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Research Article

The effects of goal progress cues: An implicit theory perspective

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Abstract

Consumers often encounter goods and services that provide cues to mark their progress. We define the term "goal progress cues" to reflect the diverse category of cues that highlight progress towards a goal. Across a series of three studies, we show that entity theorists, who rely on cues that highlight completion in order to signal their abilities to others, evaluate tasks that include these cues more favorably than those that lack these features. In contrast, incremental theorists, who focus on improving competence, are impacted only by progress cues that highlight learning. We demonstrate these findings across a variety of goal pursuit contexts that represent a mix of customer-centric (retail queues), service-oriented managerial (sales calls), and personal achievement consumer product (mazes) domains using both behavioral and self-reported measures. We conclude with a discussion about the theoretical and substantive implications of our findings.

Keywords: Implicit theory orientation; Goals; Goal pursuit; Progress cues

Introduction

Daily life is filled with cues that highlight the progress of consumption of goods and services at various points along the consumption journey. For instance, dieting programs are specifically designed with tracking mechanisms to highlight goal progress. Consumer loyalty programs provide progress markers for the purchase and consumption of a wide-range of goods from airline trips to cups of coffee. Even Disney parks provide wait time estimates so that customers can track their physical and temporal movement along the attraction's queue. Perhaps most obvious are the plethora of technology products that make the consumption journey salient to their users, such as e-book readers that display a continually updated percentage of the book read. We define the term "goal progress cues" to reflect the diverse category of cues that highlight progress towards a goal. The specific cues studied to date in the goal progress literature (goal visualization: Cheema & Bagchi, 2011; progress bars: Koo & Fishbach, 2010a; physical movement in a retail queue: Koo & Fishbach, 2010b) are all subsets of this larger, more inclusive category of goal progress cues that indicate progress towards the completion of the task.

The growing prevalence of these goal progress cues warrants a systematic examination of factors that may impact their downstream effects. In this research, we suggest that the effects of goal progress cues may not be uniform for all individuals. Specifically, we suggest that an individual's implicit theory of change (Levy, Stroessner, & Dweck, 1998; Plaks, Grant, & Dweck, 2005) serves as an important determinant of how such cues impact goal pursuit, achievement, and satisfaction. We show that entity theorists, who believe in the immutability of the world, infer validation of their abilities from progress feedback. As a result, entity theorists favor goal pursuit with tasks that include goal progress cues and evaluate such tasks more favorably than those that lack these features. In contrast, incremental theorists, who believe in changeability of the self and others, are focused on improving their abilities, and are hence, unaffected by goal

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progress cues that highlight the extent to which a task has been completed.

Conceptual development

Implicit theory

Research has identified two types of implicit theories that individuals endorse: entity and incremental. Individuals who have an entity theory orientation tend to view people, events, and objects in relatively fixed, unchanging terms (Plaks et al., 2005) and are driven by an aim to "gain favorable judgments" (also called performance goals; Elliot & Dweck, 1988). Individuals who have an incremental theory orientation tend to possess a more dynamic and flexible view (Plaks et al., 2005) and are driven by an aim to "increase their competence" (also called learning goals; Elliot & Dweck, 1988). Implicit theories can be measured as chronic orientations (Levy et al., 1998), but can also be temporarily primed using external stimuli such as television shows, movie clips, and conventional marketing tools such as print advertisements (Jain, Mathur, & Maheswaran, 2009).

Implicit theory orientation is emerging as an important individual difference variable in the consumer behavior domain, impacting several downstream variables such as evaluations of marketing messages (Jain et al., 2009), brand activity (Mathur, Jain, & Maheswaran, 2012), and consumption behavior (Park & John, 2010). For instance, consumers' responses to persuasive messages are shown to differ in accord with their implicit theory orientation (Jain et al., 2009). Mathur et al. (2012) have shown that consumers' implicit theories impact their brand extension acceptance. Consumers' implicit theory has also been shown to impact the use of brands with certain attributes (Park & John, 2010). Thus, a growing body of research supports the posit that the impact of implicit theories of change on consumer behavior is far-reaching and pervasive. As discussed below, we add to this growing literature by demonstrating that implicit theory orientation also influences evaluations of goal oriented tasks in retail, services, and consumer products domains.

Implicit theory and goal progress cues

Extant research has emphasized an individual's implicit theory orientation as a determinant of whether the person focuses on gaining favorable judgments or improving competence during goal pursuit (Dweck & Leggett, 1988). In general, entity theorists, who have performance goals (Dweck & Leggett, 1988), focus on "seeking to maintain positive judgments of their ability," (Elliot & Dweck, 1988, p 5). Hence, entity theorists seek cues and situations that imply favorable inferences about their competence and provide flattering external evidence and signals of their capabilities (Ommundsen, 2001; Tabarnero & Wood, 1999, p 107). As a result, entity theorists tend to prefer tasks and experiences that signal complimentary outcomes and advantageous judgment. This general tendency of entity theorists has been robustly evidenced in social and cognitive behavioral domains, and more recently revealed in consumption behavior in the market place. For example, Park and John (2010) have shown that entity theorists prefer products with prominent luxury logos which serve as favorable signals of desirable traits because "entity theorists perceive the self in a more positive way through opportunities to signal positive qualities to the self or others" (Park & John, 2010, p 656). Along similar lines, entity theorists have also been shown to systematically prefer advertising appeals that focus on a brand's signaling ability (versus the brand's self-improvement ability; Park & John, 2012). Based on this nascent literature, we suggest that goal progress cues that highlight the extent to which a task has been completed serve as similar external self-affirmation signals for entity theorists.

Indeed, goal progress cues that point to the extent to which a task has been completed have been shown to provide meaningful feedback about progress to goal pursuers. For instance, Cheema and Bagchi (2011) have shown that external representations of progress, such as the approaching wall of a pool for a swimmer swimming laps, or progress bars depicting the progress made during a task, enhance goal pursuit. Similar effects have been recorded for other external representations of progress towards completing a task, such as physical movement (Koo & Fishbach, 2010b). Amir and Ariely (2008) have shown in a video game setting that progress bars that indicate the extent of a task completed impact both task evaluations and performance in that level of the video game. Therefore, we suggest that goal progress cues that represent progress towards completing a task are perceived favorably by entity theorists because for them, explicit representation of progress towards completion serves as a proxy for achievement and provides external validation of their competence. Thus, entity theorists are likely to favorably evaluate tasks that include such completion cues.

In contrast, incremental theorists strive to *improve* their competence on the task, "are concerned with developing their ability," and are not motivated to simply relay favorable competence information about themselves to others (Dweck & Leggett, 1988; Elliot & Dweck, 1988, p 5). Because incremental theorists are known to self-monitor progress towards accomplishing the goal (Dweck & Leggett, 1988, p 258), external cues such as goal progress cues that provide progress information towards completion are unlikely to carry meaning and relevance for incremental theorists. Therefore, the presence or absence of completion cues should not matter to incremental theorists.

Thus, if our theorizing is correct, we should expect entity theorists, as compared to incremental theorists, to prefer tasks that include cues that provide representation of progress towards completing a task. We would also expect entity theorists to prefer tasks that include goal progress cues in comparison to tasks that lack these cues, while incremental theorists should be unaffected by the presence or absence of goal progress cues. Stated formally:

H1a. Entity (vs. incremental) theorists will evaluate tasks more favorably in the presence of goal progress cues that highlight completion.

H1b. Entity theorists will evaluate tasks that include completion goal progress cues more favorably than tasks that do not include such cues.

We begin by testing H1a in Study 1 with a naturally occurring goal progress context that is prevalent and customary in most retail environments: the check-out queue. By studying goal progress cues in this domain, we add to the nascent literature that identifies cues to goal progress that arise in the context of physical goal pursuit. For example, past research has captured the cueing effects of physically moving forward, such as moving along in a retail queue (Koo & Fishbach, 2010b). In this study, we conceptualize goal progress cues that highlight completion as physical movement and suggest that entity theorists will infer greater progress from physical movement towards an end goal than will incremental theorists. These favorable inferences will have positive implications for the evaluations of the queue and store. We test this premise in a retail queue setting in which being served at the cash register is a naturally occurring end goal and physical movement cues progress towards completing the task.

Study 1: When physical movement serves as a goal progress cue: The queue study

Procedure

Ninety-six undergraduates participated in the study in return for partial course credit. The ostensible purpose of the study was "to understand how visual stimuli impact judgments and attitudes." Implicit theory orientation was measured using the Implicit Theory General World Order Scale, adapted from Levy et al. (1998). Respondents expressed the extent of their agreement with eight statements (e.g., "The kind of person someone is is something very basic about him or her, and it can't be changed very much" and "Everyone, no matter who they are, can significantly change their basic characteristics") on a 6-point scale anchored by "strongly agree(1)/strongly disagree(6)."

Participants were instructed to imagine that they were shoppers ready to pay for their purchases in a supermarket that had five columns of queues and seven registers. A shopper in any of the five columns (labeled A, B, C, D, and E) could be sent to any of the seven cash registers in the order "A" to "E," depending on register availability. Thus, an individual in the queue would move down the column (column-wise movement), but individuals would be served based on the column they were standing in (row-wise movement). These queue systems are commonly used in retail and service settings with high foot-falls and confined spaces in very large metropolitan cities.

After reading the detailed description about the queue system, respondents completed a practice session in which they saw a two-dimensional depiction of the seven cash registers along with the line-up area where the five columns had been demarcated (columns A to E) (See Fig. 1). In each column, visuals depicted waiting customers (column length: two or three shoppers), with a different number of customers in each column. Each customer was labeled with a name in order to allow respondents to identify the customers. For instance, in Fig. 1, which depicts the stimuli that the respondents saw, imagine that the customer named Jose is to be called next. Since the number 7 is depicted as flashing on the display board, Jose will be served at register number 7. The next customer to be served will be Shawn, who will be served at the next available register, which will be indicated on the display board. After Shawn, John would be served at the next available register and so forth.

Respondents were then asked to indicate the column they would have joined. The stimuli had been designed in a way so that respondents would need to carefully consider the movement of the line system in order to identify and choose the "shortest path" to the cash register. Once respondents had chosen their column, they were asked to estimate how many people were waiting to be served before them. The correct response would thus be not the number of people in the column waiting in front of them, but the *total* number of persons to be served (rows and columns) before their own turn. After completing this practice round, respondents learned that they would be starting the actual study and would see visual depictions of themselves as they waited in line in a similar queue system. All respondents saw the same exact depiction (they were standing in column B) regardless of which column they had selected in the practice round. Respondents viewed two visuals of the line system, each visual representing the line after every 5 min, and their own position in the line as it moved towards the cash register. After viewing each visual, participants provided responses to relevant measures.

Dependent variables

Practice round

Respondents in the practice round were asked to indicate which column they should stand in (not the focal dependent variable) and provide an estimate of how many persons would be waiting to be served before them, and whether the line system was difficult to understand (difficult to comprehend(1)/easy to comprehend(7)). These measures served as checks intended to determine that respondents had understood the queue system.

Experimental condition

After each visual depiction of their position in line, respondents were asked to indicate the number of people waiting in front of them (scale range from two to 40 people). The length of line would serve as a measure of the perception of progress, with lines perceived as being shorter indicating greater progress. After each visual depiction, participants also indicated their attitudes towards this line system as compared to the "standard lines you've probably seen in the supermarket," elicited as an index of the following 7-point scales (much less favorable(1)/much more favorable(7), much more negative(1)/much more positive(7), much less frustrating(1)/much more frustrating(7; reverse scored)). At the end of the exercise, respondents indicated their overall evaluation of the line system on five 7-point scales (bad(1)/good(7), negative(1)/positive(7), unfavorable(1)/favorable(7), not likeable(1)/likeable(7), unpleasant(1)/pleasant(7); $\alpha = .97$) and provided their evaluations of the store on the same items. At the end of the experiment,

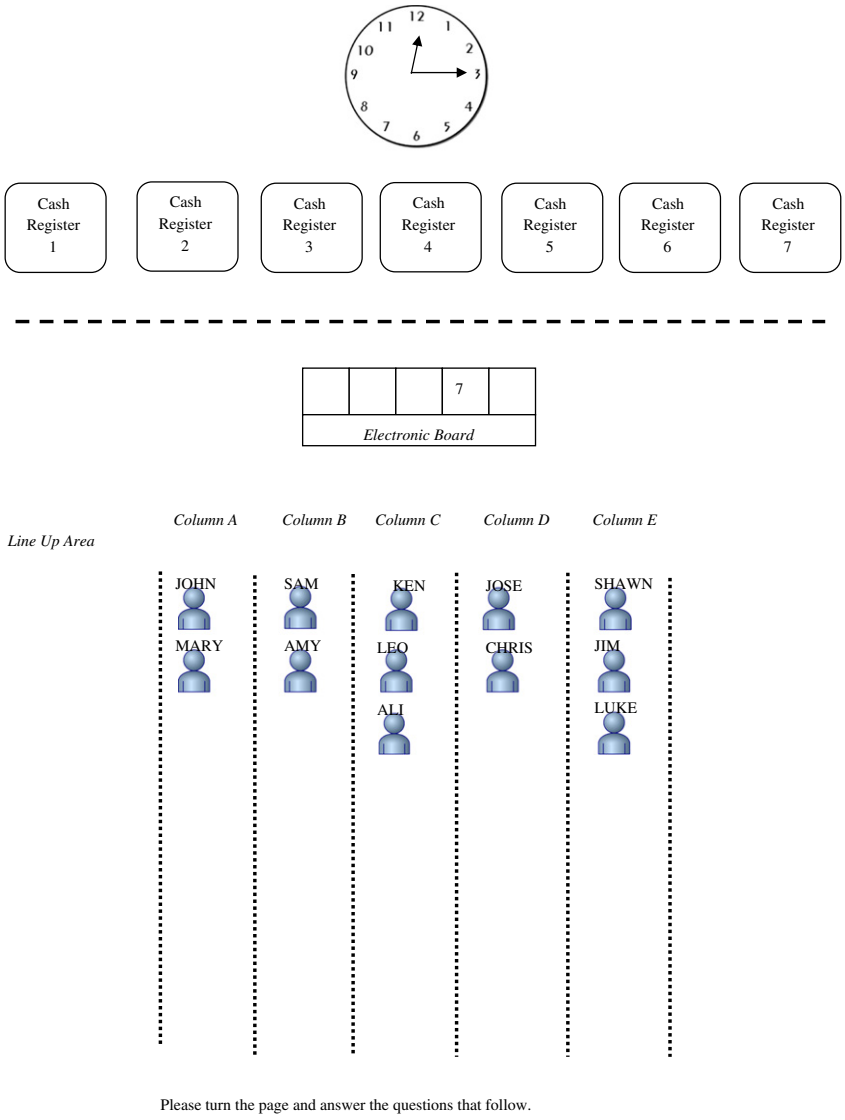

Fig. 1. Sample stimulus for study 1: Visual depiction of lines in supermarket scenario—Practice round.

respondents were again asked to indicate how well they understood the line system anchored on "not at all(1)/very well(7)."

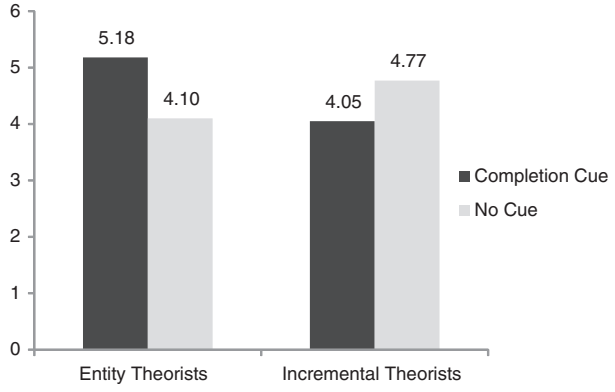

Fig. 2. Study 2: The presence (vs. absence) of completion cues: The salesman study. Task Evaluations.

We expected that entity (vs. incremental) theorists would evaluate the described queue system as preferable to a traditional one-line system. Our expectation rests on the premise that for the end goal of being served at the cash register, movement *within the same column* would serve as a goal progress cue for entity theorists, whereas incremental theorists would be more likely to focus on the process of moving along the *entire* line, which includes both column-wise progress and information about which *column* would be served next (i.e., row-wise movement). Note that while movement within the same column does indeed represent progress towards the goal of being served at the cash register, we expected that it would represent greater progress to entity (vs. incremental) theorists. We also expected that although both theorists would see the same line and would view themselves as positioned in exactly the same place in the line, entity (vs. incremental) theorists would perceive fewer people in line in front of them, thereby perceiving greater progress.

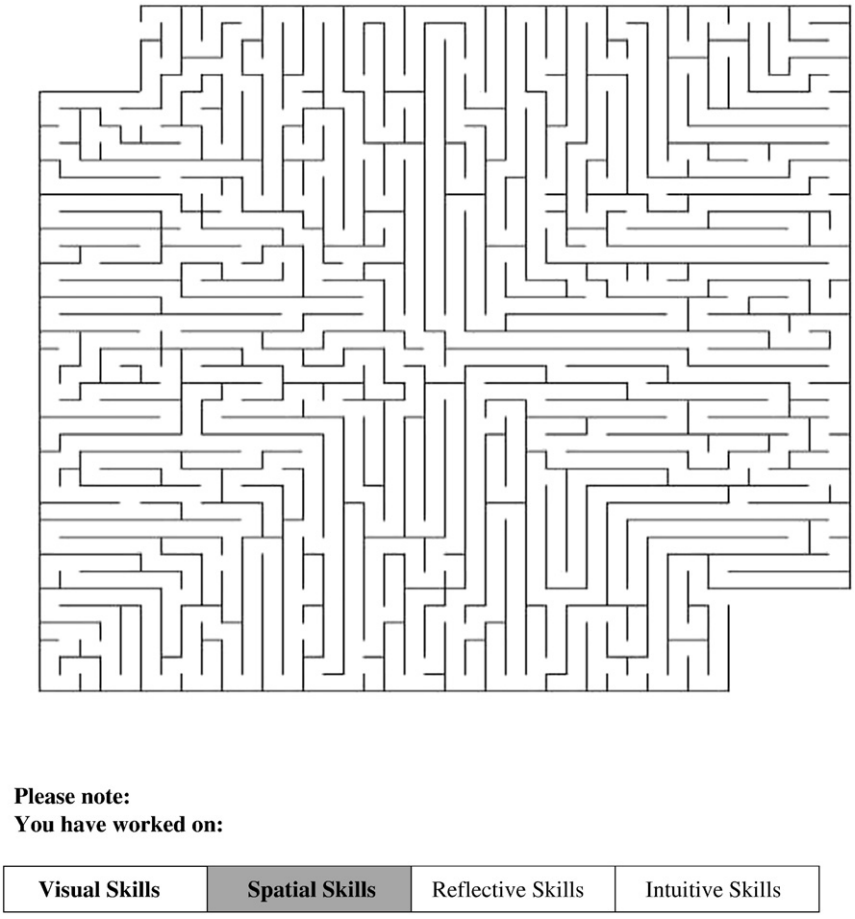

Fig. 3. Sample stimulus for study 3: Visual of maze and learning cue.

Results

Implicit theory

To classify subjects as entity or incremental theorists, we used the procedures for using the implicit theory scale outlined in Levy et al. (1998), such that scores greater than four represented a stronger incremental orientation, while scores less than three represent a stronger entity orientation. Thirty-four and twenty-five participants were successfully classified as incremental and entity theorists respectively (M_{IT} = 4.66, M_{ET} = 2.45; $t(59)$ = 17.12, $p < .001$), while thirty-seven respondents could not be classified as uniquely endorsing an implicit theory orientation and were omitted from further analysis. The omission of subjects that do not endorse a specific implicit theory is a common procedure followed when using the implicit theory scale (e.g., Plaks et al., 2005) and we report the results of analyses using this procedure. However, in order to validate the results with the full sample, we also report the results of a complementary regression analysis in which the implicit theory measure for all respondents served as the continuous independent variable and line or store evaluations served as the dependent variable.

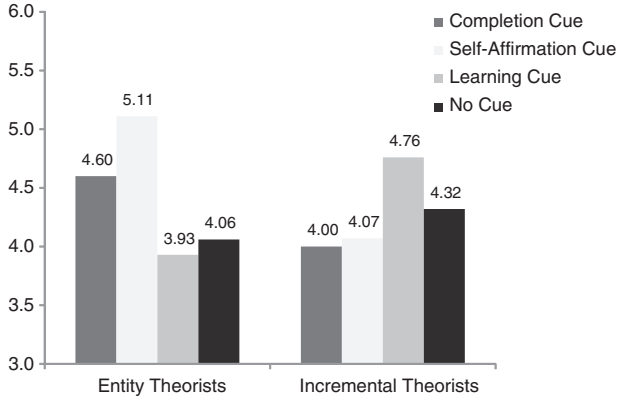

Fig. 4. Study 3: Types of goal progress cues (completion, learning and self-affirmation) and implicit theory: The puzzle book study. Product evaluations.

Practice round

To validate our line system description, we checked whether respondents correctly identified the correct column they should line up in and observed no differences between entity and incremental respondents' choice (M_{ET} = 57%, M_{IT} = 67%, $\chi^2(60) = .96$, $p = .33$). In addition, we also checked whether respondents were able to correctly estimate the number of people to be served before them once they had selected a column. Results indicated that regardless of implicit theory orientation, 73% of respondents estimated the correct length in relation to the column they had selected for themselves,

and there was no difference between entity and incremental theorists in doing so (M_{ET} = 78%, M_{IT} = 72%, χ^2 (60) = .04, p = .84). An assessment of how difficult the line system was to comprehend revealed no reliable differences between theorists (M_{ET} = 2.97, M_{IT} = 3.76, $F(1, 56)$ = 2.31, p = .14). Finally, a direct measure (taken at the end of the study) of how well they understood the line system also did not reveal any differences between theorists (M_{ET} = 5.11, M_{IT} = 5.48, $F(1, 56)$ = 1.83, p = .21). These results indicate that the two theorists did not differ in their comprehension of the line system.

Evaluation of line system

A one-way ANOVA on the three-item attitude index (α =.89) measured after the first five-minute duration scenario revealed a significant impact of implicit theory on respondent evaluation of the line system in comparison to standard line systems, such that entity (vs. incremental) theorists had more favorable attitudes towards the line system (M_{ET} = 4.03, M_{IT} = 3.04, $F(1, 57)$ = 5.18, p = .03). After the second five-minute scenario, entity (vs. incremental) theorists again had more positive attitudes (α = .89; M_{ET} = 4.08, M_{IT} = 3.21, $F(1, 57)$ = 5.18, p = .03). At the end of the task, entity (vs. incremental) theorists maintained their preference for the described line system and evaluated the store more favorably (Line system: α = .97; M_{ET} = 3.73, M_{IT} = 2.70, $F(1, 59)$ =4.54, p = .04; store evaluations: α = .98; M_{ET} = 4.06, M_{IT} =3.21, $F(1, 59)$ = 4.68, p = .04). Note that the degrees of freedom in this study and the subsequent two studies differ for some measures due to missing responses for that specific reported measure. These analyses were rerun by replacing missing values with the mean value for the specific measure and the results were near identical to the original analysis. Please see Table 1 for means for all measures.

Perceptions of progress: Line length

Although both theorists saw the same line and were positioned in exactly the same place, entity (vs. incremental) theorists perceived fewer people waiting to be served before them (M_{ET} = 12.06, M_{IT} = 15.30, $F(1, 57)$ = 3.64, p = .06) in the first five-minute duration scenario. In the next scenario, which represented the line after another five-minute delay, entity (vs. incremental) theorists again perceived greater progress as evidenced by their perception that fewer people were to be served before them (M_{ET} = 3.72, M_{IT} = 8.35, $F(1, 57)$ = 4.74, p = .03). This supports the premise that entity theorists considered movement down the column (rather than the total line) as a cue for progress and perceived greater progress than incremental theorists.

Complementary regression analysis

As noted, we also ran regression analyses using the full sample of respondents in which the implicit theory measure for all respondents served as the independent variable and line evaluations served as the dependent variable. We found, as expected, that implicit theory significantly impacted line evaluations, such that respondents with lower scores on the scale (indicating an entity orientation) evaluated the line system more favorably (β = −.36, $t(94)$ = −1.93, p = .05). An identical analysis for store evaluations revealed similar results, such that respondents with lower scores on the scale, indicating an entity orientation, evaluated the store more favorably (β = −.29, $t(94)$ = −1.88, p = .05; all two-tailed tests). We also regressed the line length perceptions measure on the implicit theory scale measure for all subjects and found converging results (β = 4.03, $t(94)$ = 2.25, p = .03), such that respondents with lower scores on the implicit theory scale (implying an entity theory orientation) evaluated the line as being shorter.

Discussion

In study 1, anticipating that being served at a cash register would represent a naturally-occurring end goal and physical movement would serve as a goal progress cue, we observed that the unique system of the line moving from the left-most column to the right was viewed differently by entity and incremental theorists, who relied on their chronic goal orientation in order to construe goal pursuit. In support of our expectations, we found that entity theorists, and not incremental theorists, preferred the described line system to standard line systems, and that this preference persisted as they moved up the line. Interestingly, despite the fact that both theorists saw the same exact line, entity (vs. incremental) theorists in general thought that the line was shorter (fewer people were waiting in front of them), indicating that entity (vs. incremental) theorists perceived greater progress.

In the next study, we build on this finding in two important ways by: (i) establishing entity theorists' systematic preference for tasks that include completion cues and (ii) extending the generalizability of our results by including goal progress cues that highlight progress by explicitly providing information about the percentage of a task completed.

Study 2: The presence (vs. absence) of completion cues: The salesman study

Design and procedure

The goal of study 2 was to determine the effects of implicit theory on the impact of completion cues on task evaluations. Study 2 was conducted as a 2 (implicit theory: entity vs. incremental) × 2 (goal progress cue: present vs. absent) study. Participants first read an article emphasizing change versus no change (Levy et al., 1998), which served as an implicit theory induction. Participants then learned that they were participating in a computer-based simulated sales exercise in which they would serve as the salespersons of a fictitious company that sells cell phones, telephones, and wireless routers. Participants' task involved completing sales calls to the company's five customers by negotiating with each customer. We specifically programmed five different levels of negotiation ability corresponding to the five customers in order to provide a realistic simulation exercise and to prevent respondents from

developing expectations about the number of rounds of negotiations for each customer. While respondents were informed about the negotiation ability of each of the five customers, there was no prescribed customer call schedule and respondents were free to choose the order of making sales calls to the five customers. Participants' objective was to maximize their sales revenue (i.e., to sell products at the highest price) and earn a virtual commission that was calculated as a percentage of their revenue for each sale. They would also receive an additional virtual bonus (calculated as a percentage of their total sales revenue) if they completed all five sales calls. Respondents closed a deal when the customer accepted their offer. In reality, the computer was programmed to accept the respondent offer after a prefixed number of negotiation rounds, which varied depending on the customer difficulty level, with the most difficult customer engaging in five rounds of negotiations, while the least difficult customer engaged in three rounds of negotiations. Respondents also had the option to exit the negotiation with a customer at any point during the negotiation process, but were reminded that they would lose the commission and bonus and were given the opportunity to resume if they changed their mind. Participants first completed a practice round, followed by the actual rounds of negotiations.

Using Amir and Ariely's (2008) operationalization of goal progress cues that highlight completion, progress bars after each sale informed users about their progress on their sales route (i.e., "You have completed 20% of your route"). No such information was provided to the participants when the completion cue was absent. After each sales round, respondents also learned about their earned commissions. After completing negotiations with all five customers, respondents were informed about their total commission and bonus earnings (if eligible to receive a bonus) and provided measures related to their overall evaluations about the exercise.

Dependent variables

Participants' evaluations of the task by using 7-point scales (bad(1)/good(7), unfavorable(1)/favorable(7), unpleasant(1)/pleasant(7); $\alpha = .92$), how much commission/bonus participants actually earned (information automatically stored in computer), and how much commission/bonus participants recalled earning served as focal measures. Participants also reported how proud they felt after they had closed a deal by indicating their level of agreement with the statement "I am proud to have closed the deal" anchored on 1(strongly disagree)/7(strongly agree) which served as a measure of their favorable accomplishment inferences derived from goal progress cues. Because we expected entity theorists to derive greater positive inferences from receiving progress information in the form of goal progress cues, we anticipated that they would derive greater pride after encountering goal progress cues than incremental theorists. Participants also indicated, on a seven-point scale, their perception of the perceived negotiation ability of the five "customers," which served as a validation of the programmed customer negotiation ability. After each sale, participants were also asked to indicate their perceptions of progress on a seven-point scale item ("By closing this deal, I have made progress towards my goal of earning the bonus;" strongly disagree(1)/strongly agree(7)). To validate the implicit theory manipulation, respondents completed the Implicit Theory General World Order Scale (Levy et al., 1998).

Data was also captured on the number of completed negotiation rounds and the time taken to complete the study (in minutes, from the start of the practice round until the completion of the last round). In addition, participants indicated agreement with statements (anchored by "strongly disagree(1)/strongly agree(7)") regarding the clarity of the instructions, commission and bonus calculations, and negotiation screens; perception of the fairness level of the negotiations/commissions/bonuses, how realistic the study/negotiations/rules were, perceived effort on the sales task; and for participants who saw goal progress cues, their perception of the attention given to the goal progress cues. None of these non-focal measures were significantly impacted by the predictor variables ($ps > .45$) and will not be discussed further.

Results

Manipulation and other checks

Participants primed with an incremental theory reported higher scores on the implicit theory scale (Levy et al., 1998) than those primed with an entity theory ($\alpha = .91$; $M_{IT} = 3.65$, $M_{ET} = 3.17$; $F(1, 103) = 6.62$, $p = .01$), thus validating the implicit theory manipulation. As expected, when completion cues were present, entity (vs. incremental) theorists reported higher levels of pride ($M_{ET} = 5.75$, $M_{IT} = 4.83$; $F(1, 103) = 9.92$, $p = .002$). Entity theorists also reported higher levels of pride when the completion cue was present (vs. absent) ($M_{ET\text{-}Cue} = 5.75$, $M_{ET\text{-}NoCue} = 5.24$; $F(1, 102) = 3.61$, $p = .06$). Respondents' reports of the perceived customer negotiation ability were consistent with the programmed negotiation ability of each customer (See Fig. 2). As expected, while respondents recognized these different customer characteristics (all pairwise ts were $p < .05$), these differences did not impact any of the dependent measures and hence will not be discussed further.

Task evaluations

A 2 × 2 ANOVA on the task evaluation index ($\alpha = .92$) revealed a significant two-way interaction between implicit theory and the presence/absence of the completion cue ($F(1, 101) = 9.45$, $p = .003$). Further analysis revealed that, as anticipated, when the completion cue was present, entity theorists evaluated the task more favorably than incremental theorists ($M_{ET} = 5.18$, $M_{IT} = 4.05$; $F(1, 101) = 7.45$, $p = .01$), thereby supporting H1a. As expected in H1b, entity theorists evaluated the task significantly more favorably in the presence (vs. absence) of the completion cue ($M_{ET\text{-}Cue} = 5.18$, $M_{ET\text{-}NoCue} = 4.10$; $F(1, 101) = 8.08$, $p = .01$). When the completion cue was absent, we did not observe a significant

difference between the two theorists' task evaluations (M_{ET} = 4.10, M_{IT} = 4.77; $F(1, 101) = 2.61$, $p = .11$).

Goal performance

We also analyzed the commission and bonus earned by respondents in order to test whether the presence of completion cues had differential effects on theorists' performance. The ANOVA on the commission earned revealed a significant interaction between implicit theory and the presence/absence of completion cues ($F(1, 103) = 4.67$, $p = .03$). Specifically, entity theorists earned a lower commission than incremental theorists when they saw the completion cue ($M_{ET\text{-}Cue}$ = 112.53, $M_{IT\text{-}Cue}$ = 120.20; $F(1, 103) = 2.67$, $p = .06$). Entity theorists also earned a lower commission in the presence (vs. absence) of the completion cue ($M_{ET\text{-}Cue}$ =112.53, $M_{ET\text{-}no\text{-}Cue}$ = 125.62; $F(1, 103) = 7.10$, $p = .01$). Incremental theorists' commission earned was unaffected by the presence versus absence of the completion cue ($M_{IT\text{-}Cue}$ = 120.20, $M_{IT\text{-}NoCue}$ = 116.92; $p = .11$). No other effects were significant.

Notably, the difference between the actual commission earned and the recalled commission revealed an interesting insight to entity theorists' overestimation of their own performance. A two-way ANOVA on the difference variable between actual and recalled commission revealed a marginally significant interaction between respondent implicit theory and the presence/absence of the completion cue ($F(1, 98) = 2.93$, $p = .07$). Further analysis revealed that entity (vs. incremental) theorists recalled receiving a higher commission than they had actually earned in the presence of the completion cue ($M_{ET} = -10.89$, M_{IT} = 4.49; $F(1, 98) = 3.85$, $p = .05$), but this difference disappeared in the absence of the completion cue ($F < 1$). Also, entity theorists recalled a higher commission than they had actually earned when the completion cue was present (vs. absent) ($M_{ET\text{-}Cue} = -10.89$, $M_{ET\text{-}NoCue}$ = 11.51; $F(1, 98) = 9.41$, $p = .003$), but no such difference was observed for incremental theorists ($F < 1$). Thus, in the presence of completion cues, entity theorists may be incorrectly gauging their performance as better than it actually is, as is evident in the results of the difference between their recalled and actual commission earned. Respondents' bonus earnings were also subjected to the same analysis and produced near identical results. Please see Table 2 for means for all measures.

Progress perceptions

An ANOVA on the perceived progress index for all rounds (calculated by averaging the reported perceived progress for each round) revealed a significant two-way interaction ($F(1, 102) = 7.39$, $p = .01$). Decomposing the interaction revealed that in the presence of the completion cue, entity (vs. incremental) theorists perceived greater progress (M_{ET} = 6.13, M_{IT} = 5.36; $F(1, 102) = 9.93$, $p = .002$). Further, entity theorists perceived greater progress in the presence (vs. absence) of the completion cue ($M_{ET\text{-}Cue}$ =6.13, $M_{ET\text{-}NoCue}$ = 5.53; $F(1, 102) = 7.24$, $p = .01$). No other effects were significant ($F < 1$).

Table 1
Study 1: When physical movement serves as a goal progress cue: The queue study.

Dependent measures	Entity theorists	Incremental theorists
Evaluation of the line system after first five minute duration	4.03	3.04
Evaluation of the line system after second five minute duration	4.08	3.21
Overall evaluation of the line system	3.73	2.70
Evaluation of the store	4.06	3.21
Line length estimation after first five minute duration (number of persons waiting in line)	12.06	15.30
Line length estimation after second five minute duration (number of persons waiting in line)	3.72	8.35

Discussion

In study 2, we found support for our proposition by demonstrating that respondent implicit theory of change impacts how completion cues affect task evaluations. Entity theorists, as compared to incremental theorists, inferred greater progress and preferred the task that included the completion cue (H1a). Entity theorists also preferred the task when it included completion cues in comparison to when these cues were absent (H1b). Entity theorists' performance was adversely affected in the presence of completion cues, yet, they tended to overestimate their performance. In contrast, incremental theorists' evaluations and performance were largely unaffected by the presence/absence of the completion cue.

Studies 1 and 2 provide evidence that entity theorists prefer tasks that include completion cues. Incremental theorists are unaffected by the presence of goal progress cues that highlight completion because incremental theorists are known to internally monitor progress towards accomplishing the goal (Dweck & Leggett, 1988), and thus, external completion cues are not relevant for them. The question remains then, what would incremental theorists prefer during goal pursuit – in other words, might there be goal progress cues that motivate incremental theorists? In the next study, we seek to demonstrate that unlike goal progress cues that highlight *completion*, goal progress cues that highlight *learning* do carry meaning and relevance for incremental theorists, and as such, are preferred by them.

We base this theorizing on the extant literature that suggests that incremental theorists favor learning goals and strive to *improve* their competence, not simply signal favored outcomes (Dweck & Leggett, 1988). Therefore, tasks that provide learning cues such as feedback on the strategies used or skills learned during goal pursuit (e.g., feedback on the skill learned in a language program) are more likely to satisfy incremental theorists' learning goals (compared to mere completion feedback). Thus, goal progress cues that provide information about progress on learning should be preferred by incremental theorists. Consistent with this reasoning, we expect that in comparison to entity theorists, incremental theorists are likely to evaluate tasks that include learning cues more favorably because these help to inform incremental theorists about the

extent to which their learning goals have been met. Stated formally,

H2a. Incremental (vs. entity) theorists will evaluate tasks more favorably in the presence of goal progress cues that highlight learning.

H2b. Incremental theorists will evaluate tasks that include learning goal progress cues more favorably than tasks that do not include these cues.

Thus, the next study extends the findings of studies 1 and 2 by demonstrating that incremental theorists have a systematic preference for goal progress cues that highlight learning in comparison to goal progress cues that highlight progress on completing a task. Importantly, in study 3 we also seek to provide process level support for our underlying assumption that the effect of completion cues, as evidenced in studies 1 and 2, arises because these cues serve as self-affirmation signals to entity theorists but not to incremental theorists. Preliminary evidence for this assumption is indicated by the finding in Study 2 that entity theorists felt greater pride in the presence of completion cues (compared to no cues and to incremental theorists). With the next study, we provide a direct test of entity theorists' derived self-affirmation assumption by formally manipulating goal progress cue type: completion, self-affirmation, and learning cues. If entity theorists do indeed infer self-validation from goal progress cues that highlight progress towards completing a task, their responses to cues that actually provide explicit self-affirmation/validation should be similar to their responses to completion cues, and at the same time, they should be unaffected by goal progress cues that highlight learning. In contrast, incremental theorists should remain unaffected by both explicit self-affirmation cues and completion cues because they are not expected to rely on external cues as a signal of self-validation. Incremental theorists should thus evaluate the task more favorably only when they encounter goal progress cues that highlight learning.

Study 3: Types of goal progress cues (completion, learning, and self-affirmation) and implicit theory: The puzzle book study

Procedure

Three hundred and sixty-two respondents were assigned to a 2 (implicit theory: entity vs. incremental) × 4 (goal progress cue type: completion, learning, self-affirmation, no cue) between-subjects design. First, implicit theory was manipulated by using proverbs that emphasized change versus no change (Poon & Koehler, 2006). Each subject was then presented with a booklet of four mazes taken from commercially available puzzle books. All participants were informed that mazes are (ostensibly) known to help improve visual, spatial, reflective, and intuitive skills. Respondents were also informed that they would be given 1 min for each maze, and would answer the questions that followed. After each maze, participants in the completion cue condition saw progress bars that informed them about how much of the task they had completed in percentage terms. Participants in the learning cue condition saw a bar after each maze that informed them about the specific skill that they had worked on while participants in the self-affirmation cue condition saw progress bars after each maze that provided the following positive phrases "great job," "way to go," "great going," and "you did great," after each maze (see Fig. 3). Participants in the no cue condition saw no progress bars.

Dependent variables

After completing all four mazes, participants evaluated the maze booklet on the following three 7-point scales (bad(1)/good(7), negative(1)/positive(7), unfavorable(1)/favorable(7); $\alpha = .95$), and indicated how satisfying the task was (not satisfying(1)/satisfying(7)) and the price they were willing to pay for the maze booklet (open ended). Participants also indicated the extent of their agreement with the following statements: "I think I did really well on this task," and "I think I'm really good at mazes," (strongly disagree(1)/strongly agree(7)). We expected that entity theorists' perceptions of ability would be similar for the completion and self-affirmation cues, but taken together, these would be higher than their perceptions for the learning and no cue conditions, thus providing additional support for the expectation that entity theorists infer favorable judgment about themselves from completion cues. In addition, we also expected that entity theorists', but not incremental theorists' perceptions of ability would mediate the effect of goal progress cues on maze evaluations, thereby providing support for our posited process. Participants in the three goal progress cue conditions also indicated their agreement with the following statement: "The feedback bars kept me motivated to complete this task." We expected that entity theorists would find the completion and

Table 2
Study 2: The presence (vs. absence) of completion cues: The salesman study.

Dependent measures	Entity theorists		Incremental theorists	
	Completion cue	No cue	Completion cue	No cue
Task evaluations	5.18	4.10	4.05	4.77
Progress perception	6.13	5.53	5.36	5.70
Goal performance:				
Commissions earned	112.53	125.62	120.20	116.92
Difference between recalled and actual commissions	−10.89	11.51	4.49	7.87
Bonus earned	94.21	98.49	98.56	98.08

self-affirmation (vs. learning) cues more motivating, while incremental theorists would find the learning cue most motivating, thus supporting the proposed underlying process. Finally, respondents indicated their familiarity with mazes and completed the Implicit Theory General World Order Scale (Levy et al., 1998).

Results

Implicit theory

A 2 by 4 ANOVA on the implicit theory scale revealed that participants primed with an incremental (vs. entity) theory reported higher scores (α = .83; M_{IT} = 3.48, M_{ET} = 3.19; $F(1, 353) = 11.03$, p = .001), thus validating the implicit theory induction. Respondent familiarity with mazes was invariant across conditions ($p > .42$).

Evaluations of maze booklet

A 2 × 4 ANOVA on the maze booklet evaluation index (α = .94) revealed a significant two-way interaction between implicit theory and goal progress cue type ($F(3, 353) = 6.21$, $p < .001$). Further analysis revealed a main effect of goal progress cue type only for entity theorists ($F(3, 353) = 5.08$, p = .002). Investigating this main effect for entity theorists revealed that as expected, entity theorists' evaluations were similar for the completion and self-affirmation cues ($M_{Completion}$ = 4.60, $M_{Self\text{-}Affirmation}$ = 5.11, p = .13) (See Fig. 4). Planned contrasts revealed that entity theorists' evaluation in the completion and self-affirmation cue conditions together (M = 4.86) was more favorable than that for the learning cue condition ($M_{ET\text{-}Learning}$ = 3.93; $F(1, 353) = 10.14$, p = .002) and the no cue condition ($M_{ET\text{-}No\ Cue}$ = 4.06; $F(1, 353) = 7.04$, p = .01). In contrast, incremental theorists' evaluations were more favorable for the learning cue ($M_{IT\text{-}Learning}$ = 4.76) as compared to the completion cue ($M_{IT\text{-}Completion}$ = 4.00; $F(1, 353) = 5.38$, p = .02) and the self-affirmation cue ($M_{IT\text{-}Self\text{-}Affirmation}$ = 4.07; $F(1, 353) = 4.14$, p = .04), but not for the no-cue condition ($M_{IT\text{-}NoCue}$ = 4.32; $F(1, 353) = 1.67$, p =.19). Notably, incremental theorists evaluated the mazes more favorably when they saw learning cues as compared to all other cue-types ($M_{IT\text{-}Learning}$ = 4.76, $M_{IT\text{-}AllOtherCues}$ = 4.13; $F(1, 353) = 5.29$, p = .02). Additional planned contrasts supported the predicted differences between entity and incremental theorists for the different cue types. Specifically, while entity (vs. incremental) theorists evaluated the task more favorably for both the completion and self-affirmation cue conditions (completion cue: M_{ET} = 4.60, M_{IT} = 4.00; $F(1, 353) = 3.36$, p = .05; self-affirmation cue: M_{ET} = 5.11, M_{IT} = 4.07; $F(1, 353) = 9.24$, p = .003), the opposite was true for the learning cue (M_{ET} = 3.93, M_{IT} = 4.76; $F(1, 353) = 6.21$, p = .01). For the no-cue condition, entity and incremental theorists' evaluations were similar (M_{ET} = 4.06, M_{IT} = 4.32; p = .46). An identical analysis of respondent satisfaction with the maze product revealed a similar pattern of results, thus suggesting that while entity theorists were more satisfied with tasks that included completion and self-affirmation cues, incremental theorists were more satisfied with the task when it included the learning cue (please see Table 3a for all means and Table 3b for means for all contrasts).

Willingness to pay

Respondents' reported willingness to pay (WTP) in dollars for the maze book was subjected to an identical analysis. The interaction between the goal progress cue types and implicit theory was significant ($F(3, 353) = 3.49$, p = .02). Entity theorists' WTP was similar for the completion and self-affirmation cues ($M_{Completion}$ = \$3.83, $M_{Self\text{-}Affirmation}$ = \$4.09, p = .74), but their WTP was higher for the combined completion and self-affirmation cue conditions in comparison to the other cue conditions ($M_{ET\text{-}Completion\&SelfAffirmation}$ = \$3.96, $M_{ET\text{-}Learning\&No\text{-}Cue}$ = \$2.88; $F(1, 353) = 3.80$, p = .05). In contrast, incremental theorists reported higher WTP for the learning cue than for the average of all other cue-types ($M_{IT\text{-}Learning}$ = \$4.33, $M_{IT\text{-}AllOtherCues}$ = \$3.18; $F(1, 353) = 6.10$, p = .01).

Perceptions of ability

Respondents' perception of how well they did and their perception of how good they were at mazes was collapsed into a single measure of their perception of ability (α = .91). The 2 by 4 ANOVA on this index revealed a significant interaction between the predictor variables ($F(3, 353) = 3.41$, p = .05) as well as main effects of implicit theory ($F(1, 353) = 4.46$, p = .03) and the goal progress cue condition ($F(1, 353) = 3.29$, p = .02). Decomposing these results revealed that entity (vs. incremental) theorists' ability perceptions were significantly higher for the goal progress cues that highlighted completion and self-affirmation (M_{ET} = 4.20, M_{IT} = 3.48, $F(1, 353) = 10.75$, p = .003). Further analysis also revealed a main effect of

Table 3a
Study 3: Types of Goal progress cues (completion, learning and self-affirmation) and implicit theory: The puzzle book study.

	Entity theorists				Incremental theorists			
Dependent measures	Completion cue	Self-affirmation cue	Learning cue	No cue	Completion cue	Self-affirmation cue	Learning cue	No cue
Product evaluations	4.60	5.11	3.93	4.06	4.00	4.07	4.76	4.32
Satisfaction	4.83	4.76	4.07	3.97	3.94	3.67	4.71	4.26
Perceptions of ability	4.47	3.93	3.67	3.25	3.59	3.36	3.62	3.43
Willingness to pay	3.83	4.09	2.98	2.78	3.16	2.42	4.33	3.95
Goal progress cue perceptions:								
Motivating	3.87	3.85	3.42	–	3.00	3.26	3.84	–

Table 3b
Study 3: Types of Goal progress cues (completion, learning, and self-affirmation) and implicit theory: The puzzle book study.

Dependent measures	Entity theorists		Incremental theorists	
	Average of completion and self-affirmation cue	Average of learning and no cue	Learning cue	Average of completion, self-affirmation, and no cue
Product evaluations	4.86	4.00	4.76	4.13
Satisfaction	4.80	4.02	4.71	4.00
Perceptions of ability	4.20	3.46	3.62	3.46
Willingness to pay	3.96	2.88	4.33	3.18

goal progress cues only for entity theorists ($F(3, 353) = 5.25$, $p = .001$). Planned contrasts revealed that entity theorists perceived similar ability for the goal progress cues that highlighted completion and self-affirmation ($M_{\text{Completion}} = 4.47$, $M_{\text{Self-Affirmation}} = 3.93$, $p = .08$), and they perceived greater ability for the completion and self-affirmation cues than for the other two cue conditions ($M_{\text{ET-Completion\&SelfAffirmation}} = 4.20$, $M_{\text{ET-Learning\&No-Cue}} = 3.46$; $F(1, 353) = 11.73$, $p = .001$). Interestingly, incremental theorists' ability perceptions were unaffected by the type of goal progress cues they encountered ($p = .80$).

Goal progress cue perceptions

A 3 by 2 ANOVA on how motivating the goal progress cues were revealed a significant two-way interaction between implicit theory and goal progress cue ($F(2, 275) = 3.25$, $p = .04$). Planned interaction contrasts revealed a significant interaction between implicit theory and the contrast between the average of the completion and self-affirmation cue conditions and the learning cue condition ($F(1, 275) = 6.14$, $p = .01$). Decomposing this interaction revealed that while entity theorists found the completion and self-affirmation cues more motivating ($M_{\text{ET-Completion\&Self-Affirmation}} = 3.86$, $M_{\text{ET-Learning}} = 3.42$, $F(1, 275) = 4.67$, $p = .08$), incremental theorists found the learning cue more motivating than the other two cues ($M_{\text{IT-Learning}} = 3.84$, $M_{\text{IT-Completion\&Self-Affirmation}} = 3.13$; $F(1, 275) = 4.67$, $p = .05$).

Moderated mediation analysis

We expected that entity but not incremental theorists would derive favorable ability inferences from goal progress cues, and this favorable inference of ability would drive their favorable product evaluations. In order to test this proposed process, we conducted a moderated mediation analysis using procedures and software described and provided by Hayes (2013). Results revealed that, controlling for the mediator (perceptions of ability), the effect between the independent variable (goal progress cues x implicit theory) and the dependent variable (maze evaluations), which had been significant in the absence of the mediator, was no longer significant, ($\beta = .04$, $t(353) = 0.29$, $p = .77$). In addition, the relationship between the mediator (perceptions of ability) and the dependent variable (maze evaluations) was significant ($\beta = .41$, $t(353) = 7.47$, $p < .001$). We conducted a formal test of the significance of the indirect effect by applying Bootstrap procedures with 5000 resamples (Preacher, Rucker, & Hayes, 2007). For entity theorists, using a 95% confidence interval, zero was not included in the provided range (95% CI = −.232 to −.066). However, for incremental theorists, the same bootstrap procedure resulted in an inclusion of zero (95% CI = −.121 to .051). We also ran an identical bootstrap analysis to check whether perceptions of ability mediated the effects of implicit theory on maze evaluations for the different goal progress cues. As expected, for the completion and the self-affirmation cues, zero was not included in the provided range (completion cue: 95% CI = .090 to .478; self-affirmation cue: 95% CI = .026 to .289). However, for the learning cue condition, zero was included (95% CI = −.143 to .196). Therefore, as expected, perceptions of ability mediated the effects of goal progress cues on maze evaluations only for entity and not incremental theorists, and this was especially true for the completion and self-affirmation cues.

Discussion

In study 3, across different measures (evaluations, willingness to pay, and satisfaction), we found converging support for the premise that while entity theorists responded more favorably to completion cues, incremental theorists preferred the task when it included learning cues compared to other types of goal progress cues, thereby supporting hypotheses 1 and 2. We also noted that goal progress cues that provided self-affirmation in the form of explicit positive validation impacted entity theorists very similarly to completion cues. All contrasts between these two conditions for entity theorists, regardless of the focal variable being considered, were not significant. This finding serves as important support for the conceptualization that entity theorists infer self-validation from goal progress cues that highlight completion.

General discussion

In this research, we suggest and find that cues that highlight goal progress do not have uniform effects on task evaluations and goal pursuit for all individuals. In three different consumer contexts, using different methods to elicit implicit theories and different kinds of goal progress cues, we show that the effects of goal progress cues on important downstream measures such as satisfaction and performance are directly impacted by the goal pursuer's implicit theory orientation. Specifically, we show that entity theorists, who are driven to signal favorable judgment about abilities and competence, perceive greater

progress and evaluate tasks more favorably in the presence of goal progress cues that highlight the extent to which a task has been completed. We provide evidence of the underlying process by establishing that entity theorists derive more favorable inferences from completion cues, as evidenced by their perceptions of greater progress in completing a task (study 1 and 2), perceptions of better performance than actually observed (study 2), and self-validation (study 3). In contrast, incremental theorists, who are driven by learning goals, are impacted only by the presence of goal progress cues that highlight learning during a task.

Our work makes two important contributions. First, we make significant contributions to the implicit theory literature by highlighting the important differential effects of the focus on performance versus learning for entity and incremental theorists respectively in goal-oriented tasks. We show that entity theorists seek evidence of favorable outcomes that is supported by tasks that include cues highlighting progress towards completing a goal. Thus, in identifying completion cues as self-validating for entity theorists, we add to the growing literature in marketing that entity theorists use marketplace cues to signal favorable information about themselves. Notably, we show that while the effect of goal progress cues has positive evaluative implications, it may in fact hurt entity theorists' performance on the very tasks that they seem to like more on account of the inclusion of completion cues. Second, we contribute to the goal progress literature and suggest that the presence of progress feedback may be perceived differently by different individuals depending on their implicit theory orientation.

As our results show, completion feedback may hurt goal accomplishment for at least one group of individuals (i.e., entity theorists). The observation that entity theorists' performance was adversely impacted in study 2 by the presence of completion cues, although unanticipated, is consistent with extant research on implicit theory. For example, entity theorists, in a quest to satisfy performance goals, may disengage from a task (Dweck & Leggett, 1988, p 262) or self-handicap, resulting in lower levels of end-goal accomplishment and actual performance (Ommundsen, 2001). Likewise, in information processing tasks, entity theorists have been shown to cease further processing of information once they have inferred trait judgments (Hong, Chiu, Dweck, & Sacks, 1997; McConnell, 2001). Thus, based on extant literature, it is not surprising that completion cues simultaneously satisfy entity theorists' performance goals and engender diminished performance on the task.

The current findings make substantive contributions to the area of customer satisfaction and service provider evaluation. Achieving satisfied customers is the endeavor of most marketers and businesses, and customer satisfaction continues to be a primary concern for all marketers. One of the important determinants of customer satisfaction is the degree of progress consumers think they are making during a consumption experience (Bagchi & Li, 2011), especially in service industries such as retail, banking, and airlines. For example, the progress a shopper makes through a Starbucks queue system has been shown to impact subsequent intention to purchase; perceptions of long lines and slow progress have "scared off" customers from retail stores such as Walmart and Trader Joe's (Barbaro, 2007); and retailer queue wait-times have been shown to be the number one shopper complaint (Lempert, 2012). Therefore, several firms endeavor to provide indications of progress to their customers with the assumption that consumers appreciate this progress information. However, as our research shows, goal progress information does not have the same effect on all consumers. Only entity and not incremental theorists are likely to evaluate the service provider more favorably when it provides progress information. Therefore, marketers should consider their consumers' implicit theory orientation when designing service processes.

Consumer implicit theory, while often studied as a trait variable, i.e., an enduring individual level difference variable, is also increasingly seen as a variable that marketers and policy makers can influence. For instance, print advertisements (Yorkston, Nunes, & Matta, 2010) and videos of television shows and popular movies (Jain et al., 2009) have been shown to be effective in temporarily inducing a specific implicit theory. Similarly, Mathur, Jain, Hsieh, Lindsey, and Maheswaran (2013) induced implicit theory orientations in their subjects by exposing subjects to a list of words that were synonyms of fixedness (for an entity theory) or changeability (for an incremental theory). These findings offer direction to marketers on how to elicit suitable implicit theories among their customers through marketing stimuli, contingent on whether the product or service being marketed would benefit from a particular implicit theory induction. For example, customers at theme parks often face long queues for each ride, restaurant patrons often endure long waits for tables, supermarket customers often wait for their number to be called at the deli counter, and even patients often wait their turn in crowded reception rooms. Our research would suggest a variety of practical options that these service providers could implement to increase satisfaction, or at least reduce dissatisfaction with the wait. Explicit cues of completion (e.g., progress markers on a theme park ride line; visual estimates of progress toward estimated wait time in DMV offices) would increase satisfaction for entity theorists, while not reducing satisfaction for incremental theorists. Clever signage around the queue or venue could further temporarily induce an entity theory mindset for incremental theorists, which would subsequently increase satisfaction for this segment. For example, imagine a sign along a bank queue with a clever play on "You cannot teach an old dog new tricks" affirming customers' wait on the bank teller line (perhaps for older consumers who don't do their banking online). Therefore, while product and service designers should consider the implicit theory orientation of their customers when designing consumption experiences, our research also offers some guidance on when a particular implicit theory orientation may benefit both the marketer and customer by enhancing satisfaction, task completion, goal progress, and performance.

Our research supports a self-affirmation process explanation for entity theorists, as evidenced by ratings of pride in study 2 and reaction to self-affirmation cues in study 3. We recognize

that the queue scenario employed in study 1 may not generate feelings of pride or ego enhancement. However, extant literature has shown that when individuals are motivated to self-affirm, this motivation may influence the way they interpret situations and understand information (e.g. Townsend & Sood, 2012). Thus, we suggest that in study 1, entity theorists' motivation to self-affirm may have led them to interpret the perceived progress they inferred from goal progress cues in a biased way in order to generate positive inferences (e.g., that things are going their way; they are having a good day). Such general positive inferences are likely to be understood and interpreted as self-affirmation information, as would be predicted by the "affect as information" heuristic (Pham, 1998). While we can only speculate on this, we encourage future research to explore this connection; indeed, the likelihood that entity theorists tend to rely more on affect as information remains a fruitful area for future research.

Our research would also suggest that implicit theory may always be a determinant of the effect of goal progress cues on satisfaction and achievement. However, several task and contextual factors may impact when individuals are more versus less likely to rely on their implicit theory. For instance, extant findings in implicit theory research have shown that individuals tend to rely on their implicit theories as a coping strategy when they encounter challenging or demanding tasks that have a high chance of failure (Dweck, Chiu, & Hong, 1995, p 273). Thus, it would seem that when goal-related tasks are considered enjoyable and not demanding, it is possible that the effects of implicit theory may be limited and thus, goal progress cues may not have differential effects on different individuals. Contextual information about recovery from failure may also impact theorists differently (e.g. Plaks et al., 2005). Recovery from failure is also known to be an important factor that may challenge an entity theory, but may confirm an incremental theory, especially in a goal pursuit context. Thus, goal-oriented tasks that relate to recovery after failure may be more susceptible to an entity theorist's efforts to restore their challenged entity theory. These posited task-related conditions may serve as meaningful areas for examining the interactive effects of implicit theory and goal progress cues in future research.

Appendix A. Supplementary data

Supplementary data to this article can be found online at http://dx.doi.org/10.1016/j.jcps.2014.03.003.

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