-3. Specifically, study 4 included a condition for which purchase interest was ascertained with a scale that partitioned the “yes” response into five degrees of positive interest. This scale should result in fewer people responding “no” than a yes/no response format, that is, opting out based on a 1/6versus 1/2 naïve-prior anchor, respectively.

**7.1 Procedure**

Ten MTurk participants failed to correctly answer one of two attention checks, resulting in a final sample of 302 (average age = 39.8; 60% male). Participants read the same scenario and responded to the same purchase-quantity scale as in studies 2 and 3. In the direct-quantity condition they did so immediately after reading the scenario. In the interest-first conditions they initially responded to the question: “Would you be interested in buying any instant lottery tickets?” They answered either using a dichotomous yes/no response scale or using a positively unbalanced (PU) response scale (Malhotra 2006) that included 1 negative and 5 positive response options (“No”, “Mildly”, “Somewhat”, “Likely”, “Very”, and “Definitely”).

**7.2 Results**

A smaller proportion of participants purchased in the yes/no interest-first condition (*M*Y/N = 67.0%) than in the direct-quantity condition (*M*DQ = 88.1%; χ2 (1, *N* = 201) = 12.90, *p* = .0003) as well as compared to the positively unbalanced interest-first condition (*M*PU = 81.2%), χ2 (1, *N* = 201) = 5.27, *p* = .02. The latter two conditions did not differ in the proportion of buyers (*p* ≥ .17). There were no significant differences (*p’*s ≥ .11) in the average quantity purchased among buyers (*M*DQ = 2.60, *M*Y/N = 2.87, *M*PU = 2.43) or of any specific purchase quantity. All but one of the 150 participants who provided a positive response in the interest-first conditions subsequently purchased (those who responded “no” were not asked a purchase-quantity question in this study). These results provide direct evidence of partition dependence: more people opted out of purchasing in response to a dichotomous yes/no interest question than to a positively unbalanced interest scale.

**8 General discussion**

**8.1 Theoretical and practical contribution**

We examined purchase decisions in response formats that have high ecological validity, involve only a single contact, and do not rely on any deception. We found that posing a seemingly innocuous yes/no purchase interest question had a significant effect on purchase incidence for the quantity-based decision of a single alternative. Four studies found purchase incidence to be lower when asking people to make a yes/no purchase-interest decision – where all positive quantity options are groupedinto a “yes” response option – immediately prior to making a purchase-quantity decision that fully-partitioned positive quantities into discrete options. In study 4, the effect was eliminated when purchase interest itself was assessed using a positively unbalanced scale that partitioned the “yes” response into five degrees of interest, thereby reducing opting out. As such, our findings offer a novel partition-dependence perspective on yes/no responses to quantity-based decisions.

Our response scales influenced *whether* people buy but not *how much* they bought when they did. This suggests that the choice format affected the decision to buy itself, independent of and without biasing respondents’ quantity preferences. It further suggests that a yes/no interest question caused the same proportion of light and heavy buyers to opt out, in other words, that there was no selection effect related to purchase intensity. This may not always be the case. In particular, partition dependence has been shown to be negatively correlated with the extent of prior experience (Fox, Ratner & Lieb 2005) and the regularity of a behavior (Menon, Raghubir & Schwarz 1995). If there is a strong positive (negative) correlation between the frequency and intensity of a behavior, then we could well observe higher (lower) average purchase intensities following a yes/no interest question due to light (heavy) buyers opting out. Previous research has reported only a weak correlation in the frequency of gambling and the average bet size (*r* = .21; Prentice & Wong 2015), however, which may explain why we do not observe a similar selection effect in our studies.

It should further be noted that different choice architectures (range effects) have been found to affect purchase-quantities but not purchase incidence (e.g., Wansink, Kent & Hoch 1998). Delineating the effect of choice architecture on purchase incidence and intensity is important for marketers – e.g., knowing whether sales are derived from new customers or increased consumption among existing ones – as well as from a public policy perspective, where getting more people to exercise, recycle, or wear face masks, for example, has different consequences than getting those who do to increase its intensity.

Our aim was not to establish which of the likely multiple potential psychological mechanisms invoked for partition dependence (Johnson et al. 2012) caused the effect. We did, however, find that explicit attitude retrieval independently affected purchasing in studies 1 and 3 without moderating opting-out from yes/no questioning. We also found that the effect was eliminated when purchase interest was queried using an unbalanced scale in Study 4. We therefore conclude that it is unlikely that attitude-retrieval (e.g., Menon, Raghubir & Schwarz 1995) caused participants to opt out in response to a yes/no interest question.

Understanding the effect of choice formats is increasingly relevant in the digital age, where choice architects of e-commerce platforms and of mobile apps have to make choices as to how to optimally engage with customers. Implications of our findings are not restricted to purchase scenarios, but may be relevant for donation or non-financial behaviors. For example, formats similar to ours apply to exercise apps designed to motivate people to meet targets such as walking a certain number of steps. An app reminder that includes a positively unbalanced set of options such as “Not now”, “Walk 500 steps,” “Walk 1,000 steps” and “Walk more than 1,000 steps” should lead to a higher incidence of people taking a walk than a dichotomous “Let’s go/Not now” response format.

**8.2 Limitations, boundary conditions and future research**

Quantity decision regarding *how much* to buy are qualitatively different from choices of *which to buy*. Our research examined making a purchase-quantity decision of a single item and thereby avoided comparisons of heterogeneous alternatives. Deciding *whether* and *how much* to buy of a single alternative is an important domain of investigation in its own right. We caution, however, that our predictions and results cannot be directly generalized to *whether* and *which-to-buy* decisions from heterogeneous assortments, as these may involve additional psychological processes that may confound (e.g., mindsets, Xu & Wyer 2007) or counteract partition dependence (e.g., attribute versus alternative-based processing, Dhar & Nowlis 2004).

Our research did not systematically examine boundary conditions. However, cognitive survey research suggests that the effect should be sensitive to participants’ ability (e.g., uncertainty) and motivation (e.g., satisficing) to evaluate whether to take a course of action (Krosnick 1999). For example, ability may be related to prior experience which has been shown to limit partition dependence (Fox, Ratner & Lieb 2005). We may not, therefore, observe similar effects for highly regular behaviors (Menon, Raghubir & Schwarz 1995) or among frequent buyers in a category.

The visual design of the response scale may also moderate the effect. Respondents use multiple cues, such as the spacing of the scale points, the position of the scale midpoint, the numbers and words used as labels or even the hues at each end of the scale, to map their judgments onto the a response scale (for an overview, see Tourangeau, Couper & Conrad 2013, chapter 5). Partition dependence has also been shown to be sensitive to the salience of partitions (Fox, Ratner & Lieb 2005). Partition dependence for a yes/no question are may, therefore, be attenuated by self-generated verbal responses where the dichotomous scale is only implicit, or where the yes/no options only appear via a pull-down menu. In contrast, if “yes” were presented in green and “no” in red this should increase the visual prominence of the partition and amplify the effect.

Finally, a related stream of research on question-order effects has considered how an initial request can affect compliance to a subsequent request *after a delay*. For example, when making a hypothetical yes/no prediction, participants tend to over-predict that they would comply with the request to perform a socially desirable behavior, which leads to higher compliance for a subsequent request to actually perform this behavior (Sherman 1980). This type of effect has also been found for a choice architecture that is structurally similar to the one we examined. For example, when participants were asked to respond “yes” or “no” to the question “If you were contacted by your high school or college and asked to donate money, would you do so?” they subsequently had a higher donation rate (but not amount) to an actual donation request than participants’ who had not been previously contacted (Obermiller & Spangenberg 2000). These results are the oppositeof the effect reported here.

Unlike in our studies, however, their initial yes/no prediction was entirely noncommittal, private, and assessed by a party different from the one subsequently making an actual request after a significant delay (Obermiller & Spangenberg 2000). Burger’s (1999) meta-analysis of the related foot-in-the-door effect concluded: “it is apparent that the same-requester/no-delay procedure often is ineffective in increasing compliance and may in some cases lead to the opposite reaction” (p.314). In our no-delay setting, the samerequestor made an initial request that requires a binding response. Our findings are, therefore, not necessarily inconsistent with question-behavior effects separated by a delay. Previous question-order research does, however, suggest that our non-delay findings may not replicate or even reverse in delay settings(e.g., Burger 1999). Future research should, therefore, more systematically examine the efficacy of question-order effects in delay versus non-delay settings.

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