The Rejection Survivor Advantage:
Why Rejecting Options Increases Commitment after Option Evaluation

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ABSTRACT

Most options considered by consumers are ultimately rejected or not chosen, yet not all rejections are created equal. This research examines the impact of “explicit” rejection (i.e., decision to tentatively “reject” an option) vs. “implicit” rejection (i.e., decision to continue looking for better options) on perceptions of the “rejection survivors” and the likelihood of making a purchase. Specifically, the authors propose that compared to implicit rejections, explicit rejections increase psychological closure with respect to the rejected options, thereby increasing the perceived attractiveness of and subsequent commitment to the rejection survivors. Eight studies test (a) the predicted differences between explicit and implicit rejection, (b) the mechanism underlying these predictions, and (c) the behavioral consequences of the rejection survivor advantage (e.g., purchase, reconsideration of forgone options, expectations about future options, stopping points). The authors employ a range of methods, including real-world data from a “swiping” mobile app for pet adoption. The implications of alternative rejection modes for consumer decision-making in the current information environment are discussed.

*Keywords:* option rejection, explicit vs. implicit rejection, choice commitment, online search, framing effects
As the number of options available to consumers when shopping online increases, the frequency and role of option rejections have correspondingly become more prominent: With more available options, more options must be rejected before making a purchase. Prior research has examined the characteristics of the consideration set that affect the likelihood of making a purchase, such as asymmetric dominance (e.g., Dhar 1997). However, we still know very little about how the manner in which consumers evaluate their options—specifically, how they reject their options—can affect their likelihood of making a purchase after evaluation.

In this research, we examine the different ways consumers reject their options and how these rejection modes can influence their perceptions of the options that survive from rejection. In doing so, we distinguish between “explicit” and “implicit” rejections and propose that options that survive explicit rejections are associated with greater evaluation closure, which results in a higher likelihood of making a final selection (i.e., making a commitment to an option). Explicit rejections refer to decisions that directly indicate that a given option will no longer be considered (e.g., “reject”); Implicit rejections involve decisions that leave the decision of whether to reject the option as undecided (e.g., “look for more options”) but leads to the same result whereby the given option is unlikely to be further considered. We propose that when evaluating options to decide which option to select, how the consumer rejects each option can determine whether the consumer perceives his evaluation as complete and sufficient for making a final selection.

As discussed in more detail below, prior research has examined the difference between choosing and rejecting options through the lens of which options tend to be preferred in each mode (Laran and Wilcox 2011; Shafir 1993) and the psychological processes triggered by each evaluation mode (Goodman and Reczek 2021; Levin, Jasper, and Forbes 1998; Sokolova and Krishna 2016). However, the impact of evaluation mode on the key decision as to whether to
make a final selection (i.e., commitment, purchase) has received little attention. In this research, we test the effect of rejections by observing real consumer behavior (i.e., pet adoption) in the field and by conducting controlled experiments that test the behavioral predictions and the proposed mechanism. Critically, we find that rejections, and explicit (vs. implicit) rejections in particular, promote evaluation closure over the consideration set and enhance the likelihood of making a final selection from the set.

Next, we review the extant literature on rejection as well as prior work regarding psychological closure (e.g., Albert 1983; Gu, Botti, and Faro 2013, 2018). We then present our analysis of how rejecting options in the evaluation process affects consumers’ likelihood of making the key decision regarding the evaluated option—that is, whether to finally select an option from the “rejection survivors.” Our hypotheses are tested in eight studies, which include data observed in the field as well as from online experiments employing new evaluation interfaces such as the “swiping” feature. This interface will be further explained in the studies.

**STRENGTH OF REJECTION AND THE SURVIVOR ADVANTAGE**

Most of extant research on consumer decision-making has largely focused on how people choose; in reality, consumers reject options in many different ways. In some cases, consumers may quickly reject an option because they judge it to be highly unattractive. Notably, this type of rejection has become increasingly common and easy with the help of new interfaces that employ “swiping” features. For example, consumers can “swipe left” or click on a large red ‘X’ to explicitly indicate their option rejection. In other cases, an option may be implicitly rejected (e.g., “I want to see more options”) and is simply not considered, leaving the decision of whether
to reject the option as “TBD.” For example, a consumer shopping for a painting can make an implicit rejection and simply continue searching for the next painting if he deems the current painting dissatisfying. Although the two types of rejection result in the same outcome—i.e., the current option is not chosen or added to the choice set—we suggest that the explicit rejection is a more absolute form of rejection because it involves a direct negation of the evaluated option.

Thus, given the range of and potential psychological implications of alternative rejection modes, we focus on the effect of such rejections during option evaluation on the final decision/commitment. The explicitness of the rejection can also be seen as reflecting the strength of rejection, with explicit rejections being stronger. Notably, such distinction of rejection strength has not been studied in the literature, and researchers have used different rejection frames (e.g., “do not choose”, “continue to search for options”, “look for more information on a website and decide later”) interchangeably under the misguided assumption that all rejections are created equal; see Appendix for a review of extant studies.

REACHING CLOSURE THROUGH REJECTION

The act of rejecting an option is often followed by the temporary (or, in some cases, permanent) disappearance or unavailability of the rejected option. For example, when selecting the top applicants for a job, interviewers can decide which applicants are “out of the running” and remove them from the final candidate list (Huber, Neale, and Northcraft 1987). Prior research in cognitive psychology has shown that such psychological unavailability of an object can create a sense of closure, which acts to solidify the perceived finality of a decision. (Albert 1983; Beike and Wirth-Beaumont 2005; Skitka, Bauman, and Mullen 2004). For example,
writing down a negative experience on a piece of paper and rendering it unavailable by sealing the paper into an envelope can help people achieve psychological closure over emotional experiences (Li, Wei, and Soman 2010). Similarly, in the consumer context, signaling behaviors of unavailability, such as closing the lid over a box of chocolates or closing the menu after selecting a meal, have been known to induce a feeling that the decision is final (Gu, Botti, and Faro 2013). In fact, consuming a single-serve packaged food has shown to generate a sense of closure on the food because the unavailability of each food item becomes more salient in single-serve packaging than multi-serve packaging (Ilyuk and Block 2016). Of note, all of these closure cues involve actual or symbolic encapsulation of the object, thereby rendering the object psychologically unavailable to the individual. Building on this logic, we propose that explicitly rejecting each option during the initial evaluation phase—compared to not rejecting—is associated with a greater sense of closure over the evaluated options and can subsequently change the perception of the rejection survivors, even though the rejections are easily reversible.

We also argue that this rejection effect stems from explicit rejection, rather than from seemingly comparable decisions during the evaluation, such as deciding to not add an option and proceeding to look for other options (i.e., implicit rejection) because the latter does not generate the same level of closure as explicitly rejecting an option. This is because how consumers reject an option matters as much as, if not more than, whether they reject it and has consequences with respect to evaluation closure and satisfaction. Explicitly rejecting a considered option is likely to involve greater action and decision than forms of implicit rejection such as looking for other options or merely deciding to not add it to the shopping cart (see Amir and Ariely 2004). Thus, explicit rejection is associated with greater closure and the sense that the option is at least temporarily “lost” (Tversky and Kahneman 1989; 1991). By contrast, implicit rejection, such as
not adding an option to the cart or looking for other options, is less likely to feel like a loss or a
“closed case,” even though the decision has the same consequences as explicit rejection. As we
later show in our studies, the sense of closure is associated with the task frame rather than any
misunderstanding regarding rejection, such as the belief that rejections are physically irreversible
or that the rejected options are no longer available.

AN IMPLICATION OF REJECTION MODE: COMMITMENT AFTER THE
EVALUATION

As indicated, previous studies have examined the topic of option rejection, especially in
the context of the contrast between choice versus rejection in binary choices (Dhar and
Wertenbroch 2000; Goodman and Reczek 2021; Laran and Wilcox 2011; Levin, Jasper, and
Forbes 1998; Shafir 1993; Sokolova and Krishna 2016). Prior research, however, has yet to
investigate the impact of evaluation mode on behavioral outcomes and the underlying processes.
For example, can the different ways consumers reject their options lead to systematic differences
in whether they decide to purchase from the options that survive, arguably the most important
consumer decision?

Building on prior work and our analysis of alternative ways to reject, we expect that
framing the evaluation mode as a decision whether to explicitly reject options generates greater
closure with respect to the rejected options (compared to no rejections or implicit rejections). As
prior literature suggests, when individuals perceive their decision as final, they are more “at
ease” and report greater satisfaction with their decision (Gu, Botti, and Faro 2013, 2018), which
may reflect a sense of relief and closure. Therefore, if individuals perceive explicit rejections to
incur more closure compared to implicit rejections, they should expect to also feel greater satisfaction with the non-rejected options. Thus, we posit that if evaluating options through explicit vs. implicit rejection modes elicits greater psychological closure over the evaluated options, then the non-rejected options that survive explicit rejection would be more likely to be seen as attractive compared to the survivors from implicit rejection. This, in turn, leads to the more general prediction that compared to evaluation modes associated with less closure, thinking in terms of explicit rejection will enhance the satisfaction with the surviving options and the likelihood that one of the rejection survivors will be purchased. More formally, we hypothesize:

**H1:** Making explicit (vs. implicit) rejection of options during sequential option evaluation leads to greater commitment to the surviving options.

After examining the alternative rejection modes with respect to the strength of rejection (e.g., explicit vs. implicit) and their impact on ultimate purchase likelihood and other behavioral outcomes, we examine the role of closure in the rejection survivor advantage. We predict:

**H2:** The survivors of explicit (vs. implicit) rejection are perceived as more attractive because the former generates a greater sense of evaluation closure.

Finally, we further examine other downstream consequences of evaluation closure that emerge before making a commitment such as the likelihood of reconsidering forgone options, expectation regarding future options, and stopping point (i.e., number of evaluated options) in the search. As prior literature suggests, after achieving a sense of closure, individuals
subsequently limit the comparisons between their options and stop considering additional information (Kruglanski and Webster 1991). Therefore, we predict that, as a result of closure over the evaluated options and satisfaction with the surviving options, explicit (vs. implicit) rejection will improve the overall search experience that ultimately boosts commitment:

**H3:** The greater closure from *explicit* (vs. *implicit*) rejection is further manifested in less reconsideration of past options, less expectation for future options, and earlier stopping in search.

**RESEARCH OVERVIEW**

In the next section, we describe and present the results of eight studies designed to test these predictions; see table 1 for an overview. Study 1 tests the basic hypothesis that individuals who identify their preferred options through explicit rejections will be more likely to show commitment to their “rejection survivors” than those who evaluated through implicit rejections (H1). We then examine the underlying mechanism and, in particular, the role of closure (H2) by measuring closure over the evaluation (study 2A) and satisfaction with the surviving options (study 2B) and by manipulating evaluation closure (study 3). In studies 3–4, we test rival accounts regarding the observed difference between explicit rejections and implicit rejections (i.e., explicit rejection signaling more physical action or physical irreversibility). Studies 4–6 further examine the impact of rejection strength on satisfaction with already evaluated options, expectations regarding potential additional options, and the number of evaluated options before purchasing; the findings indicate that explicit rejections lead to a higher likelihood of purchasing
one of the rejection survivors (studies 4–6), a lower likelihood of reconsidering forgone options (study 4), lower expectations regarding future options (study 5), and an earlier stopping point (study 6). Finally, we examine the effect of actual search and commitment behavior using field data obtained through a mobile app, in which users can evaluate a series of available options to decide which pet to adopt. We test whether making a greater number of explicit rejection of pets can increase commitment rate (i.e., likelihood of calling the adoption center). Importantly, across all studies, we demonstrate that our effects persist when controlling for the number of evaluated options and the number of surviving options (e.g., options added to the shopping cart) whenever applicable. Data files are stored at https://osf.io/emd7w/files/

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STUDY 1: DECIDING WHICH PET TO ADOPT

Study 1 tested our first hypothesis that having to explicitly (vs. implicitly) reject options while sequentially evaluating options can increase commitment to the surviving options. To this end, we asked participants to evaluate profiles of dogs that were ostensibly available for adoption in the area. The way in which participants could evaluate their dog options was manipulated across two conditions as whether they were required to “swipe left” and explicitly forego the given option or not; in the absence of explicit rejection, participants could proceed to the next option without having to swipe left. After completing their evaluation, participants indicated their likelihood of adopting one of the dogs that survived their evaluation, a measure that was used to gauge the level of commitment after option evaluation. This study was preregistered on osf (https://osf.io/8eykx).

Method

A total of 193 undergraduate students from a West Coast college completed the online survey in exchange for a partial course credit. Participants were informed that researchers were developing an online website that helps potential dog owners connect with rescued dogs in the neighboring animal shelters. Participants first indicated whether they had pets and how interested they are in adopting a dog in the near future on a five-point Likert scale (1 = Definitely will not, 5 = Definitely will). Next, the instructions told them that they would review profiles of available dogs, one at a time and asked for their postal code, ostensibly to retrieve the list of available dogs in their area. While the website was loading a list of available pets in their area—when in fact, it
was the same set of dog profiles for everyone—participants were randomly assigned to the reject-only condition or the add-only condition.

In the reject-only condition, participants had to explicitly reject each profile by swiping left (moving the slider in the middle all the way to the left), or “opting out,” before moving on to the next option; any non-rejected paintings were automatically saved to their list, see figure 1. In the add-only condition, however, participants were told to swipe right (move the slider in the middle all the way to the right) to add a dog profile to their list and to not add if they did not wish to save the dog profile. After evaluating each profile, all participants had to click the “next” button to see the next dog profile: This feature allowed those in the add-only condition to
implicitly reject options by proceeding to the next option by clicking the next button without an 
explicit rejection of the current option. After these instructions, we added a comprehension check 
question to ensure that the participants understood the swiping task; all participants passed the 
comprehension check within two attempts. Then, participants started evaluating the available 
dogs by either adding only or rejecting only, and when they finished swiping through all 20 dog 
profiles, they reported their intentions to adopt a dog from the list of surviving dog profiles 
(“How likely would you be to adopt one of the dogs that you have saved to your list?” 0 = Not at 
all likely, 100 = Very likely).

Results

Number of surviving options. First, although not the focus of our theorizing, the number 
of dogs saved to the list differed across conditions; Participants in the reject-only condition (M = 
10.41, SD = 5.67) added more dogs to their list than those in the add-only condition (M = 5.84, 
SD = 6.99), t(191) = 5.06, p < .001, d = .73. This is consistent with prior research showing that 
elimination-based evaluation modes (e.g., reject-only) are likely to produce larger choice sets 
than selection-based modes (e.g., add-only) largely because decisions to reject (vs. choose) 
options can trigger greater consideration of losses and loss aversion toward forgone options, see 
Huber, Neale, and Northcraft 1987; Levin, Jasper, and Forbes 1998. Given how the number of 
surviving options in the choice set can impact choice commitment (Diehl and Poynor 2010; 
Iyengar and Lepper 2000), we tested our hypotheses while controlling for the number of 
surviving options in the current study and all of the studies that follow.

Commitment. More germane to the study and consistent with our prediction, a linear 
regression with the evaluation mode as the independent variable (1 = reject-only, 0 = add-only)
and adoption interest as the dependent variable showed that participants who explicitly rejected dog options \( (M_{\text{reject-only}} = 48.88, SD = 35.21) \) reported greater intentions to adopt compared to those who did not \( (M_{\text{add-only}} = 41.48, SD = 32.05) \), but only directionally consistent with our prediction, \( B = 7.39, SE = 4.85, t(191) = 1.52, p = .129 \). Importantly, we ran separate a linear regression to test that this effect was not driven solely by the individual differences in adoption interests measured prior to the task or the number of surviving options after the evaluation:

Explicit rejections significantly increased adoption intentions \( (B = 11.32, SE = 4.67, t(189) = 2.43, p = .016) \) after controlling for the interest in adopting a pet in the future \( (B = 10.58, SE = 1.88, t(189) = 5.63, p < .001) \) and the number of surviving pets after the evaluation \( (B = .84, SE = .36, t(189) = 2.36, p = .019) \).

Discussion

The findings of study 1 showed that, compared to implicit rejection (e.g., not add), explicit rejection (e.g., swipe left and reject) in deciding which pet to adopt increases the interest in whether to adopt a pet. Furthermore, this effect is robust when controlling for the individual’s prior interest in adoption. On remaining question from this study is whether it is the presence of adding (swipe right) or rejecting (swipe add) that contributed to the difference across add-only and reject-only. To test the directionality of our effect, we conducted studies 2A and 2B as follow-up replications of study 1 with another condition: the add-or-reject condition. In addition, we measured closure (study 2A) and satisfaction (study 2B) after evaluation to uncover the driving role of psychological closure in the rejection survivor effect.
STUDIES 2A–2B: REJECTION AND CLOSURE OVER THE OPTIONS

In studies 2A–2B, we extended the prior tests and began the examination of the underlying process. In particular, we tested H2: whether evaluating options with explicit rejection during a sequential evaluation process would increase the psychological closure over the evaluated options (study 2A), which in turn boosts satisfaction with the surviving options (study 2B). As in study 1, all participants evaluated the same set of available product options. However, we varied the ways in which participants could save each option to their choice set across three modes (add-or-reject, reject-only, or add-only). Consistent with the above analysis and the hypotheses, we expected that those who had the ability to explicitly reject a given option in the add-or-reject mode and the reject-only mode (i.e., swipe left enabled) would be more likely to feel closure over the evaluated options and be satisfied with the surviving options than those who were not able to explicitly reject the option in the add-only mode (i.e., swipe left disenabled).

Method

Study 2A. Six hundred and two participants (M_age = 37.3, 44.4% female) were recruited from Amazon Mechanical Turk to take part in a consumer preference survey. Participants were randomly assigned to one of three conditions (add-or-reject, reject-only, or add-only), which differed in whether participants could make explicit or implicit option rejections. All participants were told that they would review 10 wall paintings, one at a time, and could add a few paintings that they liked to their cart, where they would ultimately decide which painting they would
purchase. We then varied how participants used the swiping motion to add (swipe right) or reject (swipe left) each painting to the cart, see figure 2.

FIGURE 2
OPTION EVALUATION MODES (STUDY 2A–2B)

The new condition, the *add-or-reject* condition, prompted participants to swipe both directions; participants had to swipe right (i.e., move the slider in the middle all the way to the right) to add the painting to cart or swipe left (i.e., move the slider in the middle all the way to the left) to reject. As in study 1, participants in the *reject-only* condition could only swipe left to reject or opt out of the paintings, and any non-rejected paintings were automatically added to their cart. In the *add-only* condition, participants were instructed to swipe right to add a painting to their cart and proceed to the next painting to not add the current painting; any non-added paintings were not added to the cart. After thus indicating their decision to add or reject each painting, all participants clicked the “next” button to advance to the next available painting. In other words, the *add-or-reject* condition and the *reject-only* condition asked participants to make explicit rejections (swipe left) before moving on to the next option, whereas the *add-only*
condition allowed participants to make implicit rejections by simply not adding and moving on to the next option.

After reviewing all of the 10 available paintings in the swiping task, all participants answered how much closure they felt after evaluating their options (i.e., “After making a decision on whether to add or reject a painting, you moved on to the next option. To what extent do you perceive your decisions as ‘unfinished business’?”; $1 = \text{Not at all}, 7 = \text{Very much}$; adapted from Gu, Botti, and Faro 2013; reverse-coded). Finally, they viewed their shopping cart, which included the paintings they had previously added (or those that survived the rejection) and answered which painting they would buy (“Assuming that the price is reasonable, which painting would you buy?”). Participants could either select a painting from the surviving options or the deferral option (“I would not buy any of these paintings”).

**Study 2B.** We recruited 605 participants from Amazon Mechanical Turk to participate in a consumer preference study. The procedure for study 2B was identical to study 2A except for two changes. First, we added a comprehension check question to ensure that our participants understood the swiping task. Ninety-four participants (15.5%) failed the comprehension and were excluded, resulting in 511 valid respondents ($M_{\text{age}} = 37.08$, 46% female). Second, after completing the swiping task (identical to the task in study 2A) to decide which paintings to add to cart, participants viewed the surviving painting options in their shopping cart and were asked, “How satisfied are you with the paintings in your shopping cart?” on a seven-point scale ($1 = \text{Not at all}, 7 = \text{Very much}$) instead of the closure item. Because participants had already reported their satisfaction with the surviving paintings, we did not further inquire about their purchase intentions in this study. Thus, participants were at the end to select which option they would buy.
from their shopping cart (“Assuming that the price is reasonable, which painting would you buy?”).

Results

Study 2A: Closure. As hypothesized in H2, a one-way between-subjects ANOVA on perceived closure found that evaluation mode significantly affected participants’ feeling of closure, $F(2, 599) = 6.43, p = .002, \eta^2 = .021$. Planned orthogonal contrast codes comparing the conditions that enabled explicit rejection ($1 = \text{add-or-reject}, 1 = \text{reject-only}$) with the condition that did not ($-2 = \text{add-only}$) further revealed that participants felt that their decisions for each painting were more like ‘finished business’ after making explicit rejections ($M_{\text{add-or-reject}} = 2.08, SD = 1.92; M_{\text{reject-only}} = 2.44, SD = 1.88$) than when making implicit rejections ($M_{\text{add-only}} = 1.78, SD = 1.7759$), $t(599) = 3.00, p = .003$; see the left graph of figure 3.

**FIGURE 3**

EXPLICIT REJECTION INCREASES CLOSURE OVER THE EVALUATION (LEFT, STUDY 2A) AND COMMITMENT AFTER THE EVALUATION (RIGHT, STUDY 2B)
We also examined the effect of explicit rejection on closure after controlling for the number of surviving options. To that end, we regressed closure on rejection mode (based on planned orthogonal contrast codes: 1 = add-or-reject, 1 = reject-only, −2 = add-only) and the number of paintings in the cart. Consistent with our prediction, we found that the evaluation modes that allowed explicit rejections (i.e., add-or-reject, reject-only) led to increased closure over the evaluation (\(B = .40, SE = .16, t(599) = 2.57, p = .010\)) even after controlling for the number of “rejection survivors” (\(B = .21, SE = .03, t(599) = 6.47, p < .001\)). We observed consistent results when dummy-coding or effect-coding the condition variable.

**Study 2A: Commitment.** Next, we ran a logistic regression with rejection mode (based on planned orthogonal contrast codes: 1 = add-or-reject, 1 = reject-only, −2 = add-only) as the independent variable and purchase likelihood as the dependent variable to test whether the commitment results replicated from the previous study: Participants who could explicitly reject their options during the evaluation process were more likely to purchase an item from their “rejection survivors” (\(M_{add-or-reject} = 64.1\%, M_{reject-only} = 56.9\%) compared to those who could not (\(M_{add-only} = 32\%; B = 1.18, SE = .18, \text{Wald’s } \chi^2(1) = 41.56, p < .001\)), see the right graph of figure 3. This effect of explicit rejection remained significant (\(B = 1.15, SE = .19, \text{Wald’s } \chi^2(1) = 38.77, p < .001\)) even after controlling for the number of surviving options (\(B = .14, SE = .04, \text{Wald’s } \chi^2(1) = 13.91, p < .001\)).

**Study 2A: Mediation.** In order to examine whether explicit rejection promotes commitment by increasing closure over the evaluation, we conducted a mediation analysis with bootstrapping in which we entered the evaluation mode (coded as 0 = add-or-reject, 1 = reject-only, −1 = add-only) as the independent variable, felt closure as the mediator, and purchase likelihood (1 = purchase, 0 = deferral) as the dependent variable (Hayes Model 4; Hayes 2013).
Consistent with our theorizing (H2), closure mediated the effect of rejection on purchase intentions (95% CI: [.0025, .0730]). The direct effect of evaluation mode on purchase likelihood remained significant when closure was included in the model ($B = .48, SE = .10, Z = 4.60, p < .001$). These results remained consistent when we contrast coded the evaluation mode based on planned orthogonal contrast codes used in our previous analyses (1 = add-or-reject, 1 = reject-only, −2 = add-only).

**Study 2B: Satisfaction.** Similarly, we analyzed whether explicit option rejection increased satisfaction with the “rejection survivors.” A one-way ANOVA indicated a significant effect of option evaluation mode on satisfaction with the options added to cart, $F(2, 601) = 3.87, p = .021, \eta^2 = .015$. Specifically, a planned contrast with contrast coding used in study 2A (1 = add-or-reject, 1 = reject-only, −2 = add-only) showed consistent results; the conditions in which participants explicitly rejected options led to greater satisfaction with the cart ($M_{add-or-reject} = 6.22, SD = .90; M_{reject-only} = 6.15, SD = .89$) compared to the condition in which participants could not explicitly reject options ($M_{add-only} = 5.94; SD = 1.14$), $t(508) = 2.67, p = .008$.

Next, we examined the effect of option evaluation mode on choice set satisfaction after controlling for the number of surviving options in the cart. To that end, we regressed cart satisfaction on condition (based on planned orthogonal contrast codes: 1 = add-or-reject, 1 = reject-only, −2 = add-only) and cart size. Consistent with our prediction, explicit rejections significantly increased satisfaction with the cart ($B = .13, SE = .06, t(508) = 2.34, p = .020$) even after controlling for the number of surviving options ($B = .005, SE = .02, t(508) = .31, p = .755$). We observed consistent results when dummy-coding or effect-coding the condition variable.

Thus, compared to participants who could not swipe left to reject paintings, those who swiped
left to explicitly reject the current painting before proceeding to the next painting found their surviving paintings as more attractive.

Discussion

Across two studies, we found that option evaluation mode during sequential option evaluation can influence the sense of psychological closure over the evaluated options. Study 2A demonstrated that explicitly rejecting less attractive options fosters the subjective feeling that one’s evaluation is final, as compared to implicitly rejecting the non-preferred options. This was qualified by a significant mediation result. Then, study 2B corroborated the role of closure by capturing increased satisfaction with the surviving options after making explicit (vs. implicit) rejections. This rejection survivor effect on closure and satisfaction with the survivors remained after controlling for the number of surviving options, suggesting that explicit rejection did not heighten commitment merely because more options survived after explicit rejection.

An alternative account: swipe left vs. no swipe. Because the add-or-reject condition required participants to swipe more frequently than the add-only condition, one may wonder whether the greater closure and satisfaction with the surviving options in the add-or-reject condition might have been caused by more physical action, namely swiping left before proceeding to the following option, which was absent in the add-only condition. Thus, study 3 tests this alternative action-focused account by examining the contrast between explicit rejection and implicit rejection while keeping the level of physical action/effort constant across the rejection modes. It also examines the mechanism by directly manipulating closure to further delineate the role of closure in the rejection survivor effect.
STUDY 3: INDUCING EVALUATION CLOSURE

The objectives of study 3 were threefold. First, as indicated, in order to address a possible alternative account based on action vs. inaction, we designed two conditions that equaled in the level of action/modality required to make rejections. Thus, we had an explicit rejection mode and an implicit rejection mode involving the same level of action but differed in how participants interpreted their decision. This design allowed us to directly test whether our effect is due to physical action (e.g., swipe left, click the red button) or the strength of rejection attached to the action (i.e., explicit rejection vs. implicit rejection). Second, we manipulated the level of closure felt during sequential evaluation to further investigate the role of closure in choice commitment (closure induced vs. control). Lastly, this study extended the explicit rejection effect using another sequential evaluation interface; study 3 employed a new feature commonly used on the web: a shopping cart interface using an “add to cart” feature. We preregistered this study on osf (https://osf.io/wnbv4).

Method

A total of 780 participants were recruited from CloudResearch to participate in an online shopping study. Participants were randomly assigned to one of four conditions, 2 (rejection mode: explicit vs. implicit) x 2 (closure: induced vs. control), and were asked to evaluate a set of jigsaw puzzle products and select which puzzle they would like to receive for free if they won the lottery. The following instructions for the lottery allowed participants to make incentive-compatible decisions during the task:

"On the following pages, you will evaluate jigsaw puzzle products that you can actually purchase with your bonus payment."
Next week, we will randomly select five participants who will each receive a $20 cash bonus next week. If you are selected as one of the five participants, you will receive the jigsaw puzzle of your final choice and the remaining balance of the $20 cash bonus. For example, if you choose to purchase a $15 puzzle, and if you are selected as one of the lottery winners, you will receive the $15 puzzle and the $5 cash bonus. Therefore, your choice of jigsaw puzzle at the end of the survey is consequential.”

Next, participants answered two comprehension check questions, which tested whether they had correctly understood the lottery rule and how they could use their $20 bonus to purchase the puzzle of their choice; 70 participants (8.98%) did not answer both questions correctly and were excluded from analysis. This left us with valid responses from 710 participants ($M_{age} = 37.54, 54.1\%$ female).

After learning about the lottery, participants went on to read about the shopping cart task, in which they could select which jigsaw puzzles to add to their cart for reconsideration. Half of the participants were asked to click the red button labeled as “reject this item” (the explicit rejection condition), whereas the other half were instructed that the red button would be framed as “look at other items” (the implicit rejection condition). Thus, the evaluation task was identical across conditions except for the framing of the rejection decision. The instructions read as the following:

- Click “Add this item to shopping cart” (yellow button) to add any puzzles that you like to your shopping cart. These items will be saved in your cart. You can make your final choice from your shopping cart.
- Click “Reject this item” [“Look at other items”] (red button) to not add the a puzzle to your shopping cart.
- Click “>>” to continue to the next puzzle.
- Click “<<” to go back to the previous puzzle.

Then, all participants evaluated the jigsaw puzzles, which appeared one at a time with a product image and four product attributes (e.g., title, price, number of pieces, size). Under the product information, there were also two buttons: yellow button to add and red button to reject.
In the *explicit rejection* condition, the red button read as “reject this item.”; in the *implicit rejection* condition, it was framed as “look at other items.” Therefore, participants engaged in the same physical action (i.e., click the red button) when deciding not to add the option, but the perceived strength of rejection differed across conditions.

**FIGURE 4**

**OPTION EVALUATION MODES (STUDY 3)**

<table>
<thead>
<tr>
<th>Explicit rejection</th>
<th>Implicit rejection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Puzzle #1 of 10</strong></td>
<td><strong>Puzzle #1 of 10</strong></td>
</tr>
<tr>
<td><strong>Closure induced</strong></td>
<td><strong>Closure induced</strong></td>
</tr>
<tr>
<td>Title</td>
<td>Title</td>
</tr>
<tr>
<td>Cafe at Night</td>
<td>Cafe at Night</td>
</tr>
<tr>
<td>Price</td>
<td>Price</td>
</tr>
<tr>
<td>$17.99</td>
<td>$17.99</td>
</tr>
<tr>
<td>Pieces</td>
<td>Pieces</td>
</tr>
<tr>
<td>1000 pieces</td>
<td>1000 pieces</td>
</tr>
<tr>
<td>Size</td>
<td>Size</td>
</tr>
<tr>
<td>19.25&quot; x 27&quot;</td>
<td>19.25&quot; x 27&quot;</td>
</tr>
<tr>
<td>Add this item to shopping cart</td>
<td>Add this item to shopping cart</td>
</tr>
<tr>
<td>Reject this item</td>
<td>Look at other items</td>
</tr>
<tr>
<td>&lt;&lt;</td>
<td>&lt;&lt;</td>
</tr>
<tr>
<td>&gt;&gt;</td>
<td>&gt;&gt;</td>
</tr>
</tbody>
</table>

| **Control** | **Control** |
| Title | Title |
| Cafe at Night | Cafe at Night |
| Price | Price |
| $17.99 | $17.99 |
| Pieces | Pieces |
| 1000 pieces | 1000 pieces |
| Size | Size |
| 19.25" x 27" | 19.25" x 27" |
| Add this item to shopping cart | Add this item to shopping cart |
| Reject this item | Look at other items |
| << | << |
| >> | >> |

Importantly, we also manipulated situational closure by informing participants in the *closure induced* conditions in advance that they would evaluate a finite number of 10 jigsaw
puzzles and be able to keep track of their evaluation progress on each page. For these participants, each puzzle was numbered out of 10 (e.g., puzzle #1 out of 10) until they evaluated all options and reached puzzle #10 out of 10. We believed that this cue, which had been absent in our previous studies, could boost the sense of completeness over the evaluation by highlighting that the evaluation is complete not only after each option but also after viewing all options. Participants in the control condition also evaluated 10 puzzles but were not provided with this information; they were not notified of the number of puzzles they would evaluate or their evaluation progress; see figure 4 for the evaluation modes.

Once participants had decided whether to add each puzzle to cart, they could continue to the next option by clicking the ‘next’ button. They could go back to the previous option at any time by clicking the ‘back’ button. When participants had finished reviewing all ten options, they proceeded to their shopping cart, where the puzzles that survived their rejection were saved. Then, we asked participants, “Which of these puzzles would you buy?” and prompted them to decide between buying a puzzle from their cart or not buying any puzzle (receive the $20 cash instead). After indicating whether they would buy a puzzle, participants also reported their felt closure over the evaluation on a seven-point scale (“While evaluating the jigsaw puzzles, to what extent did you feel like your evaluation of each puzzle was complete? 1 = Not at all, 7 = Very much) as a manipulation check. Finally, all participants were thanked for their participation, and the five lottery winners received their $20 cash bonus and a product link to their chosen jigsaw puzzle in the following week.

Results

Closure. As a manipulation check, we tested whether explicit (vs. implicit) rejection and
closure through progress markers (vs. control) increased the level of closure felt after the evaluation. A two-way ANOVA on perceived closure as a dependent variable and rejection mode and closure as independent variables revealed a significant effect of rejection mode: Participants who rejected options with greater explicitness reported higher closure ($M_{\text{explicit rejection}} = 6.07, SD = 1.36$ vs. $M_{\text{implicit rejection}} = 5.84, SD = 1.47, F(1, 706) = 4.81, p = .029, \eta^2_p = .007$). There was also a significant effect of closure in that those who were situationally induced closure through the progress markers felt greater completeness after evaluation ($M_{\text{closure induced}} = 6.08, SD = 1.33$ vs. $M_{\text{control}} = 5.84, SD = 1.49, F(1, 706) = 5.10, p = .024, \eta^2_p = .007$.

There was a rejection strength x closure interaction, $F(1, 706) = 2.59, p = .108, \eta^2_p = .004$.

Because we did not predict this directional interaction and were not particularly interested in whether the rejection modes or the closure cues induce greater evaluation closure, we do not discuss further.

**Commitment.** We then ran a logistic regression with purchase likelihood as a dependent variable (1 = final selection from items in the cart, 0 = deferral option) and rejection mode (1 = explicit rejection, 0 = implicit rejection) and closure (1 = induced, 0 = control) as independent variables. Consistent with our earlier findings, there was a significant effect of rejection strength, in that explicit rejection ($M = 51.2\%$) increased purchase likelihood compared to implicit rejection ($M = 45.7\%$), $B = .50, SE = .22$, Wald’s $\chi^2(1) = 5.17, p = .023$. As expected, there was also a significant effect of closure in that those who were induced to feel greater completeness over their evaluation ($M = 50.8\%$) exhibited greater commitment than those in the control condition ($M = 46.3\%$), $B = .47, SE = .22$, Wald’s $\chi^2(1) = 4.48, p = .034$. Most importantly, there was a marginally significant interaction between rejection mode and closure, $B = -.52, SE = .30$, Wald’s $\chi^2(1) = 2.92, p = .088$; when participants did not achieve closure through the progress
markers, explicit rejection ($M = 51.9\%$) significantly increased purchase likelihood compared to implicit rejection ($M = 39.6\%$), $\chi^2(1) = 5.20, p = .023$. However, when participants could reach closure through the progress markers, the difference between explicit rejection ($M = 50.6\%$) and implicit rejection ($M = 51.1\%$) was no longer significant mainly because those who made implicit rejections could achieve closure through the progress markers, $\chi^2(1) = .01, p = .918$; see figure 5. Furthermore, this interaction between rejection strength and closure persisted after controlling for the individual differences in the number of surviving options, $B = -.55, SE = .33$, Wald’s $\chi^2(1) = 2.74, p = .098$.

**FIGURE 5**
THE EFFECT OF EXPLICIT REJECTION ON COMMITMENT IS ATTENUATED WHEN CLOSURE IS OTHERWISE INDUCED (STUDY 3)

![Bar chart](image)

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

Discussion

Using a shopping cart task involving sequential evaluation of jigsaw puzzles, we tested whether evaluation tasks can vary in the degree to which they bring closure with respect to the decision to reject. Specifically, we observed the predicted result of our hypothesis (H2) that an explicit rejection of options increases closure compared to the comparable decision of looking for other options, but only when closure could not be achieved through other cues during the
evaluation process. We also equated the level of physical action needed for explicit rejection and implicit rejection to rule out the alternative account that explicit rejection leads to greater closure because it involves greater physical action and effort.

Another potential alternative explanation for the greater closure associated with explicit rejection is that participants assume that explicit rejection is permanent and irreversible whereas implicit rejection is temporary and reversible. If that interpretation is correct, the task differences would not be incurred by psychological closure, but rather, from the different interpretations of the respondents’ task. Accordingly, study 4 was designed to directly test this rival account by emphasizing to respondents that rejections are reversible. Specifically, we encouraged participants to revisit previously evaluated options and presented all available options simultaneously in a menu-board style, easing the reconsideration of past options.

In doing so, we also examine whether the heightened feeling of closure associated with rejection affects other search behaviors—specifically, likelihood of reconsidering past options. As we know, many consumers hesitate or delay their purchase after searching for products online and even revisit their previously evaluated products due to lack of confidence (Cho, Kang, and Cheon 2006; Kukar-Kinney and Close 2010). Thus, in the following studies, we again use the shopping cart task to test whether our effect can also reduce consumer reluctance to commitment by attenuating the need to re-evaluate past options.

**STUDY 4: TEST OF A RIVAL EXPLANATION BASED ON DECISION REVERSIBILITY**

As indicated, study 4 had two objectives: (a) to address the rival interpretation discussed
above, whereby the greater closure associated with rejection reflects the misconception that respondents could not change their minds about rejected options; and (b) to test another behavioral consequence of our mechanism, namely less reconsideration of evaluated options. We expected that if explicit rejection indeed leads to stronger preference for the rejection survivors, then individuals would feel less need to reconsider the options that they had evaluated and would be more likely to purchase one of the surviving options in their choice set.

Regarding the first objective to address the rival interpretation, our task instructions emphasized participants’ freedom to revisit and reconsider options that were initially rejected. That is, rejection did not mean that the option was no longer physically available. We also designed an interface that closely replicates a typical online retail webpage; specifically, participants were presented with all available options simultaneously using a menu-board style. This design allowed participants to easily identify and revisit previously evaluated items before making the final purchase decision.

Method

Three hundred and eighty-seven participants ($M_{age} = 34.59$, 57.9% female) were recruited for this study from Amazon Mechanical Turk. As in previous studies, participants were randomly assigned to either the explicit rejection condition (“reject this item”) or the implicit rejection condition (“look at other items”). The two conditions differed only in how the decision to reject the option (i.e., red button) was labeled. We used the similar shopping cart task from study 3 and asked participants to review nine microwave ovens and, for each option, to decide whether to add the microwave to cart. As in the previous study, the red button to reject an option was labeled as either “reject this item” or “look at other items,” depending on the assigned
condition. Importantly, there were two modifications to the procedure.

FIGURE 6
SIMULTANEOUS DISPLAY OF OPTIONS (STUDY 4)
The first difference was that in addition to the instructions we provided in study 4, we added a message about the availability of forgone options. Specifically, the added message said, “You can go back to the previous items you saw and reconsider them by clicking on any item again.” To allow participants to easily revisit past items, the second difference in this study was a menu-board page where all nine microwave oven options were simultaneously displayed on a single page, see figure 6. Participants were therefore instructed to click on one microwave oven at a time in order to view its product details (e.g., manufacturer, price, specifications). Upon clicking the microwave image, a pop-up page appeared as an overlay to the main list. This pop-up page included the product information for each microwave, the yellow button to add, and the
red button to *not* add the microwave to the cart, see figure 7. This graphical layout reminded participants of the availability of other options in the background as they were evaluating each option and enabled them to click on previous options with greater ease.

Next, participants saw the shopping cart icon appear in the top-right corner of the main list after they evaluated all nine microwave ovens. Once they clicked on the cart icon, participants were directed to their shopping cart page, which presented the microwave options that had survived the evaluation. Participants were asked, “Which, if any, of these items would you buy?” and could choose between the microwave ovens in their cart or the deferral option, “I would not buy any of these microwaves.”

**Results**

*Likelihood of reconsidering past options.* We counted the number of participants who decided to re-click on any of the previously reviewed options. As expected, participants who evaluated their options through explicit rejection were less likely to re-click on any item that they had reviewed ($M = 25.9\%$) compared to those who reviewed with implicit rejection ($M = 41.1\%$), $B = .69, SE = .22$, Wald’s $\chi^2(1) = 9.88, p = .002$, see the left graph of figure 8. This finding is consistent with the conclusion that an explicit rejection of options would increase closure over the evaluated options and reduce the likelihood of revisiting past options. The effect of explicit rejection remained after controlling for the number of surviving options ($B = .69, SE = .22$, Wald’s $\chi^2(1) = 9.81, p = .002$).

*Number of reconsidered options.* There was also a significant difference in the number of microwave options that participants re-evaluated across conditions. Consistent with the reconsideration likelihood data, the explicit rejection of options led participants to revisit fewer
options compared to implicit rejection ($M_{\text{explicit rejection}} = .59, SD = 1.62$ vs. $M_{\text{implicit rejection}} = 1.03, SD = 2.08$, $t(385) = 2.3, p = .021, d = 1.86$). This finding is in line with the assumption that those who rejected their options in the explicit rejection condition experienced greater closure over the past options than those who chose to look at other options in the implicit rejection condition; see the right graph of figure 8.

**FIGURE 8**

**EXPLICIT REJECTION REDUCES RECONSIDERATION OF EVALUATED OPTIONS (STUDY 4)**

* $p < .05$; ** $p < .01$; *** $p < .001$

Commitment. To our surprise, we found that 11 participants (2.8% of the sample, $n_{\text{explicit rejection}} = 5$, $n_{\text{implicit rejection}} = 6$) had decided not to add any option to their cart. We believe that this unprecedented result might have been due to the fact that the options were displayed simultaneously instead of sequentially as in previous studies. Although we had not predicted this effect of simultaneous option presentation on the number of surviving options, we decided to exclude these participants from this part of analysis because they could not select which option to buy from their empty shopping cart.

Consistent with our hypothesis, the likelihood of buying one of the surviving options, rather than selecting the deferral option, was higher when the button to reject items was framed
as an explicit rejection ($M = 98.4\%$) compared to an implicit rejection ($M = 94.6\%$), $B = 1.27$, $SE = .67$, Wald’s $\chi^2(1) = 3.60$, $p = .058$. This effect remained significant after controlling for the number of surviving options in the cart ($B = 1.33$, $SE = .67$, Wald’s $\chi^2(1) = 3.94$, $p = .047$).

Discussion

The results of study 4 demonstrate the predicted difference between the two rejection modes with respect to the satisfaction with the surviving options: less likelihood of revisiting unattractive options and greater likelihood of purchasing the survivors under rejections. These results are consistent with our proposition that explicit (vs. implicit) rejection of options leads to greater satisfaction with the surviving options. The results of this study also address lingering concerns over an alternative account, namely that rejecting an option is a more permanent and irrevocable decision than simply moving on to the next option available. We find that despite highlighting the ease of reconsidering past options, explicit rejection led to greater focus on the surviving options than on the previous options. In study 5, we provide a test of a new behavioral outcome of closure: commitment to the rejection survivors against a new set of options.

**STUDY 5: REJECTION AND EXPECTATION FOR FUTURE OPTIONS**

Study 5 introduces a different paradigm, namely examining the behavioral outcomes of search, to examine whether the rejection mode affects satisfaction with the rejection survivors. In this study, participants decided which options to place in their shopping cart and answered their interest in considering additional options that they had not yet examined. Drawing from past work which suggests that psychological closure limits comparisons between selected options and
reduces consideration of additional information (Kruglanski and Webster 1991), we expected that greater satisfaction with previously considered rejection survivors (i.e., options already placed in the shopping cart) would lower the desire to search additional options. Thus, after participants in this study had decided which options to add to their cart, they were asked about their expectations regarding other options they could evaluate and whether they were likely to find better options. To that end, we used a scale-based rating measure for half of our participants (i.e., rating condition) and a choice question for the other half (i.e., choice condition) to measure participants’ expectations for future options through different response types. We expected that, regardless of the response type, participants who had reviewed options through explicit rejection (vs. implicit rejection) would rate their expectation low or decide to not look at further options.

Study 5 also involved incentive-compatible decisions as in study 3. To ensure that participants would treat the evaluation task as consequential, we told them about their chance to receive their most preferred option by winning the lottery in the following week.

Method

Six hundred and two participants ($M_{age} = 32.2, 47.5\%$ female) recruited from Survey Sampling International were randomly assigned to one of four conditions in a 2 (rejection mode: explicit vs. implicit) x 2 (expectation measure: rating vs. choice) between-subjects design. Participants took part in a survey about consumer preference in online gift cards and read the instructions for the shopping cart task used in our previous studies. For each of the 10 gift cards, participants decided whether to add the gift card to their cart using two buttons: a yellow button labeled as “add this item to cart” and a red button framed as either a rejection of the current option (“reject this item”) in the explicit rejection condition or an implicit rejection (“look at
other items”) in the *implicit rejection* condition. After reviewing all 10 online gift card options in randomized order, participants in the *rating* condition then rated their expectation of finding a better option in a new set on a seven-point scale (i.e., “Suppose that you are given another list of ten available gift card options in the following page. In your opinion, how likely is it that you will find a better option in this new list of options?” 1 = *Extremely unlikely*, 7 = *Extremely likely*). Instead of the rating measure, participants in the *choice* condition were shown their surviving options in the shopping cart and were asked, “Which, if any, of these gift cards would you choose?” Participants in the choice condition could select one of the gift cards already in their cart or decide to look for more gift cards (i.e., “I would like to look at 10 additional gift card options”). Finally, participants in both conditions were told on the following page that due to time constraints, they would not look at new options as previously instructed and were thanked for their participation.

Results

*Expectation for future options: rating condition.* When we directly measured expectations via rating, we observed that participants showed greater commitment to their rejection survivors and, subsequently, lower expectations for upcoming options after making explicit (vs. implicit) rejections. Specifically, those who explicitly rejected options were less likely to indicate on a seven-point Likert scale that they would be able to find a better option among the new options on the following page ($M_{\text{explicit rejection}} = 4.99$, $SD = 1.36$) compared to those who seemingly delayed their decision through implicit rejection ($M_{\text{implicit rejection}} = 5.34$, $SD = 1.13$), $t(299) = 2.45$, $p = .015$, $d = .28$. As predicted, this effect remained consistent ($B = .32$, $SE = .15$, $t(298) = 2.21$, $p = .028$) after controlling for the number of surviving options ($B = .07$, $SE = .03$, $t(298) = 2.00$, $p = .047$).
Expectation for future options: choice condition. We then examined whether we observed a similar pattern when expectation was measured indirectly via choice. Consistently, we found increased commitment to the rejection survivors after making explicit rejections from participants when using a choice measure. Participants were more likely to select one of the gift card options in their cart (than to look at 10 additional options) after making explicit rejections \( M_{\text{explicit rejection}} = 80.5\% \) vs. \( M_{\text{implicit rejection}} = 66.4\% \), \( B = .74, SE = .27 \), Wald’s \( \chi^2(1) = 7.51, p = .006 \), suggesting that those who had evaluated their options with explicit (vs. implicit) rejections were more satisfied with their “rejection survivors” and less likely to believe that better options would come up in the future. This effect persisted \( (B = .52, SE = .28, \text{Wald’s } \chi^2(1) = 3.37, p = .067) \) after controlling for the number of surviving options \( (B = .45, SE = .09, \text{Wald’s } \chi^2(1) = 24.14, p < .001) \).

Discussion

In conclusion, the results of study 5 provide additional evidence supporting our hypothesis that an explicit (vs. implicit) decision to forego options during the evaluation process induces greater closure over the evaluated options and greater satisfaction with the surviving options. In an incentive-aligned task, participants who reviewed their options via explicit (vs. implicit) rejection were more likely to commit to their rejection survivors and less likely to believe they would encounter better options through further search. The observed effect was robust across the choice or rating measure. In the next study, we further examine the impact of explicit rejection on another important search behavior, namely stopping the search before making a commitment, using the free search task described below.
STUDY 6: REJECTION AND SEARCH STOPPING POINT

The experiments conducted so far involved tasks in which the number of evaluated options (e.g., 10 gift cards) was fixed by the experimenter and unknown to the participants. But in many real-life purchase decisions, that is not the case; there are often too many options for consumers to consider, so the relevant question that arises in the context of the present research is whether the difference in closure stemming from rejection modes can affect when consumers stop their search and the number of evaluated options (i.e., size of the consideration set).

We examined this question in study 6. Specifically, we tested whether rejection modes can impact individuals’ satisfaction with the options identified during the evaluation process even when the size of their consideration set is not fixed and known. To this end, we used the shopping cart task, as in our previous study, but introduced free search, whereby participants could view as many or as few options as they liked before proceeding to the checkout page. We used the stopping point—the number of options participants evaluated before terminating search—and purchase likelihood as indicators of closure over the evaluated options.

Method

Three hundred and ninety-four participants ($M_{age} = 35.98$, 54.3% female) were recruited from Prolific; they were randomly assigned to one of the two rejection modes as in the previous studies (explicit rejection: “reject this item” vs. implicit rejection: “look at other items”). Upon beginning the survey, participants read about the shopping cart task, during which they would sequentially review an unknown number of $25 gift card options that differed only in brands (e.g., Best Buy, Macy’s). To ensure that participants would treat the shopping cart task as
consequential, we provided additional instructions about the lottery, where all participants were entered into a lottery for a chance to win the gift card of their final choice.

Each gift card option in the carousel was represented by an e-gift card image and the name of the brand. For each gift card, participants could add the card to their cart by clicking a yellow button labeled “add this item to cart” or reject the option by clicking a red button. As in the previous studies, the red button was framed as either explicit rejection (“reject this item”) or implicit rejection (“look for other items”) depending on the assigned condition. Next to these yellow and red buttons, there was also a checkout button (“checkout”), which the participants could click at any time when they wished to stop looking for additional gift card options and proceed to their cart. Of note, we did not inform participants of the total number of available gift card options in the carousel, which in fact had 40 gift card options in a randomized order. This procedure allowed participants to engage in free search among a seemingly infinite number of options and gauged their actual interest in searching for more options when the number of available options is unknown.

Finally, when participants completed their evaluation and arrived at their cart, whether by reaching the last option in the carousel or by clicking “checkout,” they could select a gift card option in their cart or the deferral option (“I would not choose any of these gift cards.” (If you win the lottery, you will instead receive a bonus payment of $10)).

Results

*Number of evaluated options.* On average, participants opted to review 29.85 gift card options ($SD = 12.01$, Median = 36) out of the 40 available options before proceeding to their cart. We then examined whether this search termination point was sensitive to the way in which
participants rejected their options. In accordance with our closure account, results showed that participants in the *explicit rejection* condition ended their search earlier after evaluating fewer items ($M_{\text{explicit rejection}} = 28.64, SD = 12.95$) compared to those in the *implicit rejection* condition ($M_{\text{implicit rejection}} = 31.07, SD = 5.01$), $t(392) = 2.02$, $p = .044$, $d = .20$.

**Commitment.** We also observed that participants who rejected gift card options through explicit (vs. implicit) rejection were more likely to commit to an option from their rejection survivors rather than to defer ($M_{\text{explicit rejection}} = 89.9\%$ vs. $M_{\text{implicit rejection}} = 84.2\%$; $B = .51$, $SE = .31$, Wald’s $\chi^2(1) = 2.81$, $p = .093$), although the difference was only marginally significant. Of note, participants in this experiment differed from those in our previous studies in that they could determine how many options to evaluate, which can influence task involvement and choice commitment (Iyengar and Lepper 2000; Su, Chen, and Zhao 2009; Kuksov and Villas-Boas 2010; Chernev, Böckenholt, and Goodman 2015). Therefore, we examined whether the effect of rejection mode on purchase likelihood persisted after controlling for the number of evaluated items. To this end, a logistic regression was performed with purchase likelihood as a dependent variable ($1 =$ final selection from options in the cart, $0 =$ deferral option), and rejection mode ($1 =$ explicit rejection, $0 =$ implicit rejection) and the number of evaluated items as independent variables. The results showed that search stopping point significantly predicted purchase likelihood in that the more gift cards participants evaluated before proceeding to their cart, the more likely they were to choose a gift card from their cart ($B = .03$, $SE = .01$, Wald’s $\chi^2(1) = 6.51$, $p = .011$). Importantly, the aforementioned effect of rejection mode on choice commitment persisted after controlling for individual differences in the number of evaluated options ($B = .62$, $SE = .31$, Wald’s $\chi^2(1) = 3.86$, $p = .050$), suggesting that participants who made explicit (vs. implicit) rejections were more likely to choose a gift card from the rejection survivors despite
having examined fewer gift cards.

Discussion

Taken together, Studies 1–6 found that evaluating options through explicit rejection evokes a greater sense of closure and results in the behavioral consequences of evaluation closure (i.e., greater choice commitment, lower likelihood of reconsideration of forgone options, lower expectations regarding future options, earlier stopping point). In the last study, we turn to evidence from the field to test whether making a greater number of explicit rejections during sequential evaluation can boost actual commitment.

STUDY 7: DECIDING WHICH PET TO ADOPT (FIELD DATA)

The goal of this last study was to document the rejection survivor advantage from real consumer behavior in the field. In partnership with a European mobile app company, we examined in a natural field setting the behavioral consequences of making greater rejections during sequential evaluations. This app was designed to allow potential pet owners to evaluate dogs and cats\(^1\) available for adoption in their neighborhood using a swiping feature (e.g., swipe right to add, swipe left to reject) we have used in studies 2A-2B. The behavioral outcomes of interest were the number of evaluated options and commitment after evaluation, which was gauged by whether the user made a call to the adoption center after evaluating the available animals. We aimed to test whether users who explicitly rejected more pets during their

\(^1\) Upon downloading the app, users were asked whether they were primarily interested in dogs or cats. Each user could browse only dogs or cats or both dogs and cats in the app. Because our anonymized data do not show the species of each animal, our analyses show results of the collapsed data across both dogs and cats.
evaluation are more likely to adopt one of the pets that survived their evaluation, controlling for the number of evaluated pets.

Method

Our data consist of 2,107 users who downloaded the pet adoption app over a four-month period (December 2020 – March 2021). Of those who downloaded the app, 1,189 users completed the onboarding tutorial (e.g., instructions on how to use the app) and evaluated at least one pet that was available for adoption during the period. When users were ready to evaluate the available pets, the app showed them one pet profile at a time with the image, gender, and age of the pet; see the left image of figure 9.

**FIGURE 9**

APP DESIGN – OPTION EVALUATION MODE (LEFT), LIST OF SURVIVING OPTIONS (RIGHT)
For each pet, users could swipe right, or move their finger to the right, to save the pet to their list, which they could later visit to make their final decision. Alternatively, they could reject the pet by swiping left, or moving their finger to the left. Rejected pets were not saved to the list, and users could not “skip” any pets. At any time while evaluating the pets, users could visit their shortlist and decide which pet, if any, to adopt by clicking the adoption center information, see the right image of figure 9. The shortlist page displayed all pets that were added (or survived rejections), and users could click on each pet to learn more about it (e.g., personality, health conditions). If they wished to adopt the pet, participants could click the “get” button for each pet, which directed users to the adoption shelter information (e.g., shelter name, location, phone number). Users could then click on the shelter phone number to directly call the shelter through the app. For each user, we collected data on the number of animals evaluated and animals added/rejected measured commitment by whether the user was interested in adopting one of the animals that survived the evaluation (i.e., get the shelter information or call the shelter for at least one animal).

Results

*Number of evaluated options.* An average user evaluated about 24 pets ($M = 24.36$, $SD = 28.37$), of which 81.38% were rejected; on average, about five pets survived from the evaluation process and were saved to the list ($M = 4.83$, $SD = 10.09$). We also found that the number of evaluated options was negatively correlated with rate of rejections made by the user (i.e., the number of pets rejected divided by the number of pets evaluated): In other words, the more rejections the user made during the evaluation, the fewer options he evaluated before stopping
his search ($B = -8.39$, $SE = 2.42$, $t(1187) = -3.47$, $p < .001$). This finding is consistent with study 6 results in that making more explicit rejections helped participants end their search earlier.

**Commitment.** Among the users who visited their shortlist after evaluation, 10.77% clicked the “get” button to retrieve the shelter information for one or more pets saved to their list, and only 1.51% successfully made a call to the adoption shelter. Using the rate of rejections made by the user (i.e., the number of pets rejected divided by the number of pets evaluated) as a predictor, we found that users who made more rejections were significantly more likely to show interest in adopting a pet from their list by accessing the shelter information ($B = .64$, $SE = .25$, Wald’s $\chi^2(1) = 6.52$, $p = .011$). Given the uncovered relationship between rejection rate and the number of evaluated pets, we tested whether this effect remained after controlling for the number of evaluated options; The observed correlation remained robust ($B = 1.01$, $SE = .27$, Wald’s $\chi^2(1) = 14.01$, $p < .001$) after controlling for the number of pets evaluated, which was negatively correlated with commitment ($B = -.02$, $SE = .003$, Wald’s $\chi^2(1) = 62.01$, $p < .001$).

We also analyzed the data using whether the user made a call to the adoption shelter as another proxy for commitment; The results showed great resemblance to the access data in that higher rejection rate was related to greater likelihood of making a call ($B = 1.11$, $SE = .59$, Wald’s $\chi^2(1) = 3.58$, $p = .059$). This relationship remained ($B = 1.31$, $SE = .61$, Wald’s $\chi^2(1) = 4.65$, $p = .031$) even after controlling for the number of pets evaluated ($B = -.01$, $SE = .005$, Wald’s $\chi^2(1) = 6.12$, $p = .013$).

**Discussion**

The results of this field data provide correlational evidence suggesting that the use of explicit rejections in evaluation of options is associated with greater commitment, namely
adoption intentions. By looking at the number of rejections user made while deciding which pet to adopt, we found that those who explicitly rejected more pets by swiping left were more likely to call the adoption center and end their search earlier compared to those who made fewer rejections. The current study is informative in the sense that it provides initial, large-scale field evidence on the effect that rejections may have on consumer commitment.

**GENERAL DISCUSSION**

We proposed and empirically demonstrated in this research that the mode of rejecting one’s options matters—in common situations in which options are evaluated sequentially, it significantly and robustly affects purchase likelihood. Specifically, eight studies demonstrated that evaluation modes that differ with respect to the strength of rejection affect the likelihood that the evaluation will end in action (i.e., purchase, pet adoption). This effect is related to the impact of the evaluation mode on the resulting psychological closure pertaining to the foregone options. That is, explicit rejections are associated with greater closure, which in turn impacts the level of commitment to the rejection survivors in the choice set.

Study 1 provided initial support for our claim that explicit (vs. implicit) rejection increases commitment after evaluation. Studies 2A–2B showed converging evidence that explicit option rejection can facilitate psychological closure over the evaluated options and increase satisfaction with the surviving options. Then, study 3 further demonstrated the role of closure in the rejection survivor effect by inducing situational closure. In studies 4–6, we further examined the downstream behavioral consequences of evaluating options via explicit rejection. Using a novel experimental paradigm that closely replicates the online shopping experience, we focused
on the impact of option rejection mode on reconsideration of previous options (study 4), expectations for potential additional options (study 5), and the number of evaluated options before stopping the search process (study 7)—all of which are byproducts of choice commitment. Consistent with the earlier findings, explicit rejection in the evaluation phase led to lower expectation for the additional options and an earlier stopping point. Finally, we turn to examining the consequences of explicit rejection in field data observed in actual pet adopters in study 7. We also tested alternative accounts and demonstrated that our effect cannot be explained based on the notion that explicit rejection involves more physical action (study 3) or is less reversible (study 4) than implicit rejection and tested robustness of our effect across studies by controlling the number of surviving options.²

It is also noteworthy that the rejection mode effect was robust across an array of product categories (e.g., pets for adoption, paintings, jigsaw puzzles, microwave ovens, gift cards) and different types of evaluation interfaces commonly employed on the web (e.g., swiping feature, shopping cart feature). In sum, our results show that if option evaluations feel more like explicit rejections, consumers are more likely to perceive their initial judgments as final and be “at ease” while proceeding to the next decision phase (i.e., decide whether to adopt a pet, make a purchase).

² To better control for the number of surviving options, we also ran a study in which all participants were required to add the same fixed number of items to their cart and replicated the effect on purchase likelihood; see supplementary study in Web Appendix.
Economic theory assumed (e.g., Stigler 1961) that the decision to stop search or product evaluation occurs (1) at the point that the expected marginal cost of additional search exceeds the marginal benefit, and (2) when the decision maker feels confident in making a choice or a purchase (Bearden and Connolly 2007; Peterson and Merino 2003; Shin and Ariely 2004). But in the current online consumer environment, search cost is often negligible (Jolivet and Turon 2019; Park and Kim 2003), and online shopping carts allow consumers to terminate their product evaluation process without completing a purchase (Close and Kukar-Kinney 2010; Greenleaf and Lehmann 1995). A question that naturally arises pertains to the drivers of the extent of search and the decision to purchase in this environment and whether search outcomes can be assumed to be independent of consumer evaluation mode. Our research indicates that treating consumer search generically without distinguishing rejection modes ignores an important influence on search outcomes. Moreover, because marketers and policy makers can—at least in some cases—control the manner in which options are evaluated, this influence on search and purchase decisions can be used to develop more effective strategies. As the current research shows, a key psychological mechanism involves the creation of the sense of closure, which increases purchase and commitment.

The current findings have additional practical implications, including the phenomenon of cart abandonment. Shopping cart abandonment is a common problem encountered by online retailers; up to 88% of consumers who browse products using virtual carts do not complete their purchase at all (Kukar-Kinney and Close 2010). To make matters worse, online consumers often select from sequentially presented options—rather than simultaneously displayed options (i.e.,
all available options at once)—which exacerbates the expectations of finding a better option and can cause purchase delay and avoidance (e.g., Mogilner, Shiv, and Iyengar 2012). Our findings suggest that even when online shoppers use shopping carts or engage in sequential option evaluation, influencing rejection mode—and thereby promoting the feeling of closure—can significantly decrease the rate of cart abandonment and improve purchase rate.

It is noteworthy that some online retailers have already employed rejection-mode variations on their websites. For example, a multi-brand U.S. retailer has recently implemented two different versions of rejection framing on its online landing page; see figure 10. In one variation, consumers view a 15% discount sign-up offer and are given an opportunity to reject the offer through an explicit rejection (i.e., click “Reject my 15%”). In another variation that occurs on another day, the same decision to not sign up for the offer is framed as an implicit rejection (i.e., click “Continue to site”). In other words, the retailer offers the same sign-up offer but manipulates only whether the shoppers can decline the offer through explicit or implicit rejection. Given our mechanism, we expect the sign-up rate (i.e., the percentage of shoppers who do not decline the offer) to be higher in the explicit rejection version because explicit rejection incurs greater consideration of losses. Once consumers decide to sign up and take the discount offer, we posit that they would feel greater closure over their decision (i.e., the decision to take the discount offer is final), which would result in greater liking and commitment toward the offer. Although we have tested the effect of rejection modes in the search context, we expect our mechanism and predictions to persist in various contexts in which marketers can frame decisions as explicit (vs. implicit) rejections and increase the perceived difficulty of rejections. Therefore, the rejection mode effect may be applied more broadly to any context that involves decision, closure, and commitment. In sum, beyond its theoretical implications, this research also has
practical implications, particularly for retailers, such as choice delay and increasing online commitment.

FIGURE 10
EXPLICIT REJECTION (LEFT) VS. IMPLICIT REJECTION (RIGHT)

Our findings suggest several directions for future research. The first direction is to study the limits of the effect of rejections on choice commitment. One potential moderator is the number of evaluated options; it is possible after having made too many rejections, consumers may attribute negative aspects to the overall experience. Although we have largely ruled out the role of consideration set size in our studies (the number of evaluated options was kept constant across participants in studies 1–5 and controlled for in studies 6–7), future research may seek to determine the maximum number of options for which our rejection effect holds before it attenuates and backfires. Second, there may be an interaction between the valence of product
options and the strength of rejection. Previous works have shown that the valence of the options (e.g., good employees vs. bad employees) and the decision task (e.g., choose an employee, reject an employee) may affect decision confidence and satisfaction (Perfecto et al. 2017). Given that the products we used were relatively positive with enriched attributes (e.g., wall paintings, microwave ovens, gift cards), we may observe a systematically different pattern in commitment when the options in the consideration set are negatively valenced (e.g., selecting the most or least preferred an option from a set of unattractive options). It is possible that the degree of closure with respect to rejected options during the evaluation process may be amplified in the negative domain where consumers could be in need of greater decision closure. Lastly, it would also be interesting to explore whether consumers can make strategic use of rejection to achieve closure with their evaluations. Specifically, when do consumers decide to explicitly reject their options? For example, consumers often rely on rejections to eliminate options from their consideration set (e.g., remove the least favorite restaurant when deciding where to dine) or frame their decision in a way that highlights explicit rejection is available (e.g., “yay-or-nay”). In fact, a recent work by Gu and colleagues (2018) suggests that consumers often make assumptions about how deliberately achieving psychological closure can impact their satisfaction with choices they have made. Similarly, consumers may actively employ explicit rejection framing verbally (e.g., “I will reject this option”) when making an important decision or contemplating their choice between options involving significant trade-offs between attributes in order to avoid choice delay and hesitation. Such investigations may provide further insights into the manner in which consumers understand the strength of rejection and the degree of closure with respect to rejected options.
APPENDIX

THE NEED FOR A TYPOLOGY OF REJECTION MODES

Although previous studies have found evidence for task effects of rejection compared to choice, relatively little attention has been paid to the psychology of rejecting an option and the different ways of framing rejection. In fact, only recently have studies begun to acknowledge the importance of a no-choice option in the choice set and started to include the no-choice option with an implicit assumption that such rejection option reflects how consumers make their real-life decisions (Dhar 1997). In many real-world situations, however, decision makers can not only walk away from their consideration set, but also do so with different rejection motives (e.g., they do not like any options available, wish to look at other options before making a purchase, or expect that there are better options). Unfortunately, extant research on choice deferral or rejection does not differentiate “explicit” rejection and “implicit” rejection and even uses different frames of rejection interchangeably or together (see table A1 below).

One notable exception is an experiment by Frederick and colleagues (2009) in which the authors demonstrated that changing the explicit framing of the “not buy” option to the implicit framing of “keeping money for other purchases” decreased the purchase rate. They suggested that a deferral option that enhances the salience of opportunity costs elicits thoughts about alternative uses of money. However, we define a wider typology of rejection frames that recognizes the degrees of rejection, among which some rejection frames may not necessarily evoke financial opportunity cost.
### TABLE A1

THE ALTERNATIVE FRAMES OF REJECTION IN PRIOR STUDIES

<table>
<thead>
<tr>
<th>Study</th>
<th>Rejection frame presented to the participants</th>
<th>Rejection mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tversky and Shafir (1992, Exp. 1)</td>
<td>“Continue to search for [options]”</td>
<td>Implicit</td>
</tr>
<tr>
<td>Dhar (1996, Exp. 1)</td>
<td>“Not buy any of these [options] and search for other options”</td>
<td>Explicit/Implicit</td>
</tr>
<tr>
<td>Dhar (1997, Exp. 1)</td>
<td>“Need for more information” “Search for other brands”</td>
<td>Implicit</td>
</tr>
<tr>
<td>Dhar and Nowlis (1999, Exp. 1)</td>
<td>“Not buy either of these [options] and go to another store”</td>
<td>Explicit/Implicit</td>
</tr>
<tr>
<td>Dhar and Nowlis (1999, Exp. 4)</td>
<td>“Neither”</td>
<td>Explicit</td>
</tr>
<tr>
<td>Dhar and Simonson (2003, Exp. 2)</td>
<td>“Not buy any of these [options] and go to another store.”</td>
<td>Explicit/Implicit</td>
</tr>
<tr>
<td>Dhar and Nowlis (2004, Exp. 3)</td>
<td>“Choose none and go to another store”</td>
<td>Explicit/Implicit</td>
</tr>
<tr>
<td>Nijstad and Kaps (2008, Exp. 1)</td>
<td>“None of the current candidates should be hired”</td>
<td>Explicit</td>
</tr>
<tr>
<td>Parker and Schrift (2011, Exp. 1)</td>
<td>“Neither”</td>
<td>Explicit</td>
</tr>
<tr>
<td>Schrift and Parker (2014)</td>
<td>“Not participate”</td>
<td>Explicit</td>
</tr>
<tr>
<td>Krijnen, Zeelenberg, and Breugelmans (2015, Exp. 1)</td>
<td>“Look for more information on a website and decide later”</td>
<td>Implicit</td>
</tr>
<tr>
<td>Krijnen, Zeelenberg, and Breugelmans (2015, Exp. 4)</td>
<td>“Wait and make a decision next month”</td>
<td>Implicit</td>
</tr>
</tbody>
</table>
REFERENCES


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