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Choosing Versus Rejecting: The Effect of Decision Mode on Subsequent Preferential Choices

Sangsuk Yoon[1] | Vinod Venkatraman[2]

[1]School of Business, University of Dayton, Dayton, Ohio, USA | [2]Fox School of Business, Temple University, Philadelphia, Pennsylvania, USA

Correspondence: Sangsuk Yoon (syoon1@udayton.edu)

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ABSTRACT

People often make decisions by either choosing an alternative they like (*choose* mode) or rejecting alternatives they dislike (*reject* mode). Previous research has demonstrated that these two decision modes involve distinct cognitive processes. In the current work, we further investigate whether these distinct cognitive processes in these two decision modes symmetrically or asymmetrically impact people's subsequent preferences for their preferred (chosen or nonrejected) alternatives. Across three experiments involving consumer goods, we found that participants exhibited stronger preferences for items preferred through the *choose* mode compared with items preferred through the *reject* mode. Using eye tracking, we demonstrate that this effect can be explained by more selective visual attention directed toward task-compatible alternatives in choosing versus rejecting decisions. We discuss the implications of our findings for theory and practice in the context of consumer preferences, as well as their extensions to other decision domains.

1 | Introduction

People often make decisions in two different modes—choosing an alternative that they like the most or rejecting less attractive alternatives until they are left with one that they dislike the least (Kim et al. 2019; Meloy and Russo 2004; Shafir 1993). For example, when purchasing a portable charger on Amazon, after searching through several alternatives, a customer can make a purchase decision either by choosing the most attractive one from these alternatives or by rejecting the less attractive ones until there is only one charger remaining (Tversky 1972). Similarly, when hiring a new employee, a manager can choose the most qualified candidate from the application pool or reject less suitable candidates until they have the last one remaining. An important question arises: Are preferences resulting from these two decision modes inherently different? Critically, is the subsequent perception of the final charger or job candidate likely to differ as a function of which decision mode is employed in the decision process?

Previous studies have documented that choosing and rejecting task modes involve distinctive cognitive processes, resulting in inconsistent decision outcomes. For instance, people often show a higher preference for hedonic items (Dhar and Wertenbroch 2000), a larger consideration set (Huber et al. 1987; Levin et al. 1998; Nagpal et al. 2015; Yaniv and Schul 1997, 2000), a larger product option size, and a higher payment in the rejecting mode compared with the choosing mode (Biswas and Grau 2008; Lu and Jen 2016; Park et al. 2000). Additionally, they exert higher cognitive effort and elaboration in rejecting than in choosing (Laran and Wilcox 2011; Sokolova and Krishna 2016) and exhibit distinctive information search patterns and neural mechanisms (Chen and Proctor 2017; Foo et al. 2014). Although it has been shown that choose and reject decision modes can reach incongruent decision outcomes, the focus has been on how people reach different decision outcomes depending on the two decision modes (e.g., Chen and Proctor 2017; Shafir 1993; Sokolova and Krishna 2016). Thus, it remains unclear whether the preferences for the preferred alternatives constructed from these two decision modes will also be inconsistent.

Previous studies have documented that *choose* mode increases subsequent preferences for chosen alternatives, whereas it decreases preferences for nonchosen alternatives (Sharot, Velasquez, et al. 2010; Voigt, Murawski, and Bode, 2017). However, most of these studies focus only on the effect of *choose* mode on subsequent preferences (e.g., Izuma and Murayama 2013; Sharot, Velasquez, et al. 2010; Voigt, Murawski, and Bode, 2017), but little is known about whether the *reject* decision mode impacts subsequent preferences for the preferred item in a way comparable to the *choose* decision mode.

In the current study, we aim to bridge this gap by systematically investigating how *choose* versus *reject* decision modes influence the construction of preference for preferred alternatives from both task modes when making subsequent decisions involving previously chosen or nonrejected alternatives. In many real-world decisions, people often confront and evaluate the same alternative again in future decisions. Previous studies have shown that the same individuals might employ different decision strategies for the same decision problem under different contexts (Venkatraman et al. 2014). Therefore, evaluating whether different cognitive processes and decision strategies are involved in the *choose* versus *reject* decision modes can help elucidate whether and how these decision modes differentially influence subsequent preferences for the exact same items previously chosen or nonrejected in later decisions.

1.1 | Asymmetry in Information Processing Across Choose and Reject Task Frames

The effect of decision modes has been studied in the field of the *choose* versus *reject* task framing effect. In a seminal study, participants were asked to imagine that they were part of a jury in a sole-custody case and decide which of two parents they would award (*choose* frame) or deny (*reject* frame) custody of the child (Shafir 1993). The descriptions of the parents were constructed in such a way that one parent was average on all attributes (impoverished alternative) while the other parent was superior on some attributes and inferior on others (enriched alternative). Surprisingly, 64% of the participants in the *choose* frame awarded sole custody of the child to the enriched alternative. On the other hand, 55% of the participants in the *reject* frame denied sole custody to the enriched alternative, showing that the same alternative can be evaluated as both better and worse than the other alternative depending on the task frame (but also see recent inconsistent replication results; Chandrashekar et al. 2021; Klein et al. 2018).

The *choose* versus *reject* preference reversal was attributed to the selective focus on the task-compatible attributes in the given task frame (Shafir 1993). In the *choose* frame, participants look for reasons why a parent should be awarded sole custody, whereas in the *reject* frame, they look for reasons a parent should be denied sole custody. Because the enriched alternative provides justifiable reasons for both frames, it leads to confirmatory information processing in each decision frame, resulting in the *choose* versus *reject* preference reversal.

Further studies have provided supporting evidence of the compatibility explanation. For example, Nagpal and Krishnamurthy (2008) found that participants in the *choose* frame made faster decisions for an attractive item pair than for an unattractive item pair, whereas those in the *reject* frame made faster decisions for an unattractive item pair than for an attractive item pair. Moreover, participants felt less difficulty, exerted less effort, and demonstrated higher memory recall of attributes in the compatible conditions (*choose*-attractive and *reject*-unattractive items pair). Similarly, other studies have found that task-compatible attributes (positive attributes in *choose* frame and negative attributes in *reject* frame) are weighted more during the decision processes (Meloy and Russo 2004) and that people are more confident and predict consensus for their decisions from others in compatible conditions (e.g., *choose*-attractive face pairs and *reject*-unattractive face pairs) than in incompatible conditions (e.g., choose-unattractive face pairs and reject-attractive face pairs; Perfecto et al. 2017). Yaniv and Schul (2000) also showed supporting evidence that the acceptance–elimination discrepancy was the largest for the intermediate alternatives, which provide weak cues to be accepted or eliminated, whereas those with strong signals to be accepted or eliminated showed a lower acceptance–elimination discrepancy (also see Yaniv and Schul 1997). Although the compatibility explanation has been widely accepted, other studies have shown that *choose* and *reject* task frames do not always entail symmetric processes of task-compatible information. For example, studies that used process tracing methods provide evidence of asymmetric selective task-compatible information processes between the two task frames. Using a think-aloud task, Chen and Proctor (2017) found that positive features of alternatives were mentioned similarly between the two task frame conditions, but negative features were mentioned significantly more in the *reject* frame than in the *choose* frame, showing that both positive and negative features were more thoroughly processed in the reject frame.

Other vision studies that use faces and natural scenes have also shown a similar pattern, where people fixated for a longer time on the selected items than on the nonselected items (i.e., gaze bias), regardless of task frames. However, the gaze bias was larger when they were asked to select one they liked more (*choose* frame) than when they were asked to select one they disliked more (*reject* frame) in the early stage (Schotter et al. 2010) or in the later stage (Mitsuda and Glaholt 2014) of the decision process. These findings suggest that in both task frames, people process task-compatible information more than task-incompatible information, but this difference is greater in the *choose* frame than in the *reject* frame.

1.2 | Effect of Choice on Subsequent Preference

It is widely believed that choice behavior simply reveals one's preference, but previous studies have shown that choices also shape future preferences (for a review, see Ariely and Norton 2008).

For example, a classic cognitive dissonance experiment found that participants who were paid a small monetary incentive ($1) for completing a monotonous task enjoyed the task more than those who were paid a large monetary incentive ($20; Festinger and Carlsmith 1959). Those who received the small incentive needed to justify their participation by believing that the task was enjoyable, whereas those who received the large incentive did not need to justify their decisions because the incentive was large enough to carry out the monotonous task. Therefore, the mere effort of justifying one's behavior can influence the perception (or utility) of the experience.

Since the early study on cognitive dissonance, several studies have demonstrated that choices affect people's preferences for the chosen and nonchosen items, subsequently, a phenomenon known as choice-induced preference (Izuma et al. 2010; Sharot, Velasquez, et al. 2010). For example, Simon, Krawczyk, et al. (2004) asked participants to rate the desirability of four different aspects (office, commute, salary, and vacation) of two job offers (two attributes favored one job offer, while the other two attributes favored the other job offer) before and after they chose between one of the two job offers. After making the choice decision, participants showed increased desirability for the attributes that favored their choice and decreased desirability for the attributes that favored the nonchosen option (also see similar findings, Simon, Krawczyk, et al. 2008; Simon and Spiller 2016).

Further studies have shown that choice-induced preference occurs only when decisions are actively made by the decision maker (Sharot, Velasquez, et al. 2010), persists even after a delay of 2.5–3 years (Sharot, Fleming, et al. 2012), and remains robust even when the decisions are consequential (e.g., WTP for food items; Voigt, Murawski, and Bode, 2017). Yet, most of these choice-induced preference studies focus on the effect of *choose* mode, and little is known about whether these effects also extend to items chosen passively by *nonrejection*.[1] Critically, it remains unclear whether *reject* mode will also increase preferences for the preferred (nonrejected) alternatives and decrease preferences for the nonpreferred (rejected) alternatives as the choose mode does, and if so, whether the postdecision preference changes are greater in one task mode relative to the other. To our knowledge, there has been one study by Chandrashekar et al. (2021), which measured the attractiveness of the alternatives after a *choose* or *reject* task. However, the focus of their analysis was primarily on how the attractiveness rating difference between enriched and impoverished alternatives affected the choice of enriched alternatives, and the preexisting preferences for the paired alternatives were not controlled. In the current research, we examine how the two decision modes influence subsequent preferences for previously preferred and nonpreferred alternatives, using a design that avoids enriched and impoverished attributes while controlling for participants' preexisting preferences.

1.3 | The Role of Decision Processes in Choice-Induced Preference

It has been widely accepted that choice-induced preference changes emerge after a decision is made due to the effort to mitigate cognitive dissonance. When people are asked to choose between two equally preferred alternatives, they feel negative emotions due to the difficulty of the task. After the choice is made, people exert effort to alleviate the negative emotions that stem from making the decision by adjusting their preferences (perceiving the chosen one as more attractive and the nonchosen less attractive compared with before making the decision). Thus, harder decisions induce larger preference divergence between the chosen and nonchosen alternatives (Izuma et al. 2010).

However, recently, Voigt, Murawski, Speer, et al. (2019) showed that preference divergence can also emerge not only after the decision is made, but also during the decision-making process. Their results showed that the brain activations in the left dorsal prefrontal cortex and the left precuneus during the (*choose*) decision processes were positively associated with postchoice WTP changes. Moreover, these changes in postchoice WTP were correlated with relative visual fixation durations for the chosen items (i.e., gaze bias) during the decision processes. In particular, this positive association between gaze bias and postchoice preference changes opens up the possibility that more selective processing of task-compatible information or alternatives (i.e., chosen alternatives relative to nonchosen alternatives) during the decision process can drive greater changes in postchoice preferences.

The choice-induced preference literature provides insights into how choice decisions shape preferences for the alternatives. However, the primary focus is on the effect of the *choose* mode on subsequent preferences, leaving whether and how the *reject* mode influences subsequent preferences untapped. On the other hand, the *choose* versus *reject* preference reversal literature provides insight on how people reach their decisions differently in those task modes. However, it has concentrated on its effect on preferences only in the current decision, leaving its effects on subsequent preferences unanswered. Thus, this study aims to bridge the gap between these two streams of literature by investigating the effect of *choose* and *reject* decision modes on subsequent preferences for alternatives that are preferred from both task modes.

Previous research has shown that the *choose* mode leads to greater selectivity in processing task-compatible information than the *reject* mode (Chen and Proctor 2017; Mitsuda and Glaholt 2014). This difference in selectivity may be attributed to the encouraged focus on the positive aspects of alternatives to make a decision, as suggested by Shafir (1993). Similarly, the *reject* mode may lead to a heightened focus on negative aspects, but there is a more balanced consideration of both positive and negative aspects to eliminate less desirable alternatives. As a result, the *choose* mode may lead to a stronger confirmation bias, where individuals search for information that supports their preferred alternatives, leading to a greater gaze bias and subsequent preference for the chosen alternatives. Consequently, we hypothesize that people will show weaker gaze bias and subsequent preferences for the preferred alternatives from the *reject* mode compared with those from the *choose* mode.

Previous literature has shown that attention not only reveals our preferences but also shapes preferences during the decision process (Payne and Venkatraman 2011). The gaze cascade model shows that people allocate similar amounts of attention across equally attractive alternatives in the early stages of decision making, but shift to allocating more attention toward the chosen alternative as they get closer to making the decision (Shimojo et al. 2003). Similarly, the attentional drift-diffusion model suggests that during the time course of decision making, the value of the item not fixated on is depreciated relative to that of the item fixated on (Krajbich et al. 2010; Thomas et al. 2019). Furthermore, attention has been shown to influence subsequent preferences. For example, Janiszewski et al. (2012) found that participants chose previously attended items from a preceding classification task more often when the attended items were presented together with a foil item in subsequent trials. Similarly, using a choice-induced preference paradigm, Voigt, Murawski, Speer, et al. (2019) also showed that people showed greater gaze bias toward chosen alternatives, resulting in greater changes in postchoice WTP.

Although these studies have focused on the *choose* decision mode, where participants were asked to choose one alternative they liked more, we investigate whether attention is differentially allocated in *choose* versus *reject* decision modes and whether this can explain the asymmetric effect of these two decision modes on subsequent preferences. We employ eye tracking to understand the decision processes in the two decision modes and whether these modes lead to different gaze biases. Prior vision studies that investigated attention allocation in *choose* and *reject* decision modes in a nonconsumer decision context (e.g., faces, natural scenes, and animals) have shown larger gaze bias (difference in gaze durations between chosen/rejected and nonchosen/nonrejected items) during the decision processes in the *choose* mode than in the *reject* mode (Mitsuda and Glaholt 2014; Schotter et al. 2010). Therefore, we anticipate that the gaze bias will be greater in the *choose* mode than in the *reject* decision mode in consumer decision settings, potentially contributing to the asymmetric effects of *choose* versus *reject* decision modes on subsequent preferences.

2 | Overview of Studies

Across three experiments, we investigate the effects of *choose* versus *reject* modes on subsequent preferences for the preferred items using a binary free-choice task (Egan et al. 2007; Janiszewski et al. 2012) and choice-induced preference paradigm (Izuma and Murayama 2013; Sharot, Velasquez, et al. 2010; Voigt, Murawski, Speer, et al. 2019). We define preferred items as those either chosen/included from the *choose* mode or nonrejected/nonexcluded from the *reject* mode while nonpreferred items are defined as those either nonchosen/nonincluded from the *choose* mode or rejected/excluded from the *reject* mode. Binary choice tasks allow us to clearly identify one preferred item and one nonpreferred item in both *choose* and *reject* decision modes, enabling a direct comparison of subsequent preferences for the prior items from the two different decision modes (Meloy and Russo 2004). Market goods (e.g., notebooks, DVDs, small appliances, kitchen utensils, and clothing items) are used as experimental stimuli throughout our study as they are more familiar to participants and represent real-world daily decision contexts.

Study 1 tests the effect of the *choose* versus *reject* decision modes on preferred alternatives when those alternatives are paired with a new item from the same product category in subsequent binary choices. Study 2 investigates the effect of decision modes on preferences in subsequent decisions by directly pairing preferred items from both decision modes in a within-subjects paradigm. Study 3 examines the effect of the two decision modes on subsequent preferential judgments and explores whether and how attention allocations between preferred and nonpreferred items are influenced by the different decision modes.

3 | Study 1

3.1 | Method

Seventy-two undergraduate students ($M_{age} = 19.64$, $SD = 1.52$; 26 females) from a university in the Northeast region of the United States participated in the experiment in exchange for class credit. The sample size was predetermined to recruit at least 35 participants in each experimental condition. However, the recruitment was on a group basis, so the sample size slightly exceeded the target number. All studies were approved by the Institutional Review Board at the university where the data were collected. Participants were randomly assigned to either a *choose* or a *reject* condition. In both conditions, participants made binary decisions across two phases (Phase 1 and Phase 2) for 48 different item categories, each item category containing three similar items (all stimuli are available at https://osf.io/4nqws/). For each item category, two randomly selected items were presented as decision alternatives in Phase 1, and the remaining third item was retained as an alternative for Phase 2 (Figure 1). In Phase 1, participants in the *choose* condition were asked to *choose* one of the two items that they would like to include in their consideration set, while those in the *reject* condition were asked to *reject* one of the two items that they disliked from being included in their consideration set. In Phase 2, the preferred (*chosen* or *nonrejected*) item from Phase 1 was paired with the remaining item from the same item category (*new* item), and participants were asked to indicate which one of the two paired items they would like to purchase more. Therefore, those in the *choose* condition were asked to indicate one they would like to purchase more between the *chosen* item from Phase 1 and the *new* item, whereas those in the *reject* condition were also asked to indicate the one they would like to purchase more between the *nonrejected* item from Phase 1 and the *new* item. The key interest was whether the relative preference for the preferred item (target item; the *chosen* item in the *choose* condition or the *nonrejected* item in the *reject* condition) in Phase 2 varied as a function of whether it was chosen or nonrejected in Phase 1. Before starting the main experiment, we ensured all participants, especially in the *reject* condition, clearly understood their task instructions.

3.2 | Results

To examine the effect of *choose* versus *reject* decision modes on subsequent preferences for the target items, we conducted a multilevel logistic regression analysis with individual participant-level intercepts, regressing target item choice in Phase 2 ("1" = *target item choice* vs. "0" = *new item choice*) on the task frame in Phase 1 ("1" = *choose mode* vs. "0" = *reject mode*). The result showed that the *choose* mode resulted in a higher

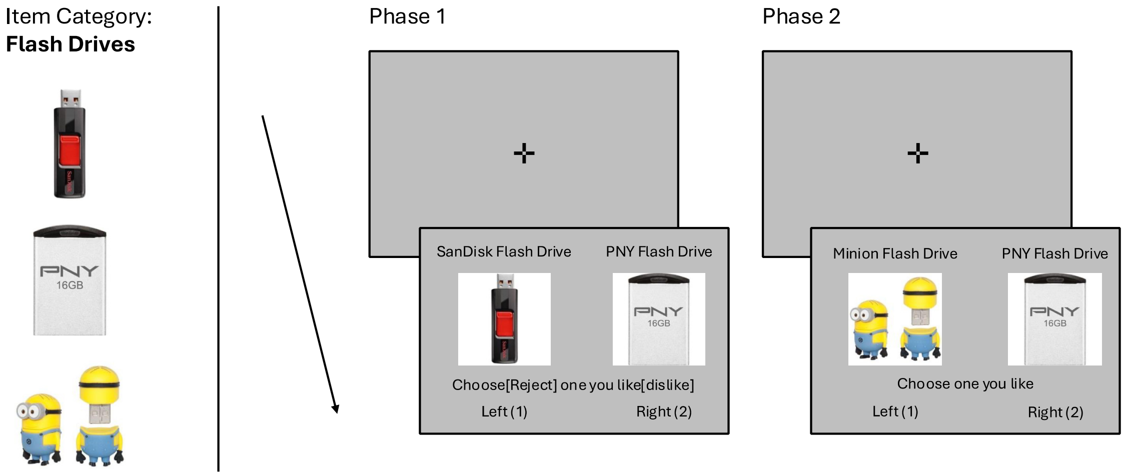

FIGURE 1 | An example of the experimental procedure in Study 1. There were 48 different item categories, and each item category (flash drives) consisted of three items (SanDisk, PNY, and Minion). In Phase 1, two randomly selected items (SanDisk and PNY) were presented, and participants were asked either to *choose* one they would like to include in their consideration (*choose* condition) or *reject* one they would dislike including in their consideration set (*reject* condition). In Phase 2, the preferred item (*chosen* or *nonrejected*; here, PNY; PNY was chosen in the *choose* condition, while SanDisk was rejected in the *reject* condition in Phase 1) was paired with the remaining third item (Minion; *new* item), and participants in both conditions were asked to indicate which of these two items they would like to purchase. The main dependent variable was the choice share of the preferred items from Phase 1 (*target* item; PNY in this example) in Phase 2.

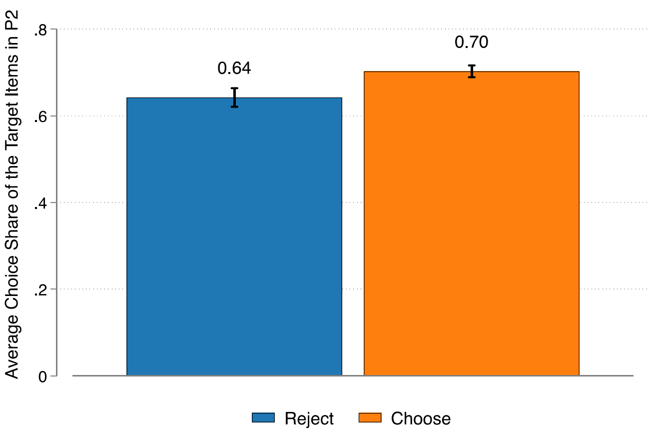

FIGURE 2 | The average choice share of the target items in Phase 2, depending on the task mode applied in Phase 1. Error bars indicate standard errors of the mean.

preference for the target items (M = 0.70, SD = 0.08) than the *reject* mode (M = 0.64, SD = 0.13), and the difference was statistically significant ($b = 0.27$, SE = 0.12, $z = 2.35$, $p = 0.019$; Figure 2).

We further tested whether the choice share of the target items was significantly different from the chance level ($p = 0.66$; Chen and Risen 2010) in the two decision mode conditions. Using a one-sample *t*-test on each participant's averaged target item choice share for each condition separately, we found that the *choose* mode led to the selection of the target items significantly more than the chance level ($t[35] = 3.13$, $p = 0.004$, $d = 0.52$), whereas the *reject* mode did not ($t[35] = -0.82$, $p = 0.416$, $d = 0.14$). Our findings suggest that the *choose* mode increases subsequent preferences for the preferred items significantly more than the *reject* mode does. Moreover, while the *choose* mode increased subsequent preferences for the target items, the *reject* mode neither increased nor decreased preferences for the target items compared with the chance level in subsequent preferential choice decisions.

3.3 | Follow-Up Study of Study 1

One potential confounding factor in Study 1 may be that the *reject* condition required a task switch in Phase 2 from rejecting to purchasing, which is another form of choosing. It is possible that the greater target choices in the *choose* condition were simply due to the convenience of making consistent choices, as they could maintain the same decision rule. To rule out this potential confound, we conducted a follow-up study using a full factorial design to replicate the findings of Study 1 and to rule out the possibility that greater target choices in the *choose* condition simply resulted from the convenience of making consistent choices.

3.3.1 | Method

A 2 (Phase 1 decision mode: choose vs. reject) × 2 (Phase 2 decision mode: choose vs. reject) between-subjects design was used. We aimed to recruit about 200 participants in each experimental condition, and 800 participants were recruited via Amazon Mechanical Turk in exchange for a cash payment ($M_{age} = 39.31$, SD = 13.40; 425 females). Participants were randomly assigned to one of the four experimental conditions in this single-trial experiment. Three items in the same product category (sweets) were used in this study: Godiva Chocolates, Moonstruck Truffles, and LaDuree Macarons (see Appendix S1 for stimuli and instructions). In Phase 1, two items (Godiva chocolates vs. Moonstruck truffles) were presented on the screen, and participants were asked to either choose one they would like to include in their consideration set (Phase 1 *choose* condition) or reject one they do not want to include in their consideration set (Phase 1 *reject* condition). In Phase 2, the preferred item from Phase 1 (chosen or nonrejected) was paired with the third item (LaDuree macarons; new item), and participants were asked to choose one they want to purchase (Phase 2 *choose* condition) or reject one they want to give up (Phase 2 *reject* condition). We examined whether preferences for the preferred item (target item) significantly differed as a function of task modes from both phases.

3.3.2 | Results

We regressed the target choice ("1" = *target item choice* vs. "0" = *choice of the new item*) on Phase 1 decision mode ("0" = *reject* vs. "1" = *choose*) interacted with Phase 2 decision mode ("0" = *reject* vs. "1" = *choose*) using logistic regression analysis (Figure 3). There were significant main effects of Phase 1 decision mode (Wald $\chi^2 = 3.87$, $p = 0.049$) and Phase 2 decision mode (Wald $\chi^2 = 4.61$, $p = 0.032$), showing a higher preference for the target item when the *choose* mode was employed than when the *reject* mode was employed in Phase 1, while a lower preference for the target item when the choose mode was employed than when the reject mode was employed in Phase 2. However, the interaction between Phase 1 and Phase 2 decision modes was not statistically significant (Wald $\chi^2 = 1.15$, $p = 0.284$), indicating that switching tasks did not exert significant effects on subsequent preference.

3.4 | Discussion

The results of Study 1 showed an incongruent effect of the two decision modes on subsequent preferences for the preferred items. The *choose* mode increased subsequent preference for the chosen items significantly more than the *reject* mode did. However, the *reject* mode neither decreased nor increased subsequent preference for the nonrejected items compared with the chance level.

This follow-up study aimed to rule out task consistency as a potential explanation for the greater subsequent preference for the target items after a *choose* mode in Study 1, using a full factorial design. Consistent with Study 1, participants in the Phase 1 *choose* condition showed a significantly greater subsequent preference for the preferred item over a newly paired item compared with those in the Phase 1 *reject* condition, regardless of the task mode employed in Phase 2. This result further validates that task switching does not fully explain why a *choose* mode increases subsequent preference for the preferred item significantly more than a *reject* mode does.

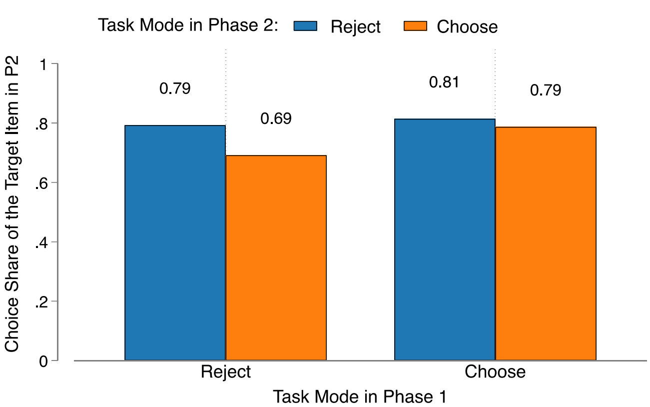

FIGURE 3 | Choice share of the target item (the preferred item from Phase 1) in Phase 2 by decision modes in Phase 1 and Phase 2.

4 | Study 2

Study 1 showed an asymmetric effect of *choose* versus *reject* decision modes on subsequent preferences for preferred alternatives, with the *choose* mode exerting a stronger influence. However, one potential limitation might be that the subsequent preferential choices in Phase 2 involved comparisons between a preferred item from Phase 1 and a new item. This might introduce a potential influence on how participants process the new item between the two decision modes. For example, participants in the *choose* condition, having already accumulated the positive aspects of their chosen item, might have approached new items with a more critical perspective, actively seeking negative attributes. Conversely, those in the *reject* condition, having focused on the negative aspects of their nonrejected item, might have approached new items with a more favorable perspective, actively seeking positive attributes that might make it a decent alternative.

To address this potential concern, Study 2 takes a different approach by directly comparing preferred items from both decision modes–specifically, by pairing chosen items with nonrejected items. This direct comparison provides a more controlled examination of the relative strength of the influence of the *choose* and *reject* decision modes on subsequent preferences for the preferred alternatives. Additionally, we also aim to extend our understanding of the effect of the two decision modes on subsequent preferences by examining whether *choose* and *reject* decision modes symmetrically influence subsequent preferences for nonpreferred items, by pairing the rejected items with the nonchosen items. By examining both preferred and nonpreferred items between the two decision modes, Study 2 allows us to develop a more complete understanding of how different decision modes shape subsequent preferences across the entire choice set.

4.1 | Method

A total of 52 university undergraduate students ($M_{age} = 21.06$ years, $SD = 3.78$, 32 females) participated for class credit, consistent with the predetermined aim of recruiting at least 50 participants. Overall, experimental procedures were similar to Study 1, with a few small changes. Another item was added to each of the 48 item categories from Study 1, such that each category now had four different items (Figure 4). From these four items in each category, a randomly selected pair of items was used for the *choose* mode, while the remaining two items were used for the *reject* mode for each participant. This enabled participants to make both *choose* and *reject* decisions for each item category in Phase 1. Phase 1 consisted of a total of 96 trials, all of which were randomized. To clarify the required decision mode in each trial, we presented the task mode with different colors (choose mode in green and reject mode in red) before an item pair was provided. Phase 2 had two item pair

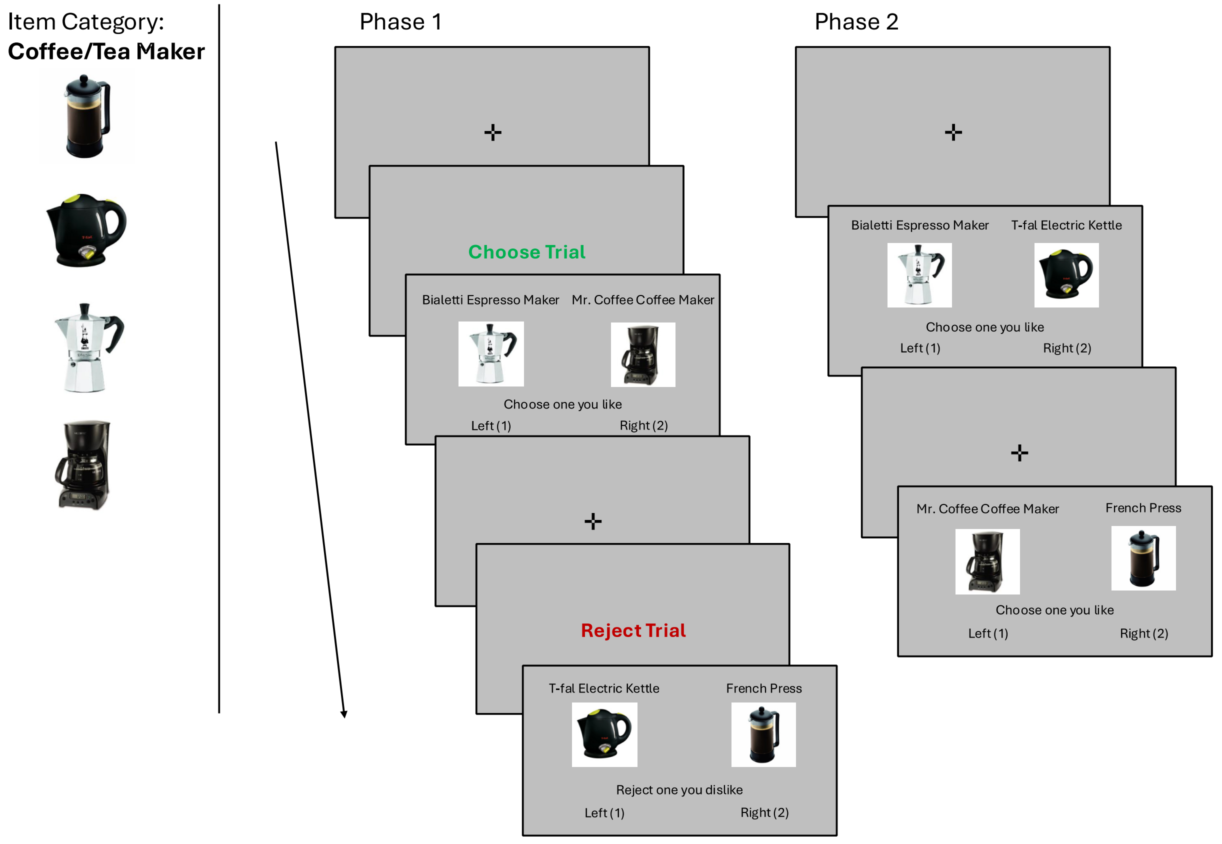

FIGURE 4 | Example trials in Study 2. Each item category (coffee/tea maker) had four items. Randomly selected two items were paired for the *choose* task (Bialetti and Mr. Coffee), and the other two were paired for the *reject* task in Phase 1 (T-fal and French Press; all trials were fully randomized). In Phase 2, preferred items (chosen and nonrejected; Bialetti and T-fal) and nonpreferred items (nonchosen and rejected; Mr. Coffee and French Press) were paired, respectively. The preferred items block preceded the nonpreferred items block, but item categories were randomized within each block. Participants were asked to indicate which one they would like to purchase more.

blocks: a preferred item pair block (chosen vs. nonrejected items from Phase 1; 48 trials) and a nonpreferred item pair block (nonchosen vs. rejected items from Phase 1; 48 trials). The preferred item pair block was always presented first because the primary research interest was to examine the relative preference for the preferred items from the two decision modes. Within each block, trials were randomized. Consistent with Study 1, participants were always asked to choose one of the two items they would like to purchase more of in Phase 2 for both preferred and nonpreferred item pairs. The main dependent variable was the choice share of chosen items in the preferred item pair block and that of rejected items in the nonpreferred item pair block in Phase 2 as a function of Phase 1 task modes.

4.2 | Results

To examine relative preference between chosen items and nonrejected items in the preferred item pair trials, we computed the choice share of purchasing the chosen item in Phase 2 and tested whether it was significantly greater than the chance level ($p = 0.50$). If the chosen items were more preferred than the nonrejected items, the choice share of the chosen item (target items) would be significantly higher than the chance level. Using a one-sample *t*-test on each participant's averaged target item choice share, we found that participants preferred the chosen items to

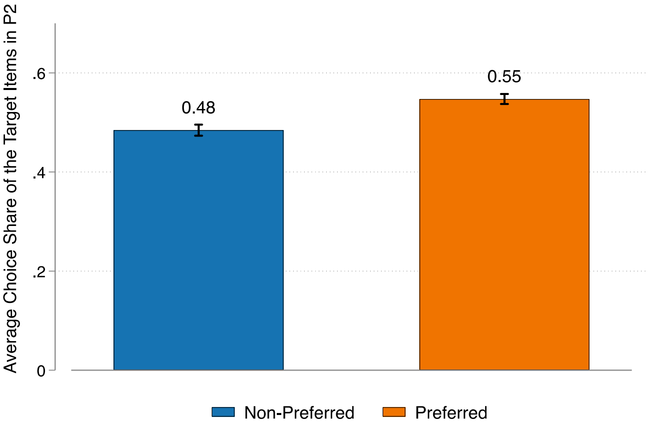

FIGURE 5 | Average choice share of the target items in Phase 2 in the preferred item pair block and the nonpreferred item pair block. The target items indicate the chosen item from the *choose* mode in the preferred item pair block, while the target items indicate the rejected item from the *reject* mode in the nonpreferred item pair block. Error bars indicate standard errors of the mean.

the nonrejected items ($M = 0.55$, $SD = 0.07$), and the choice share was significantly above the chance level ($t[51] = 4.67$, $p < 0.001$, $d = 0.65$; Figure 5).

We also explored relative preference between nonchosen items and rejected items in the nonpreferred item pair trials by comparing whether the average choice share of the rejected items was significantly smaller than the chance level ($p = 0.50$). If the rejected items were less preferred than the nonchosen items, the choice share of the rejected item (target items) would be significantly smaller than the chance level. Using a one-sample *t*-test, we found that participants preferred the nonchosen items to the rejected items (M = 0.48, SD = 0.08), but the choice share was not significantly below the chance level ($t(51) = -1.38$, $p = 0.173$, $d = 0.19$).

4.3 | Discussion

Study 2 investigated the effect of *choose* versus *reject* decision modes on subsequent preferences more directly by pairing preferred items from both decision modes. Consistent with Study 1, participants preferred the chosen items to the nonrejected items, showing that a *choose* mode increased subsequent preferences for the preferred items significantly more than a *reject* mode did when they were directly paired together in Phase 2.

Study 2 also examined the effect of the two decision modes on nonpreferred items. When the nonchosen and the rejected items were paired directly together, participants did not show any biased preferences for either of the items, suggesting that a *reject* mode did not decrease subsequent preferences for the nonpreferred items more than a *choose* mode did. Although we observed a directional pattern where preferences for rejected alternatives were lower than those for nonchosen alternatives, this difference was not statistically significant. This may be explained by extending the compatibility hypothesis. Although people generally processed task-compatible alternatives more by accumulating supporting evidence in both task modes, the selectivity toward task-compatible alternatives was lower in the *reject* mode. This reduced selectivity might explain why the effect on rejected alternatives was less prominent than that on chosen alternatives.

Overall, the results indicated that a *choose* mode boosted preferences for preferred items, but a *reject* mode did not symmetrically reduce preferences for nonpreferred items compared with a choose mode.

5 | Study 3

Study 3 further examined the effect of *choose* versus *reject* decision modes on subsequent preferences, aiming for two goals. First, while Studies 1 and 2 tested the effect of the two task modes on subsequent preferences for the preferred alternatives using a two-stage forced choice task, in Study 3, we aimed to test whether the two decision frames affected subsequent preferences in preferential judgments employing a choice-induced preference paradigm. In a (forced) choice task, decisions are made relative to the other given options, entailing more comparative processes between given options, while in a judgment task, where a single item is evaluated, it is more likely that the value of an alternative is evaluated solely by focusing on the alternative (Hsee 1996; Hsee et al. 1999; O'Donnell and Evers 2019). Thus, it enabled us to better understand how the preferences for the preferred and nonpreferred alternatives changed after the two decision modes, excluding the potential effect of paired items.

Second, we aimed to investigate a potential mechanism underlying the asymmetric effect of the two task modes on subsequent preferences with eye tracking. Previous literature has shown that attention not only reveals our preferences but also shapes preferences during the decision processes (Payne and Venkatraman 2011), through which the value of an attended (vs. unattended) item is appreciated (vs. depreciated) relative to that of an unattended (vs. attended) item (Krajbich et al. 2010; Shimojo et al. 2003; Thomas et al. 2019). A recent choice-induced preference study by Voigt, Murawski, Speer, et al. (2019), which focused only on the *choose* task mode, showed that more biased attention toward chosen items can contribute to greater preference increases for the chosen items. Prior vision studies that investigated attention allocations in the *choose* and *reject* decision modes in a nonconsumer decision context (e.g., faces, natural scenes, and animals) have shown larger gaze bias (difference in gaze durations between chosen/rejected and nonchosen/nonrejected items) during the decision processes in the *choose* mode than in the *reject* mode (Mitsuda and Glaholt 2014; Schotter et al. 2010). Thus, we aimed to investigate whether, consistent with the previous *choose* versus *reject* task mode vision studies, the gaze bias would be greater in the *choose* mode than in the *reject* decision mode in consumer decision contexts, and how the asymmetric gaze bias in the two decision modes was associated with subsequent preference changes.

5.1 | Methods

A total of 78 ($M_{age} = 19.95$ years, SD = 1.02, 39 females) university undergraduate students were recruited in exchange for class credit, aiming to recruit at least 35 participants in each experimental condition, and they were randomly assigned to either the *choose* condition ($N = 36$) or the *reject* condition ($N = 42$). The study consisted of three phases (Figure 6). In Phase 1 (first rating), participants were asked to rate the attractiveness of 80 items using an 8-point scale ("1" = *not attractive at all*; "8" = *very attractive*). In Phase 2 (decision phase), the 80 items were rank ordered based on the ratings from Phase 1 and sequentially paired consecutively based on these rankings to ensure that the paired items had similar attractiveness ratings. Participants in the *choose* condition were asked to indicate the one they liked more, while those in the *reject* condition were asked to indicate the one they disliked more. In the last phase (Phase 3; second rating), participants were asked to rate the attractiveness of all 80 items again using the same 8-point scale used in Phase 1. The presentation order of items or item pairs was fully randomized within each phase.

Participants completed the task while sitting in front of a Tobii T60XL eye-tracker. Participants were instructed to minimize their head and body movement as much as they could. A 9-point calibration was used for the eye tracker, and a research assistant who did not know about the research purpose monitored the eye-tracking signal during the task, while seated in the experimental room with a separate monitor screen. When eye-tracking signals were unstable or out of bounds, participants

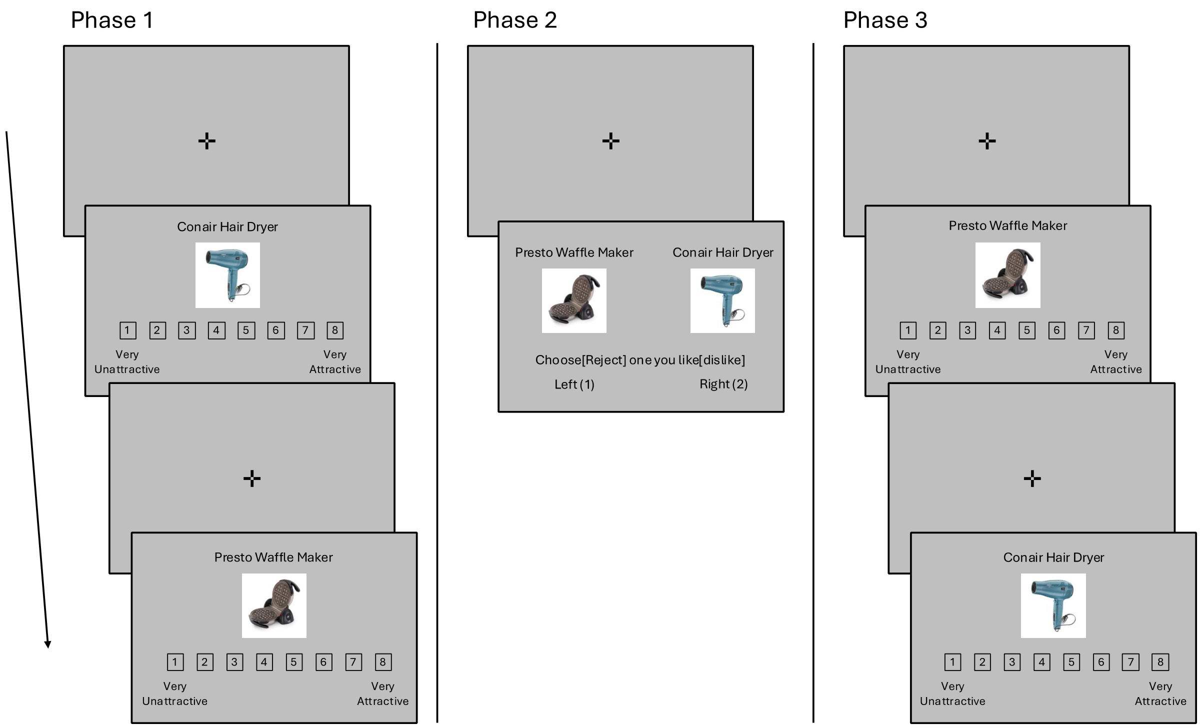

FIGURE 6 | Example trials in Study 3. In Phase 1 (first rating), participants were asked to rate the attractiveness of 80 different items using an 8-point scale. In Phase 2 (decision phase), two items with the same or similar attractiveness ratings were paired and presented on the screen (40 trials). Participants were asked to choose one they liked (the *choose* condition) or reject one they disliked (the *reject* condition), while their eye movements were recorded. In Phase 3 (second rating), participants were asked to rate the attractiveness of the 80 items again using the same 8-point scale as in Phase 1.

were informed to be in the right position. For the analysis, we first isolated gaze duration on each of the presented items in Phase 2 (decision phase) and then divided these isolated gaze durations by the response time of each trial to normalize them. We excluded trials where response time was shorter than 250 ms or longer than 2 standard deviations from the mean based on log-transformed response time data for each participant (Smith and Krajbich 2019) or where participants did not fixate on both presented items in the analysis (about 14%—437 out of 3120 trials; Brus et al. 2021). Also, as we were interested in how the *choose* and *reject* decision modes influence subsequent preferential judgments, in the analysis, we focused on the trials in Phase 2 where the paired items had the same attractiveness ratings in Phase 1. Thus, we additionally excluded 230 decision trials in Phase 2 (about 7%), where the paired items had unequal attractiveness ratings.

5.2 | Results

5.2.1 | Rating Changes

We were primarily interested in the effect of decision modes on postdecision attractiveness rating changes. The postchoice rating changes were calculated by subtracting the first rating from the second rating, after demeaning the attractiveness ratings in each session separately at the individual subject level (Sharot, Fleming, et al. 2012). We then regressed these rating changes on decision mode (1 = *choose* vs. 0 = *reject*; between-subjects) interacted with item preference (1 = preferred [i.e., chosen or nonrejected] vs. 0 = nonpreferred [i.e., nonchosen or rejected] items; within-subjects) using a multilevel linear regression model with participant-level intercepts. To account for the dependency between items paired together in the decision phase, we introduced random intercepts for each subject and trial of the decision phase (Phase 2) in the model. Unexpectedly, there was a significant difference in the first attractiveness ratings between the two task mode conditions ($b = 0.34$, $SE = 0.17$, $z = 0.199$, $p = 0.046$), so we included the first attractiveness ratings as a covariate in the analysis.

The main effect of decision frame was not statistically significant ($b = -0.001$, $SE = 0.06$, $z = -0.01$, $p = 0.991$), but there was a significant main effect of item preference ($b = 0.66$, $SE = 0.04$, $z = 14.86$, $p < 0.001$) and a significant interaction between decision frame and item preference ($b = 0.18$, $SE = 0.07$, $z = 2.65$, $p = 0.008$). Participants showed increased attractiveness ratings for preferred items than nonpreferred items in both decision frames (joint Wald test for item preference: $\chi^2 = 504.16$, $p < 0.001$), but the rating changes were significantly greater in the *choose* frame than in the *reject* frame (joint Wald test for the interaction: $\chi^2 = 7.03$, $p = 0.008$; Figure 7). This pattern indicated that postdecision attractiveness rating divergence between preferred and nonpreferred items was smaller in the *reject* condition than in the *choose* condition. Further contrast results showed that there was a significant difference in attractiveness changes between the *choose* and *reject* frame conditions for the preferred items ($M_{reject} = -0.34$, $SD = 0.34$ vs. $M_{choose} = -0.40$, $SD = 0.22$; $\chi^2 = 9.45$, $p = 0.002$), whereas the difference in preference changes for the nonpreferred items was not significant

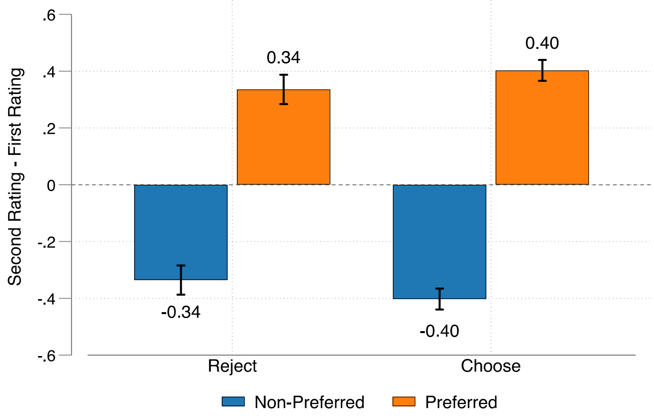

FIGURE 7 | Average rating change for the preferred and nonpreferred items depending on task mode. Rating scores were mean-centered for each participant and each phase. Error bars indicate standard errors.

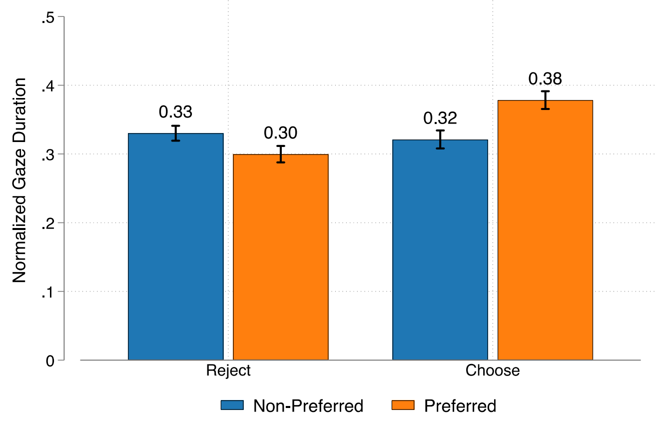

FIGURE 8 | Normalized gaze duration on the preferred (chosen or nonrejected) and nonpreferred (nonchosen or rejected) items in Phase 1. Error bars indicate standard errors from the mean.

between the two frame conditions ($M_{reject}=0.34$, $SD=0.34$ vs. $M_{choose}=0.40$, $SD=0.22$; $\chi^2=0.0001$, $p=0.991$).[2] The results indicated that postdecision preference changes for the preferred items were significantly higher after making *choose* decisions than after making *reject* decisions. However, the amount of preference changes was not significantly different for the rejected and nonchosen items. The main effect of the first attractiveness ratings was statistically significant ($b=-0.27$, $SE=0.01$, $z=-29.42$, $p<0.001$).

5.3 | Eye Tracking

5.3.1 | Gaze Duration

To test the effect of *choose* and *reject* modes on attention allocation, we regressed the normalized gaze durations on the presented items on decision mode (1 = *choose* vs. 0 = *reject*) interacted with whether the items were preferred or not (item preference: 1 = *preferred* [chosen or nonrejected] vs. 0 = *nonpreferred* [nonchosen or rejected]) using multilevel linear regression analysis. As with the attractiveness changes, we introduced each subject level and each decision trial level intercepts in the multilevel model with the first attractiveness as a covariate. There was no significant main effect of first attractiveness ratings ($b=-0.001$, $SE=0.001$, $z=-0.63$, $p=0.530$) and the main effect of task mode ($b=-0.01$, $SE=0.02$, $z=-0.41$, $p=0.682$), but there was a significant main effect of item preference ($b=-0.03$, $SE=0.01$, $z=-5.28$, $p<0.001$) and the interaction between decision mode and item preference ($b=0.08$, $SE=0.01$, $z=10.20$, $p<0.001$; Figure 8). Further contrast results showed that participants in the *choose* condition fixated on the preferred items significantly more than the nonpreferred items ($M_{preferred}=0.38$, $SD=0.08$ vs. $M_{nonpreferred}=0.32$, $SD=0.08$; $\chi^2=80.21$, $p<0.001$), but those in the *reject* condition fixated on the nonpreferred items significantly more than the preferred items ($M_{preferred}=0.30$, $SD=0.08$ vs. $M_{nonpreferred}=0.33$, $SD=0.07$; $\chi^2=27.89$, $p<0.001$), which supports the idea that participants focus more on the items that were task compatible. We also contrasted the normalized gaze duration on preferred items between the two mode conditions and found that the *choose* condition fixated more on the preferred items than the *reject* mode condition ($M_{reject}=0.30$, $SD=0.08$ vs. $M_{choose}=0.38$, $SD=0.08$; $\chi^2=25.01$, $p<0.001$). However, there was no significant difference in the normalized gaze duration on the nonpreferred items between the two conditions ($M_{reject}=0.33$, $SD=0.07$ vs. $M_{choose}=0.32$, $SD=0.08$; $\chi^2=0.17$, $p=0.682$).

5.3.2 | Gaze Bias

We also tested whether the gaze bias toward the task-compatible items was significantly different between the two task modes (Mitsuda and Glaholt 2014; Schotter et al. 2010). To test this, we regressed standardized gaze durations on item selection (task-compatible vs. task-incompatible), interacted with decision mode using a multilevel linear regression analysis with subject-level and trial-level at the decision phase intercepts. Consistent with previous studies (Mitsuda and Glaholt 2014; Schotter et al. 2010), the results showed that the interaction between decision mode and item selection was significant ($b=0.03$, $SE=0.01$, $z=3.16$, $p=0.002$), indicating that the gaze bias was significantly smaller in the *reject* condition than in the *choose* condition.

5.4 | Discussion

Study 3 tested the effect of *choose* versus *reject* task modes on subsequent preferences when items were evaluated individually using a choice-induced preference paradigm. The findings show that both the *choose* and *reject* task modes significantly increased preferences for the preferred items. However, the amount of increase was significantly greater after making *choose* decisions than making *reject* decisions, which was consistent with the results in Studies 1 and 2. On the other hand, both task modes significantly decreased preferences for the nonpreferred items, but unlike the preferred items, there was no significant difference in the amount of preference decrease between the two task modes, which is also consistent with the findings in Study 2. The results provide further evidence for the asymmetric effect of *choose* and *reject* task modes on subsequent preferences for individual items, excluding the potential impact of paired items and controlling for the preexisting preferences.

To gain insights into the potential mechanisms underlying the asymmetric effect of *choose* versus *reject* task modes on subsequent preferences, we investigated the role of attention using eye tracking. The results showed that participants in the *choose* condition fixated more on the preferred items than the nonpreferred items, while those in the *reject* condition showed the opposite pattern. This indicated that people focus more on the items that are task-compatible in both task modes, consistent with previous studies (Mitsuda and Glaholt 2014; Schotter et al. 2010). However, the gaze bias toward task-compatible items was significantly smaller in the *reject* condition than in the *choose* condition, suggesting that the *reject* mode may involve less selective attention compared with the *choose* mode.[3]

6 | General Discussion

People can make preference decisions either by simply choosing the most attractive one among a set of alternatives or by rejecting unattractive alternatives until they have the final one (Shafir 1993; Tversky 1972). Although previous research has shown that these two decision modes (choose vs. reject) can lead to systematic preference reversals (Nagpal and Krishnamurthy 2008; Shafir 1993; Sokolova and Krishna 2016), it remains unclear whether the effects of these two different decision modes hold only for the current decision or whether they have sustained downstream effects by systematically altering the preferences for the preferred alternatives in the future. In this study, we investigated the differential effects of the two decision modes on subsequent preferences for the preferred alternatives and the underlying cognitive mechanisms.

The results of Studies 1 and 2 showed that actively choosing a more preferred alternative increased subsequent preferences for the preferred items, while actively rejecting less attractive alternatives neither increased nor decreased subsequent preferences for the preferred items compared with the chance level in preferential choice tasks. Moreover, when the preferred items from the two decision modes were directly paired, participants showed significantly higher preferences for the preferred items resulting from the *choose* mode than those from the *reject* mode. These findings suggested that the *reject* mode did not induce as strong postdecision preference changes as the *choose* mode did.

The results of Study 3 further showed the asymmetric effect of the two decision modes on subsequent preferences in a preferential judgment task where alternatives were evaluated individually. The *choose* mode led to increased preferences for preferred alternatives and decreased preferences for nonpreferred alternatives, replicating the key findings of the choice-induced preference literature (Izuma et al. 2010; Izuma and Murayama 2013; Sharot, Velasquez, et al. 2010; Voigt, Murawski, Speer, et al. 2019). Notably, this study examined the effect of the *reject* mode on subsequent preferential judgments, which showed a similar pattern. However, the magnitude of the spread in preferential judgments between preferred and nonpreferred alternatives was significantly greater in the *choose* mode compared with that in the *reject* mode. The results indicated that the effect of *choose* mode on subsequent preferences was significantly greater than that of the *reject* mode.

Our study also made important theoretical contributions in elucidating the mechanisms underlying the asymmetric effect of *choose* and *reject* decision modes on subsequent preferences. The eye-tracking results showed that participants fixated more on task-compatible items than on incompatible items in both decision modes, consistent with the compatibility explanation (Shafir 1993). However, gaze bias was greater in the *choose* mode than in the *reject* mode, suggesting that people process task-compatible information or decision alternatives more selectively when making choose decisions than when making reject decisions. This pattern was also consistent with the preference changes observed in Study 3, where participants showed significantly higher subsequent preferences for the preferred alternatives from the *choose* mode than those from the *reject* mode, while there was no significant difference in subsequent preferences for nonpreferred alternatives between the two decision modes. The gaze allocation results mirrored the preference changes, suggesting a potential link between gaze allocation and subsequent preferences.

Our results also provided valuable insights into other explanations and proposed mechanisms for *choose* versus *reject* preference reversals. Although the previous explanations had not explicitly predicted the impacts of task frames on subsequent preferences, we could infer potential directions from them. The commitment hypothesis (Ganzach 1995) posits that individuals exhibit greater commitment in a *choose* frame than in a *reject* frame. With higher commitment in a *choose* frame than in a *reject* frame, people conducted more deliberative processes with a choose frame (more compensatory processes), resulting in increased processing of both positive and negative aspects. However, the negative aspects of the given alternatives were weighed more than the positive aspects. Accordingly, this model would predict lower subsequent preferences for items from the *choose* mode than in the *reject* mode for both preferred and nonpreferred items due to the heightened weights of negative features. Similarly, the accentuation model, which is based on the principle that value makes people to accentuate perceived differences (Tajfel 1957) explains that dominant features are more accentuated in a *choose* frame due to the higher commitment, predicting that the preferences for preferred alternatives would be higher, and for nonpreferred alternatives lower, after *choose* decisions compared with *reject* decisions (Wedell 1997). According to these explanations, the greater commitment and compensatory information processes in the *choose* mode might induce less selective processes between preferred and nonpreferred alternatives compared with in the *reject* mode, predicting a smaller difference in gaze allocations between preferred and nonpreferred alternatives in the *choose* mode than in the *reject* mode.

The deliberation model (Sokolova and Krishna 2016), on the other hand, argues for more deliberate decision making in the *reject* mode than in the *choose* mode, resulting often in smaller decision biases and irrational choices. As greater deliberation and effort to justify decisions can result in greater postchoice preference changes (Lee and Daunizeau 2020), this model predicts that preferences for the preferred items should be greater, and for nonpreferred, it is lower in the *reject* mode than in the *choose* mode. Similarly, the greater deliberation in the *reject* mode may predict a smaller difference in the gaze allocations between preferred and nonpreferred alternatives than those in the *choose* mode.

However, our eye-tracking results showed that participants fixated more on task-compatible items than on incompatible items in both decision modes, consistent with the compatibility explanation (Mitsuda and Glaholt 2014; Shafir 1993). The compatibility explanation does not explain whether the amount of selective processing of task-compatible alternatives will be the same or different between the two decision modes. However, our results that the gaze bias was greater in the *choose* mode than in the *reject* mode suggested greater processing of task-compatible information or decision alternatives when making choose decisions than when making reject decisions. Thus, these findings aligned more closely with the compatibility explanation than with any of the other explanations explained earlier, as they demonstrated that the *choose* mode led to more selective processing of preferred alternatives compared with the *reject* mode, which in turn drove the asymmetric effects on subsequent preferences.

There might be several alternative explanations for our findings on the asymmetric preference changes. One may come from the literature on the affective influences of selective attention, which documented that while preference affects attention allocation, attention also can affect affective responses (Fenske and Raymond 2006). For example, Raymond et al. (2003) tested whether attention allocation could affect preferences for the alternatives by asking participants to identify an alternative that included a specific pattern in a binary choice task. Their results showed decreased preferences for nonchosen alternatives (those receiving lower attention) compared with both chosen alternatives (those receiving higher attention) and new alternatives, with no difference between the chosen and new alternatives. This devaluation of nonchosen alternatives has been explained by inhibitory processes. When allocating attention toward the chosen alternatives, the nonchosen alternatives are actively inhibited. When the nonchosen alternative is presented again for evaluations, the inhibition is reactivated, resulting in decreased preferences. This mechanism may explain why participants in our Study 3 showed decreased preferences for the nonchosen alternatives. However, it cannot fully explain the increased preferences we observed for the chosen alternatives. Furthermore, this inhibition-based explanation would predict decreased preference for the nonrejected alternatives due to inhibition during the decision processes, which we did not observe. Therefore, while the inhibitory-devaluation mechanism may partially contribute to our findings, it does not seem to provide a complete explanation.

Another alternative explanation might come from the literature on the role of autonomous sampling in evaluative learning. A recent study by Hütter et al. (2022) found that when people can freely choose which items to look at, they tend to sample items associated with positive valence more and develop stronger preferences for items they view more frequently. This could explain why in the *choose* condition of our study, participants preferred the items they chose, as they voluntarily and selectively processed the chosen alternatives more during the decision processes. However, Hütter et al. (2022) also found that even preferences for alternatives associated with negative valence linearly increased when sampled more often. Based on this finding, we would expect participants in our study to show increased preferences for the rejected alternatives because they were processed (sampled) more than the nonrejected alternatives, but we did not observe this. Thus, although the evaluative conditioning through autonomous sampling may partially explain our findings, especially the increased preferences for the chosen alternatives in the *choose* mode, it does not fully account for what happened with the rejected alternatives in the *reject* mode.

6.1 | Managerial Implications

We believe that our study also has important managerial implications. Our findings emphasize the advantages of proposing alternatives as a choice versus elimination. This is the first study to show that the benefits of this frame extend beyond the current decision. Specifically, we demonstrate that the effect of choosing extends beyond the current decision to preferences involving the same item in the future. We contend that these findings will also extend to satisfaction with the purchased items and brand loyalty. For example, if a customer selects an item by choosing from a list of alternatives, they are more likely to be satisfied with that item subsequently, compared with if they had made that decision by eliminating alternatives they disliked. Similarly, consumers are more likely to be loyal to a brand and make repeat purchases when they make decisions by choosing as opposed to rejecting.

Our findings may also have important implications for other real-world decisions in the domain of human resources, healthcare decisions, and public policy. For example, managers often tend to use these different modes when making several organizational decisions, such as hiring new employees and choosing team leaders. Based on our findings, these decision modes can have an asymmetric impact on subsequent evaluations involving the chosen individuals. For instance, managers may be more likely to be biased and satisfied with the performance of an employee who has been actively chosen versus one who was passively selected through the rejection of other candidates. Thus, organizations should carefully consider the decision modes they employ and inform managers about how these modes can bias subsequent performance evaluations, enabling them to make more informed decisions. Likewise, in making critical decisions about treatment options, healthcare providers may be able to improve patient satisfaction and treatment adherence by encouraging patients to choose their preferred option rather than reject undesired ones. Similarly, policymakers can frame public policy decisions in a way that emphasizes the benefits of choosing a particular course of action rather than focusing on the drawbacks of rejecting alternatives, potentially leading to greater public support and engagement.

6.2 | Limitations

The current study has several limitations. First, we did not differentiate the effect of different types of market goods. Previous studies have shown that people process hedonic and utilitarian aspects differently in the *choose* and *reject* decision modes (Dhar and Wertenbroch 2000; Laran and Wilcox 2011; Nagpal et al. 2015). For example, Dhar and Wertenbroch (2000) showed that people seek more hedonic aspects of items in the *reject* mode than in the *choose* mode. Thus, it is possible that people employ different strategies in purchasing utilitarian products and hedonic products. One might seek maximum utility in purchasing hedonic goods while one might seek a simple or adequate item in purchasing utilitarian goods. Future research may be needed to investigate how the decision mode, goals, and types of items interact and affect subsequent preferences.

Second, we focused on a binary choice task across all studies because it allowed us to clearly specify preferred and nonpreferred alternatives in the *choose* and *reject* modes. However, in many real consumer choice settings, there are more than two available alternatives in the choice context, and it was not clear whether the effect of *choose* versus *reject* mode on the considered items could be different in multi-item choice decision contexts. Yaniv and Schul (1997, 2000) showed that people form larger choice sets in exclusion (reject mode) than in inclusion (choose mode), because people remain in the status quo unless they find sufficient evidence to include or exclude an option. Thus, in a multi-item decision task, not only might the decision modes affect subsequent preferences, but the order of consideration and the relative dominance relationships among alternatives could moderate these effects. Future research may be needed to investigate the effect of choose versus reject decision mode on nondominant or nondominated items, as well as the most and least preferred items.

Lastly, we manipulated the decision modes without considering an individual's preexisting preferences in decision strategy. People may have a default, predominant, or preferred decision mode that they employ in their decisions. The compatibility between their default decision mode and the required task mode could therefore play an important role in our findings. For example, those who use the *choose* mode as default may be less familiar with the *reject* mode, potentially causing them to be more conscious and careful in making reject decisions. Research suggests that the *choose* mode might serve as a natural default mode for the majority of people (Ganzach 1995), which could explain our observed gaze allocation patterns and subsequent preference changes. Future research should examine how an individual's default decision mode might interact with experimentally imposed task modes using significantly larger sample sizes with preregistration.

6.3 | Conclusions

In conclusion, our study provides novel insights into the asymmetric effects of *choose* and *reject* decision modes on subsequent preferences for preferred alternatives. Across three studies, we consistently demonstrated that the *choose* mode led to stronger postdecision preference changes than the *reject* mode, both in preferential choice and judgment tasks. Furthermore, our eye-tracking results showed that the *choose* mode induced more selective processing of preferred alternatives compared with the *reject* mode, which in turn drove the asymmetric effects on subsequent preferences. These findings contribute to the growing literature on decision making and preference formation, especially on the *choose* versus *reject* preference reversal and choice-induced preference, by highlighting the importance of downstream effects associated with different decision modes.

Data Availability Statement

The data that support the findings of this study and the stimuli are openly available in OSF at https://osf.io/4nqws/.

Endnotes

[1] Choice-induced preference studies often use the terms chosen (or selected) versus rejected to indicate more preferred and less preferred alternatives in a binary choice task (i.e., a *choose* frame task), but the "rejected" label often indicates "nonchosen or nonselected," not actively rejected from a reject frame task.

[2] The average estimated marginal mean score changes are as follows: Non-preferred items: $M_{reject} = -0.37$, $SE = 0.04$ versus $M_{choose} = -0.37$, $SE = 0.04$; preferred items: $M_{reject} = 0.29$, $SE = 0.04$ versus $M_{choose} = 0.47$, $SE = 0.04$. Also, see the marginal mean plot in Appendix S2.

[3] We also conducted a mediation analysis and found that the effect of the decision modes on subsequent preferences for the preferred alternatives was mediated by the gaze duration. Please see the full mediation analysis results in Appendix S3.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.