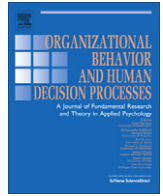


Contents lists available at [SciVerse ScienceDirect](http://www.sciencedirect.com)

## Organizational Behavior and Human Decision Processes

journal homepage: [www.elsevier.com/locate/obhdp](http://www.elsevier.com/locate/obhdp)

## When thinking about goals undermines goal pursuit

Ayelet Fishbach<sup>a,\*</sup>, Jinhee Choi<sup>b,\*</sup><sup>a</sup>Booth School of Business, University of Chicago, 5807 S. Woodlawn Ave., Chicago, IL 60637, United States<sup>b</sup>Korea University Business School, Anam-dong, Seongbuk-gu, Seoul 136-701, Republic of Korea

## ARTICLE INFO

## Article history:

Received 9 September 2010

Accepted 20 February 2012

Available online 22 March 2012

Accepted by Madan Pillutla

## Keywords:

Goals

Motivation

Self-regulation

Extrinsic/intrinsic

Instrumentality

## ABSTRACT

We explore how attending to the goals an activity achieves (i.e., its instrumentality) impacts the motivation to pursue the activity. We propose that the focus on the activity's instrumentality renders the activity more valuable yet its experience less positive. Because experience is mainly salient while pursuing (vs. planning) an activity, attending to the activity's instrumentality increases the intention to pursue the activity but decreases how persistently individuals pursue it. We document this impact of attending to goals on increased intentions but decreased persistence on various activities, from a exercising on a treadmill (Study 1) and creating origami (Study 2) to dental flossing (Study 3) and practicing yoga (Study 4).

© 2012 Elsevier Inc. All rights reserved.

## Introduction

To motivate themselves and others, individuals often attend to the goals an action achieves (Carver & Scheier, 1998; Heath, Larrick, & Wu, 1999; Higgins, 1987; Locke & Latham, 1990). When individuals consider the goals they achieve by pursuing the action, for example, increased flexibility through yoga or improved dental health through flossing, their intentions to pursue that activity should rise. However, other, unintended consequences might also arise from attending to goals. In particular, the focus on an activity's instrumentality can also affect an individual's experience while pursuing the activity, potentially making this goal-oriented activity seem more demanding. Such unintended consequences may further influence pursuit of the activity beyond forming intentions.

Accordingly, this article explores the distinct impact the emphasis on an activity's instrumentality has on forming intentions and on actual pursuit of the activity. For example, we ask whether attending to the many benefits of practicing yoga distinctly impacts the intention to start and adhere to a yoga routine. We distinguish between two types of benefits individuals gain from pursuing an activity: internal benefits that come while and are part of pursuing the activity, and external benefits that come at a separate time and define the goals the activity achieves, namely, the activity's instrumentality. For example, working out, reading the newspaper, and doing pottery are activities individuals

often enjoy pursuing; thus intrinsic benefits derive from pursuing them. But these activities also offer external benefits that materialize after the activities are completed, including staying in shape, being well informed, and having a decorated home. These external benefits constitute the activities' "goals," that is, the desired outcomes of performing the activity (Fishbach & Ferguson, 2007; Kruglanski, 1995; notably, this definition of goals does not imply performance standards, e.g., Locke & Latham, 1990). When individuals pursue an activity mainly for the sake of pursuing it, the activity is *experiential*—the intrinsic experience forms its end. When individuals pursue an activity mainly as a means to an end, the activity is *instrumental* for achieving the end and is extrinsically motivated (Choi & Fishbach, 2011; Shah & Kruglanski, 2002).

Importantly, whereas the degree of activities' instrumentality varies naturally, with some activities being more instrumental than others (e.g., reading a car manual vs. a newspaper), whether an activity appears more or less instrumental often depends on contextual cues that focus attention on the goals the activity achieves vs. the positive experience itself. For example, a person can read a newspaper to relax, in which case the experience of pursuing the activity is rewarding, or she can read a newspaper to impress, in which case the activity is instrumental and its benefits will materialize at a separate point in time, during a future social gathering.

This distinction between experiential and instrumental activities echoes previous research on extrinsic and intrinsic motivation (Csikszentmihalyi, 1975; Deci & Ryan, 1985; Harackiewicz & Sansone, 1991; Higgins & Trope, 1990; Lepper, 1981; Rawsthorne & Elliot, 1999; Shah & Kruglanski, 2000). Experiential activities have no significant rewards (i.e., external goals) to achieve and

\* Corresponding authors.

E-mail addresses: [ayelet.fishbach@chicagobooth.edu](mailto:ayelet.fishbach@chicagobooth.edu) (A. Fishbach), [jinheechoi@korea.ac.kr](mailto:jinheechoi@korea.ac.kr) (J. Choi).

people are intrinsically motivated to pursue them for their own sake. In contrast, instrumental activities do have external rewards (or goals) to achieve and people are extrinsically motivated to reach them. Notably, however, goals (unlike other extrinsic incentives) are not conditioned on the activity by another agent but are mostly self-generated. Our distinction is also different from the content-based definition of intrinsic and extrinsic motivations, according to which an action is intrinsically motivating if it achieves specific contents such as autonomy, competence, relatedness, and self-determination (Deci & Ryan, 1985). Rather than referring to different contents, we offer a distinction between pursuing experiential activities with attention to the activity itself (in which case, the activity is intrinsic) vs. attention to the instrumental benefits the activity provides (in which case, the activity is extrinsic).

### Consequences of thinking about goals

A classic finding in the motivation literature is that introducing external incentives reduces an activity's intrinsic value. One unintended consequence of adding incentives is that individuals are less likely to pursue the activity after the external incentives are removed than they were before the incentives were introduced (Deci, 1971; Higgins, Lee, Kwon, & Trope, 1995; Kruglanski, Friedman, & Zeevi, 1971). For example, in a study on the over-justification effect, rewarding children for drawing decreased the likelihood of those children drawing spontaneously after the rewards were removed compared with before they were introduced, presumably because the status of the activity changed from enjoyable on its own to "a means to an end." Children no longer had sufficient justification to draw when the end (i.e., the reward) was removed (Lepper, Greene, & Nisbett, 1973).

Building on these findings, we ask whether merely attending to the instrumentality of an activity is enough to impair engagement in the absence of an actual change in the rewards system. Thus we explore the impact of attending to existing and self-generated incentives rather than of adding and then removing incentives. For example, without introducing actual new incentives, we ask whether children's motivation to draw changes when they self-generate the social and material rewards they could potentially earn upon showing their artwork to a parent.

Moreover, we ask whether the motivational impact of such instrumental focus occurs while the external incentives are still in place, that is, while a person can obtain external benefits from pursuing an activity. For example, we ask whether children who expect to receive certain rewards for drawing would draw less if they attend to these expected rewards vs. focus on drawing itself. We predict that attending to incentives (vs. directing attention somewhere else) has negative consequences on engagement, and such negative impact is due to the impact of the focus on instrumentality on the subjective experience of pursuing the activity.

### Intending vs. pursuing

We explore the motivational consequences of thinking about goals for intending to initiate an activity and for pursuing the activity beyond initiation. Motivation is the psychological force that enables action (Lewin, 1935; see also Diefendorff & Chandler, 2009; Latham, 2007). It includes the planning and execution of exerting resources. We refer to this plan to initiate an activity as "intention." Behavioral intentions influence whether, how much, and how soon a person plans to pursue an activity, and although such intentions are moderately correlated with actual behavior (Fishbein & Ajzen, 1975), they do predict initiation and, to a lesser degree, subsequent adherence to a routine. For example, to mea-

sure intentions, we could ask whether a person plans to sign up for a yoga class or how much she is willing to pay for the class, as both questions will tap into initiation motivation.

In contrast with intentions, pursuit of an activity corresponds to the actual investment of time and effort, and the rate of engagement in an activity once a person initiates it. For a person already pursuing an activity, we could measure the extent of pursuit by how much time or effort is invested and by whether the person is willing to pay to continue pursuing this activity, that is, whether the individual expresses desire to repeat engagement beyond the initial pursuit.

We predict that behavioral intentions increase with attention to goals an activity achieves, because at the point of deliberation, the benefits the activity achieves are salient and the experience of pursuing the activity is not. When individuals form intentions, they wish to evaluate the benefits from pursuing an activity, and information about instrumentality increases their motivation. For example, a person who learns about the benefits of exercising is more likely to be interested in exercising and might even be more likely to sign up for a gym membership than someone who did not receive this information. In contrast, we predict experience weighs more in the actual pursuit of or persistence on an activity than in forming intentions, because experience is salient during pursuit. For example, a gym member's experience while working out should affect the duration of a single workout or adherence to a workout routine. If she enjoys it, she will stay longer and return more quickly.

We further predict the focus on instrumentality negatively impacts the experience of engaging in an activity, making it subjectively more effortful and less pleasant to pursue. This negative impact reflects people's inference that instrumental activities are chore-like (Higgins & Trope, 1990). When an action serves its own end, however, and is not instrumental for something else, it evokes the positive experience associated with goal fulfillment (Custers & Aarts, 2005; Ferguson & Bargh, 2004; Fishbach, Shah, & Kruglanski, 2004). Then, because instrumentality reduces positive experience, we would expect the focus on an activity's instrumental features (i.e., goals) to engender less pursuit than the focus on the experience. Taken together, we predict the focus on the goals an activity achieves motivates behavioral intentions at the deliberation phase but negatively affects the experience of this activity's pursuit, which in turn decreases persistence and rate of engagement.

These distinct influences on intending or planning vs. actually pursuing should occur to the extent that an activity is at least somewhat pleasant and simultaneously serves some external benefits. If the activity is very unpleasant (e.g., escaping from danger), the focus on engagement will not render it more positive. If the activity serves no external goals (e.g., watching a reality TV show), attending to its goals will not render it more instrumental. However, for many everyday activities—whether they are utilitarian activities such as going to work and cleaning the house or hedonic activities such as watching television or eating (Dhar & Wertenbroch, 2000)—both instrumental and experiential foci are possible. For example, to the extent that people obtain value from a task at work (e.g., it is stimulating) or from cleaning (e.g., it is relaxing), adding goals to these activities will undermine the positive experience of pursuing them yet increase the value of completing them. Similarly, to the extent that people identify some external benefits for completing hedonic activities—for example, watching television will enable them to connect with a colleague or a family member—people will find the pursuit of an activity less enjoyable but more valuable.

### Present research

We present four studies that test whether attention to goals promotes behavioral intentions but undermines actual goal

pursuit. We used several activities that vary by their hedonic value—from creating origami and practicing yoga to exercising on a treadmill and dental flossing. These activities provide some external benefits while also being at least somewhat pleasant to pursue; hence value is associated with completing as well as pursuing them. We predicted that directing people's attention to the external benefits of pursuing each of these activities would increase their behavioral intentions to pursue them but decrease their actual pursuit compared with when the focus was on the experience itself.

Specifically, Study 1 tested whether attending to the benefits of a workout—compared with attending the workout itself—increases the amount of time one plans to exercise but decreases the amount of time one actually does exercise. Study 2 tested whether attending to the goals of doing origami increases initiation intentions but decreases the desire to repeat the activity among those already doing it. Study 3 examined whether attending to the goals of flossing increases people's intentions to floss in the next 3 days, while decreasing the actual frequency of their flossing. Finally, Study 4 tested whether emphasizing goals increases the intention to start practicing yoga but undermines the motivation to continue to practice yoga among those already in a yoga class. Across these studies, we further tested whether attention to goals vs. experience undermines pursuit by engendering less positive experience.

### Study 1: attending to goals reduces workout time

Working out can be an experiential, relaxing activity but also an instrumental activity that serves other goals (e.g., weight loss). We predicted that when gym users focus on the benefits of working out (i.e., goals they achieve), they intend to extend their workout but are less likely to carry through than when they focus on the workout itself. Accordingly, we assessed planned and actual workout time as a function of the focus on the experience vs. the goals of working out.

#### Method

##### Participants

One hundred and three members (71 female) at a university gym participated in the study in return for an energy bar.

##### Procedure

The study employed a 2 (instrumental vs. experiential activity)  $\times$  2 (intention vs. pursuit) between-subjects design. We invited participants to complete the study as they were about to start a treadmill exercise. Thus they were already at the gym but had not yet started their exercise. To direct participants' attention to the instrumentality of their workout, we instructed participants in this condition to think about and describe the goals they can achieve by working out. For example, one participant wrote, "I work out to lose weight." These participants further read that they should continue during their workout to focus on the goals they achieve by exercising. To direct participants' attention to their experience, we instructed participants in the experience condition to think about and describe in writing their workout experience. For example, one participant wrote, "I would first stretch and then run on the treadmill." These participants further read that they should continue to focus on their experience while exercising.

To capture workout intention vs. pursuit, we either asked participants to indicate their intentions prior to starting their exercise or, once they had completed their workouts, we measured how much they actually exercised. We assumed gym users' intentions would diverge from how much time they actually exercised, as long as they did not answer both questions, which is why we used

a between-subjects measure. Specifically, those in the intention condition indicated how long they expected to exercise (min), and before starting their workout, they rated how their experience would make them feel (1 = *tired*; 7 = *energized*). Upon completion of their treadmill exercise, everyone (i.e., those in pursuit and intention conditions) recorded the amount of time they had spent on the treadmill (min), and also rated their experience (1 = *tired*; 7 = *energized*), though we only needed pursuers' responses to these items to test our main hypothesis.

#### Results and discussion

Analysis of exercise times revealed the predicted 2 (instrumental vs. experiential activity)  $\times$  2 (intention vs. pursuit) interaction,  $F(1,99) = 6.93$ ,  $p = .01$  (see Fig. 1). Before their workout, participants planned to spend more time on the treadmill when they focused on the goals ( $M = 46.59$  min,  $SD = 15.07$ ) rather than the experience ( $M = 38.25$  min,  $SD = 15.83$ ) of exercising,  $t(40) = 1.87$ ,  $p = .03$  (here and after, we report the results of one-tailed tests for all planned simple comparisons). However, in actuality, participants spent less time on the treadmill when they focused on the goals ( $M = 33.93$  min,  $SD = 13.67$ ) rather than the experience ( $M = 43.09$  min,  $SD = 18.33$ ) of exercising,  $t(59) = 2.19$ ,  $p = .02$ .

Recall that we measured workout times either before (intention) or after (pursuit) the workout, because stating an intention influences subsequent behavior (Zhang & Fishbach, 2010). We nonetheless asked those who listed their intended workout times to subsequently also report their actual workout times. Using a repeated measure ANOVA, we found a 2 (instrumental vs. experiential activity)  $\times$  2 (before vs. after) interaction among those stating their intentions,  $F(1,40) = 9.00$ ,  $p < .01$ . Those attending to their goals exercised less ( $M = 39.55$  min,  $SD = 13.88$ ) than they had intended ( $M = 46.59$  min,  $SD = 15.07$ ),  $t(21) = 2.74$ ,  $p < .01$ , whereas those attending to their experience exercised about the same as and directionally more ( $M = 41.75$  min,  $SD = 14.98$ ) than they had intended ( $M = 38.25$  min,  $SD = 15.83$ ),  $t(19) = 1.56$ ,  $p = .06$ . Attending to goals and, to some extent, also directing attention away from these goals have unique effects on motivation. To further demonstrate this point, we conducted a follow-up study ( $n = 19$ ) in which we asked gym users to indicate their intended and, later, actual exercise time without any focus manipulation (i.e., control treatment). We found that in the absence of focus manipulation, gym users exercised about the same amount of time as they had intended ( $M_{\text{Actual vs. Intended}} = 36.00$  vs. 38.16,  $SD = 13.88$  vs. 16.43,  $t < 1$ ).

We further hypothesized that the focus on the goals of exercising renders this activity more effortful, thereby reducing gym users' persistence. Indeed, an analysis of participants' experience revealed the predicted 2 (instrumental vs. experiential activity)  $\times$  2 (intention vs. pursuit) interaction,  $F(1,99) = 6.44$ ,  $p = .01$ .

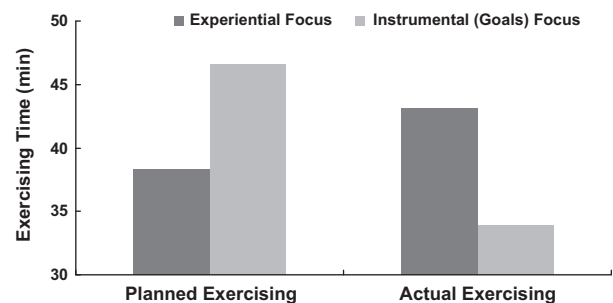


Fig. 1. Planned and actual exercise time as a function of emphasizing the instrumentality vs. the experience of the activity (Study 1).

Before their workout, participants anticipated a similar experience across conditions ( $M_{\text{Goal vs. Experience}} = 5.59$  vs.  $5.00$ ,  $SD = 1.10$  vs.  $1.69$ ),  $t(40) = 1.36$ ,  $p > .1$ . However, after their workout, those who had focused on the goals felt less energized ( $M = 5.10$ ,  $SD = 1.21$ ) than those who had focused on the experience ( $M = 5.78$ ,  $SD = 1.04$ ),  $t(59) = 2.36$ ,  $p = .01$ . In accordance with our hypothesis, participants' experience positively predicted how long they actually persisted,  $r = .24$ ,  $p = .05$ , but their anticipated experience did not predict how long they were planning to persist,  $r = .09$ , *ns*. These findings suggest the quality of the experience while exercising influences pursuit of a workout, but anticipated quality of the experience does not predict the intention to exercise, because experience is not a salient factor in planning.

We find that directing people to consider the goals of exercising increases exercising intentions but decreases the actual amount of time people exercise, potentially because such focus renders exercising more effortful and hence more difficult to prolong. Noticeably, pursuers persisted less in their workouts for the same reasons (i.e., considering the benefits) those stating their intentions planned to exercise more. Although intentions often predict behavior, and participants' stated intentions predicted the length of their exercise ( $r = .66$ ,  $p < .001$ ), we find attention to goals has an opposite impact on what people plan to do and on their actual behavior.

In this study, we examined intention and pursuit of an effortful activity and one that is generally considered instrumental. Accordingly, in Study 2, we extended our investigation to an activity that does not require physical effort and that most would consider hedonic. This change allows us to rule out the possibility that greater time investment is associated with lower (e.g., slower) performance; for instance, greater persistence on the treadmill may have come at the expense of exerting less effort by setting the treadmill on a lower level. In pursuit of a low-effort activity, individuals are less likely to trade off between persistence and effort investment.

## Study 2: attending to goals negatively impacts creating origami

Origami, the Japanese art of folding paper, is a relaxing activity that many people consider therapeutic; hence it also offers certain instrumental benefits. Accordingly, pursuers in Study 2 created an origami figure while either focusing on the goals they can achieve by doing origami or their experience. Another group of yoked participants completed the intention measure. They read one of the descriptions pursuers in either the goals or experience condition wrote. We predicted pursuers' focus on instrumentality would negatively impact the experience of creating origami, thereby reducing their motivation to continue the activity. In contrast, we predicted observers' focus on instrumentality would increase their intention to create origami.

### Method

#### Participants

Ninety-six undergraduate students (41 female) participated in the study for monetary compensation.

#### Procedure

We employed a 2 (instrumental vs. experiential activity)  $\times$  2 (intention vs. pursuit) yoked design. Participants completed the study in an experimental lab. Pursuers' ( $n = 48$ ) task was to create an origami frog. They first read some background information on origami. Specifically, those in the instrumental condition read that there are many reasons to do origami: teachers use it as a tool that provides educational benefits; doctors use it as physical therapy; and so on. Those in the experiential condition read that origami is a popular hobby people pursue for its own sake and not for

the external benefits it might provide them. Next, all pursuers learned they would make an origami frog. Depending on the experimental condition, the instructions further read that participants should focus on either the goals they achieve by doing origami or on the experience. Specifically, participants in the instrumental condition read they should consider the goals they can achieve by doing origami and keep these goals in mind during the pursuit, whereas participants in the experiential condition read they should focus on the activity while creating the origami. Participants further read they would describe either their goals or experience after completing the origami.

After completing the origami frog ( $M_{\text{time}} = 7.08$  min,  $SD = 2.22$ ; everybody was successful), participants rated their task enjoyment (1 = *not enjoyable*; 7 = *very enjoyable*), interest in doing more origami in the near future (1 = *not at all*; 7 = *very much*), and their willingness to pay for an origami kit that included three origami diagram books and 100 pieces of colored paper (\$0 to \$30). The latter two measures assessed pursuit, which we define as continuous motivation to create origami beyond the initial experience. In particular, if people wished to continue this activity, they would not only express such interest but would further be more willing to pay for an origami kit. Notably, these two items would assess intention if presented to those not engaging in origami yet but would assess pursuit among those already engaging in the activity and indicating their interest in prolonging such pursuit. Thus, in this experiment, we used the timing of measurement to capture either intention to initiate an activity or desire to prolong the pursuit by reengaging.

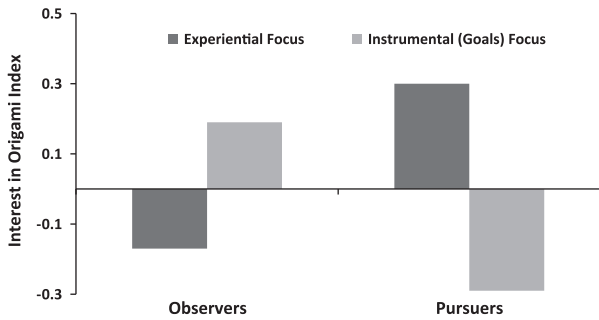
Finally, depending on the experimental condition, participants wrote a short summary of the goals served by creating origami or of their experience of creating origami. They wrote, for example, "By doing origami, I can improve my hand-eye coordination" (instrumental condition) and "I was doing things without knowing the results, but after the last step, I discovered that I have done a frog" (experiential condition).

The participants in the intentions condition ( $n = 48$ ) received similar information on origami but did not create a frog figure. To manipulate their focus on the goals vs. experience of creating origami, we yoked each participant to a pursuer: the participant received the pursuer's written description of the goals or experience, depending on the condition. Next, the participants rated their interest in doing origami in the near future and their willingness to pay for the origami kit, using the same scale items as pursuers. This time, because participants had not been doing origami, their answers reflected their intentions to try it out rather than to prolong their pursuits.

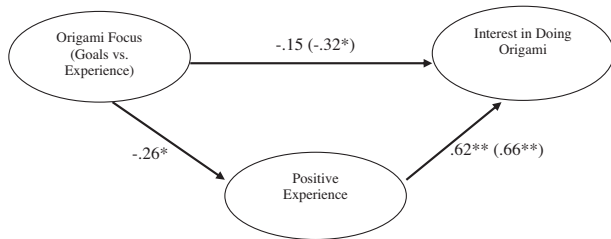
### Results and discussion

To measure participants' motivation to start or prolong doing origami, we collapsed the measures of interest (7-point scale) and willingness to pay for an origami kit (\$) after transforming these variables into z-scores ( $r(96) = .25$ ,  $p = .01$ ).<sup>1</sup> An ANOVA of interest score revealed the predicted 2 (instrumental vs. experiential)  $\times$  2 (intention vs. pursuit) interaction,  $F(1,46) = 10.19$ ,  $p = .003$  (see Fig. 2). Further analysis revealed observers who read information on goals were more interested in origami ( $M = .19$ ,  $SD = .68$ ) than those who read about the experience of doing origami ( $M = -.17$ ,  $SD = .64$ ),  $t(46) = 1.90$ ,  $p = .03$ . In contrast with the observers, pursuers who considered their goals while creating the origami wished to engage in the activity ( $M = -.30$ ,  $SD = .88$ ) less than those

<sup>1</sup> Because the correlation between the measures is somewhat low, we note that we got the same pattern when analyzing each measure separately:  $F(1,46) = 4.12$ ,  $p = .048$ , for interest in doing origami, and  $F(1,46) = 7.70$ ,  $p = .008$ , for willingness to pay for an origami kit.



**Fig. 2.** Interest in initiating (Observers) and pursuing (Pursuers) origami as a function of emphasizing the instrumentality vs. the experience of the activity (Study 2).



**Fig. 3.** Path model of the influence of focus (goals vs. experience of origami) on interest in doing origami (Study 2). The numbers in parentheses are the zero-order standardized beta. \* $p \leq .07$ , \*\* $p < .01$ .

who considered their experience while creating the origami ( $M = .30$ ,  $SD = .72$ ,  $t(46) = 2.59$ ,  $p = .01$ ).

Pursuers further reported enjoying creating their origami less when they focused on their goals ( $M = 4.54$ ,  $SD = 1.53$ ) than when they focused on their experience ( $M = 5.38$ ,  $SD = 1.35$ ),  $t(46) = 2.00$ ,  $p = .03$ . As we predicted, enjoyment ratings mediated the impact of focus on interest in continuing the activity: whereas an instrumental (vs. experiential) focus directly decreased pursuers' interest in doing more origami ( $\beta = -.32$ ,  $p < .05$ ), indirectly, an instrumental (vs. experiential) focus marginally decreased participants' enjoyment ( $\beta = -.26$ ,  $p = .06$ ), which in turn increased their interest in doing origami ( $\beta = .66$ ,  $p < .001$ ). Controlling for participants' enjoyment, the path between focus and interest in origami was nonsignificant ( $\beta = -.15$ ,  $ns$ ; see Fig. 3).

These results suggest an initial interest in origami increases when the activity appears instrumental (vs. experiential), but actual persistence decreases. We attribute these opposite effects of attending to benefits to the impact of goals on undermining experience, which in turn undermines subsequent pursuit. Indeed, the mediation analysis implies instrumentality reduces persistence because it renders pursuit of the activity less enjoyable than does focusing on the activity itself.

### Study 3: attending to goals reduces dental flossing

To expand the scope of our investigation, in Study 3, we explored a utilitarian activity in which pursuit requires holding to a routine over time: dental flossing. We predicted that even for such an instrumental activity, the focus on external benefits diminishes the experience and thus undermines adherence to the flossing routine.

Our pilot data suggest that only about half the people in our sampled population floss, and those individuals often floss irregularly. Thus we measured participants' behavioral intention to floss regularly over the course of the next few days as well as their adherence to this routine. We predicted that compared with a focus on the experience of flossing, a focus on the benefits of flossing

would increase intentions to floss initially but decrease the actual frequency of keeping up the routine over the next few days. We further predicted that the focus on benefits undermines persistence by negatively affecting the experience of flossing one's teeth.

### Method

#### Participants

Fifty undergraduate students (24 females) participated in the study in return for a small prize (dental gum). These participants completed the two parts of the study: the intention survey and the follow-up pursuit survey. We omitted from the study all participants who failed to complete the second, pursuit survey (another 50).

#### Procedure

We employed a 2 (instrumental vs. experiential activity)  $\times$  2 (intention vs. pursuit) mixed design. Participants completed the first part of the study in an experimental lab. Depending on the experimental condition, the survey instructed them to either describe the goals they achieve by flossing or the experience of flossing. For example, one participant in the instrumental condition wrote, "By flossing, I expect to prevent long-term tooth decay," whereas a participant in the experiential condition wrote, "It's sometimes difficult to slide between teeth but I can still feel a sense of cleanness."

The next part of the survey measured flossing intentions. Using a 3-item scale, participants reported (a) their intentions to floss over the course of the next 3 days (1 = *not at all*; 9 = *very much*) and (b) how often they would floss (1 = *less than usual*; 9 = *more than usual*). They further indicated (c) their willingness to pay for standard Glide floss that was presented with the survey (\$0 to \$10). Although that floss was not actually for sale, we assumed intention to floss increases one's need to own floss and thus one's willingness to pay for it. Because we measured intention and pursuit within the same participants' population, we did not ask participants to state their intentions on an easily measurable variable (e.g., times per week), because stating concrete intentions could have influenced actual behavior.

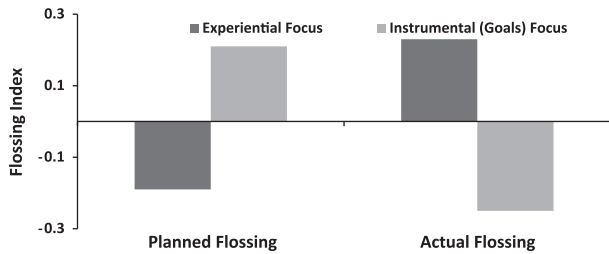
Participants then indicated whether (a) they floss their teeth (64% indicated they did) and (b) how many times per average week they floss ( $M = 4.02$ ,  $SD = 3.15$ ). They then rated what they believed their experience of flossing would be (two 9-point scales: *tired vs. awakened* and *exhausted vs. refreshed*). Because a large proportion of our participants were flossing with some regularity, we should interpret the intention measures as referring to an intention to increase the frequency of this behavior in the next few days.

Three days later, participants completed a follow-up electronic survey that measured actual pursuit of their flossing routine. The survey was similar to the intentions one, but it referred to their actual behavior. Participants reported (a) whether they had flossed in the last 3 days (1 = *not at all*; 9 = *very much*), (b) how often they had flossed (1 = *less than usual*; 9 = *more than usual*), and (c) how much they would be willing to pay for the Glide floss (\$0 to \$10). Participants further rated their actual experience of flossing on the same two scales (*tired vs. awakened* and *exhausted vs. refreshed*).

### Results and discussion

We collapsed the three flossing measures (9-point scale items and WTP in \$) after  $z$  transformation ( $\alpha$ 's = .78 and .84, for initial and follow-up surveys). An ANOVA of the flossing index yielded the predicted 2 (instrumental vs. experiential)  $\times$  2 (intention vs. pursuit) interaction,  $F(1,48) = 12.21$ ,  $p = .001^2$  (see Fig. 4). When

<sup>2</sup> A similar analysis, which controlled for average flossing frequency (times per week), yielded similar effects for flossing,  $F(1,45) = 8.01$ ,  $p < .01$ , and for experience,  $F(1,45) = 6.96$ ,  $p = .01$ .



**Fig. 4.** Planned and actual flossing as a function of emphasizing the instrumentality vs. experience of the activity (Study 3).

reporting their plans, those who focused on goals indicated greater intentions to floss ( $M = .21$ ;  $SD = 1.03$ ) than those who focused on the experience ( $M = -.19$ ;  $SD = .74$ ),  $t(48) = 1.57$ ,  $p = .05$ . In contrast, after 3 days, those who listed their goals reported less actual flossing ( $M = -.25$ ;  $SD = 1.01$ ) than those who focused on their experience ( $M = .23$ ;  $SD = .80$ ),  $t(48) = 1.85$ ,  $p = .03$ . Considering the goals (vs. experience) of flossing appears to have increased behavioral intentions to floss but decreased actual flossing routine. Interestingly, actual flossing frequency exceeded the expectations of those who considered the experience of flossing,  $t(25) = 2.48$ ,  $p < .05$ .

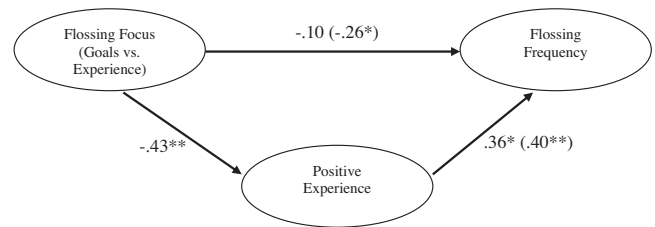
Next, we collapsed the two items measuring the experience of flossing (tired/awakened and exhausted/refreshed;  $r = .68$  for intentions survey, and  $r = .73$  for pursuit surveys  $ps < .001$ ). An ANOVA of this score yielded the predicted 2 (instrumental vs. experiential)  $\times$  2 (expected vs. actual) interaction,  $F(1,48) = 6.38$ ,  $p = .015$ . Participants expected to have similar experiences in the instrumental and experiential conditions ( $Ms = 6.54$  vs.  $6.00$ ;  $ns$ ); however, 3 days later, those who focused on their goals for flossing had a less positive experience ( $M = 5.96$ ;  $SD = 1.27$ ) than those who focused on their experience of flossing ( $M = 7.15$ ;  $SD = 1.48$ ),  $t(48) = 3.05$ ,  $p = .002$ . Therefore, considering the goals of flossing rendered the experience less positive.

Further analysis revealed that expected experience predicted behavioral intentions,  $r(50) = .32$ ,  $p < .05$ , and actual experience predicted actual flossing,  $r(50) = .40$ ,  $p < .005$ . Recall that in Study 1, experience predicted actual rather than planned exercise. Here we find experience carries weight both in forming intentions and in executing the behaviors. But consistent with Study 1, experience matters more than external goals only when one is actually executing the activity.

We next conducted a mediation analysis to explore whether the experience of flossing mediated the negative impact of attending to goals on actual adherence to the flossing routine. Consistent with our hypothesis, attending to goals (vs. experience) directly decreased adherence to the flossing routine ( $\beta = -.26$ ,  $p = .07$ ). Indirectly, the focus on goals (vs. experience) negatively impacted experience ( $\beta = -.43$ ,  $p < .01$ ), whereas experience positively predicted adherence to a flossing routine ( $\beta = .40$ ,  $p < .01$ ). Controlling for participants' experience, the impact of attending to goals on flossing behavior was nonsignificant ( $\beta = -.10$ ,  $ns$ ; see Fig. 5).

We conducted another mediation analysis of participants' intentions to floss and found expected experience did not mediate the impact of goal focus on flossing intentions, although expected experience was positively related to flossing intentions ( $\beta = .28$ ,  $p = .05$ ). This analysis further demonstrates that whereas experience drives actual pursuit of an action, expected experience does not have a similar impact on the intention to pursue the action.

Overall, the results of Study 3 suggest behavioral intentions increase with the goals flossing serves; however, actual execution of a routine depends more on the experience rather than benefits of flossing. Then, because the focus on goals diminishes positive experience, this focus indirectly negatively impacts the frequency of flossing.



**Fig. 5.** Path model of the influence of focus (goals vs. experience of flossing) on flossing frequency (Study 3). The numbers in parentheses are the zero-order standardized beta. \* $p \leq .07$ , \*\* $p < .01$ .

These results extend our investigation to an activity most people consider highly instrumental though sometimes unpleasant. Nonetheless, we find focusing on the goal (vs. the activity) renders its experience less positive and decreases persistence. In our final study, we move to the activity of practicing yoga and test whether thinking about goals undermines persistence only if the person explicitly generates these goals or, as we predict, whether a subtle reminder of these goals is sufficient to undermine persistence.

#### Study 4: priming goals negatively impact practicing yoga

In Studies 1–3, we compared instrumental to experiential focus, which made pointing out the unique impact of instrumental focus difficult. To more directly test the impact of emphasizing goals, in Study 4, we compared an instrumental focus to a control, no-focus condition. Specifically, we either provided information on goals or no information at all.

In addition, in Studies 1–3, participants in the instrumental conditions self-generated the goals an activity achieves—for example, by listing the goals they achieve by exercising or flossing. Using self-generated goals, subjective difficulty in generating these goals may have been partially responsible for our effects (e.g., Schwarz et al., 1991). For example, participants' inability to identify good reasons to floss could undermine adherence to a routine. In addition, research by Wilson and Schooler (1991) attests that a conscious analysis of reasons can undermine performance by increasing reliance on less optimal criteria. For example, analyzing the reasons for choosing can reduce the quality of choice. Therefore, thinking about goals might undermine performance by distracting people from the real reasons for pursuing the activity.

To eliminate these potential influences of conscious and effortful reasoning about goals, in Study 4, we activated an instrumental focus by priming the goals an activity (yoga) achieves instead of relying on self-generated goals. Participants in the instrumental condition saw a magazine cover displaying a woman practicing yoga, accompanied by text describing the goals practicing yoga helps achieve. Participants in the control condition saw the same magazine cover with no text. We predicted that among people who do not practice yoga, priming the goals yoga achieves would increase behavioral intentions. However, for those already enrolled in yoga class, priming goals would decrease their positive experience from practicing yoga and their subsequent desire to continue practicing yoga.

#### Method

##### Participants

Forty-four undergraduate female students, recruited at a university campus, completed the intentions survey for monetary compensation. We only recruited females because the majority of the people who were actually enrolled in the university yoga class were females. Forty undergraduate students (33 females),

recruited at a university yoga class, completed the pursuit survey also for monetary compensation.

#### Procedure

The study employed a 2 (instrumental vs. experiential activity)  $\times$  2 (intention vs. pursuit) between-subjects design. Within each intention-vs.-pursuit sample, we randomly assigned participants to the instrumental-vs.-control conditions. All the participants completed a survey on yoga. To prime the goals of yoga outside of participants' focal attention, the experimenter handed out a clipboard participants could use to hold their surveys. We attached to this clipboard a cover page from a yoga magazine, displaying a woman practicing yoga. In the instrumental condition, the cover included a photo of a woman practicing yoga and a description of the goals yoga helps achieve (e.g., find balance, boost brainpower; see Fig. 6). In the control condition, the cover was modified such that the woman was displayed with no additional information. The experimenter made no reference to the image on the clipboard (see Fishbach, Dhar, & Zhang, 2006, for a similar priming technique).

To measure behavioral intentions, those participants rated (a) their interest in doing yoga (1 = *not at all*; 9 = *very much*) and (b) how long they expected to maintain this activity if they started it (1 = *not that long*; 9 = *very long*). We further asked these participants to report whether they practiced yoga regularly (yes/no). Pursuers (i.e., yogis) received the survey in one of the priming conditions just as their yoga class was about to begin. At that point, they only completed demographic information and saw the prime images, with or without goals, depending on their experimental condition. After a one-and-a-half-hour yoga class, they completed a survey that asked them to rate their experience while doing yoga (two 9-point scales: *unpleasant vs. pleasant*; *stressful vs. calm*). Participants also completed the same items that measure behavioral intentions for those not practicing yoga, and which assessed motivation to continue practicing yoga for those already practicing. Finally, they listed how long they had been practicing yoga.

#### Results and discussion

Sixty-six percent of pursuers reported they practiced yoga regularly and the rest reported they practiced yoga sporadically. Pur-

suers' prior experience with yoga varied from 3 weeks to 5 years. Two pursuers indicated the class was their first, and we removed their data from further analysis since whether they were forming intentions or monitoring pursuit was unclear. Among those who indicated their intentions, only 11% reported having some experience with practicing yoga, and we included them in the intentions condition.

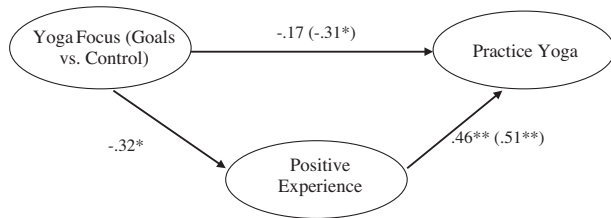
We collapsed the items measuring motivation to practice yoga ( $r(82) = .75, p < .001$ ). In support of the hypothesis, among the initiators, the instrumental prime increased behavioral intentions to practice yoga ( $M = 6.16, SD = 1.40$ ) above control prime ( $M = 4.80, SD = 2.49$ ),  $t(42) = 2.24, p = .031$ . Also in support of the hypothesis and in contrast with behavioral intentions, the instrumental prime among pursuers decreased motivation to continue practicing yoga ( $M = 7.82, SD = 1.27$ ) below control prime ( $M = 8.50, SD = .83$ ),  $t(36) = 1.96, p = .058$ .

We further collapsed the items measuring the experience (pleasant, calm) pursuers had while practicing yoga ( $r(38) = .67, p < .001$ ). In support of the hypothesis, an instrumental prime decreased the positive experience of yoga ( $M = 7.39, SD = 1.41$ ) below control prime ( $M = 8.13, SD = .76$ ),  $t(36) = 2.01, p = .053$ . We next conducted a mediation analysis to examine whether experience accounts for the negative impact of instrumental prime on persistence. In support of our hypothesis, the analysis of pursuers' data revealed that an instrumental (vs. control) prime directly decreased participants' motivation to practice yoga ( $\beta = -.31, p = .05$ ). Indirectly, an instrumental (vs. control) prime decreased participants' positive experience ( $\beta = -.32, p = .05$ ), and positive experience increased motivation to do yoga ( $\beta = .51; p = .001$ ). When controlling for positive experience, we found the path between the prime and interest in doing yoga became nonsignificant ( $\beta = -.17, ns$ ; see Fig. 7). We can thus conclude that how yogis experience a yoga session drives the negative impact of priming goals on doing yoga.

Overall then, whereas our previous studies find explicit retrieval of goals an activity serves renders the activity less pleasant and undermines pursuit, the results of Study 4 demonstrate that attending to goals does not require conscious processing and has a unique impact on motivation. We find the focus on goals undermines persistence even when this focus is the result of rudimentary environmental cues that act largely outside of awareness



Fig. 6. Instrumental vs. control framing of yoga (Study 4).



**Fig. 7.** Path model of the influence of focus (goals of yoga vs. control) practicing yoga (Study 4). The numbers in parentheses are the zero-order standardized beta. \* $p \leq .05$ , \*\* $p < .01$ .

and can nonetheless impair experience and, subsequently, action pursuit.

### General discussion

This research explores how thinking about goals impacts the experience and pursuit of activities that serve these goals but that are also valuable for the experience of pursuing them. We argue that many everyday activities serve as a means for another goal as well as their own end, thereby exhibiting both extrinsic and intrinsic values (Deci & Ryan, 1985; Higgins & Trope, 1990; Lepper, 1981; Sansone & Harackiewicz, 1996; Shah, 2000). The value of these activities comes partially from completing the activity and achieving some goals and partially from pursuing the activity. We find that attending to the goals the activity achieves, though rendering it more valuable, also undermines the experience of pursuing this activity. The result is that attending to goals increases behavioral intentions to pursue an activity, but because experience weighs more than goals when individuals actually pursue an activity, attending to goals also undermines pursuit. The implications of these findings for adaptive self-regulation are straightforward: to motivate themselves (and others), individuals—prior to engagement—should better focus on the goals an activity serves and move their attention away from these goals once they are already pursuing them.

In support of our analysis, four studies demonstrate that before one engages in an activity, thinking about goals increases forming intentions more than attending to the positive experience pursuing these goals engenders. However, among those already pursuing an activity, thinking about goals renders the experience less positive and undermines pursuit more than focusing on the experience. These studies utilized a number of activities that vary by their hedonic value, including working out, doing origami, flossing, and practicing yoga. We contrasted forming intentions with actual pursuit, which we defined as the length of a single engagement (e.g., the length of a workout), the desire to prolong the pursuit in the near future (e.g., do another origami after the experiment is over), and adherence to a routine of pursuing the activity (e.g., of flossing or yoga). These operationalizations are a subset of the different motivational variables that represent intending or planning vs. pursuing. For example, forming intentions also includes initiation motivations such as taking the first step toward action pursuit (e.g., buying a gym membership) as well as stating a start date that is sooner rather than later. And pursuit is also indicated by how much effort people put into an activity they are already pursuing, for example, the level of effort toward a workout. Although exploring these other variables remains, at this point, open for future research, we can already conclude that distinguishing between the two categories of motivational variables—intention vs. pursuit—is useful.

In studying the impact of goals, we focused on external goals, that is, the instrumental benefits that materialize once the activity

or a set of activities is completed. Other experiential or internal incentives that are part of pursuing the activity also exist, and this type of incentive should not undermine pursuit. On the contrary: often the intrinsic incentives create the positive experience of pursuing an activity, and further increase pursuit. At times, the distinction between extrinsic vs. intrinsic incentives requires careful analysis. For example, with regard to learning activities, some learners see the incentive as occurring during the learning process, when the learner experiences new insights and acquires new skills and abilities. But other learners learn for the sake of achieving some external goals that will materialize at a later point in time, as when some people learn a new language in preparation for a trip to a foreign country. On the basis of our results, we would predict the focus on external goals to render the learning activity more effortful and to have the potential to undermine pursuit. Indeed, in our origami Study 2, several people wrote about learning goals when generating external goals for doing origami, and these people displayed a pattern of lower pursuit similar to those who generated other external goals.

A question arises as to whether the observed effects were caused by thinking about goals or *not* thinking about goals in the comparison conditions in which we directed participants to focus on the experience of pursuing the actions. We propose that thinking about goals undermines pursuit, and we suspect that for many activities, the focus on experience is often the default state of mind while pursuing the behavior, when people are in an implemental mindset (Gollwitzer, 1999). Indeed, in Study 1, those attending to the goals of exercising exercised less than they intended, and in Study 4, the effect of priming the goals of practicing yoga rose compared with a control, no-priming condition.

Although our focus is on the unique impact of thinking about goals, we suggest that whether priming goals vs. concealing them will have an impact depends on the nature of the activity and on what people spontaneously attend to in a particular situation. For activities that are experiential for most (e.g., watching television), attending to goals will impact motivation more than considering the experience, because people spontaneously attend to their experience. In contrast, for activities that are instrumental for most (e.g., cleaning the house), inhibiting thoughts about instrumental goals will have a greater impact on motivation than attending to these goals, because people spontaneously attend to their goals for these activities.

### Implications

Our research has implications for theory and research on forecasting errors. People might erroneously predict the focus on instrumental goals will increase their persistence, whereas we find attention to goals only enhances intentions to pursue and initiation. Notably, our results do not directly demonstrate a forecasting error, because participants in our studies who attended to goals (vs. experience) did not predict pursuing an activity would be more pleasant or that they would persist longer, but rather, they indicated they were planning to do more. However, our results suggest the potential existence of a forecasting error when people fail to appreciate the difficulty of pursuing an activity when they attend to the goals it serves, and they may even predict they will persist more if they attend to these goals. For example, people who attend to the goals of exercising might not only plan longer workouts but might also predict they will persist longer, though they will likely persist less.

Our findings also have implications for the study of intrinsic motivation. First, whereas research on intrinsic motivation finds the status of an activity changes depending on the presence of external rewards (Deci & Ryan, 1985; Kruglanski et al., 1971; Lepper et al., 1973), we find an actual change in the reward system



is not necessary to change the source of value (intrinsic vs. extrinsic) for performing an activity (see also Deci & Ryan, 2000). Rather, the focus on the activity as a means to an end is sufficient to reduce its intrinsic value in situations in which the objective (internal and external) incentives remain intact.

Second, our research extends the definition of what constitutes an “external incentive” that has the potential to undermine intrinsic motivation and hence the value of performing (vs. completing) an activity. Whereas previous research mainly focused on external rewards with the modal incentive being a monetary reward, we expand the definition of external incentives to include one's personal goals, as long as achievement of these goals is conditioned on completing the activity first and is delivered at a later point in time. For example, we suggest weight loss is an external incentive for exercising, and improving dental hygiene is an external benefit of flossing. Although these goals are personal ones for the individual performing the activity, they also serve as external incentives because they occur after the activity is completed rather than as part of its pursuit. The negative impact of these external incentives on persistence holds as long as the benefit is not in pursuing the activity but in completing it. We contrast these external incentives with internal benefits that occur as part of pursuing the activity. These internal benefits include, for example, relaxing while exercising or feeling clean while flossing. Because internal incentives occur at the same time as pursuing the activity, they do not undermine intrinsic interest. We can thus conclude that emphasizing the experience rather than the benefits of the activity better motivates persistence through emphasizing such intrinsic motivation.

## References

- Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior*. New York: Cambridge University Press.
- Choi, J., & Fishbach, A. (2011). Choice as an end versus a means. *Journal of Marketing Research*, 48, 544–554.
- Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety: The experience of flow in work and games*. San Francisco: Jossey-Bass.
- Custers, R., & Aarts, H. (2005). Positive affect as implicit motivator: On the nonconscious operation of behavioral goals. *Journal of Personality and Social Psychology*, 89, 129–142.
- Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology*, 18, 105–115.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.
- Deci, E. L., & Ryan, R. M. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68–78.
- Dhar, R., & Wertenbroch, K. (2000). Consumer choice between hedonic and utilitarian goods. *Journal of Marketing Research*, 37, 60–71.
- Diefendorff, J. M., & Chandler, M. M. (2009). Motivating employees. In S. Zedeck (Ed.), *Handbook of industrial and organizational psychology*. Washington, DC: American Psychological Association.
- Ferguson, M. J., & Bargh, J. A. (2004). Liking is for doing: The effects of goal pursuit on automatic evaluation. *Journal of Personality and Social Psychology*, 87, 557–572.
- Fishbach, A., Dhar, R., & Zhang, Y. (2006). Sub-goals as substitutes or complements: The role of goal accessibility. *Journal of Personality and Social Psychology*, 91, 232–242.
- Fishbach, A., & Ferguson, M. F. (2007). The goal construct in social psychology. In A. W. Kruglanski & T. E. Higgins (Eds.), *Social psychology: Handbook of basic principles* (pp. 490–515). NY: Guilford.
- Fishbach, A., Shah, J. Y., & Kruglanski, A. W. (2004). Emotional transfer in goal systems. *Journal of Experimental Social Psychology*, 40, 723–738.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.
- Gollwitzer, P. M. (1999). Implementation intentions: Strong effects of simple plans. *American Psychologist*, 54, 493–503.
- Harackiewicz, J. M., & Sansone, C. (1991). Goals and intrinsic motivation: You can get there from here. In M. L. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement* (Vol. 9, pp. 21–49). Greenwich: JAI Press.
- Heath, C., Larrick, R., & Wu, G. (1999). Goals as reference points. *Cognitive Psychology*, 38, 79–109.
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychology Review*, 94, 319–340.
- Higgins, E. T., Lee, J., Kwon, J., & Trope, Y. (1995). When combining intrinsic motivations undermines interest: A test of activity engagement theory. *Journal of Personality and Social Psychology*, 68, 749–767.
- Higgins, E. T., & Trope, Y. (1990). Activity engagement theory: Implications of multiply identifiable input for intrinsic motivation. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 2, pp. 229–264). New York: Guilford Press.
- Kruglanski, A. W. (1995). Implicit theory of personality as a theory of personality. *Psychological Inquiry*, 6, 301–304.
- Kruglanski, A. W., Friedman, I., & Zeevi, G. (1971). The effects of extrinsic incentives on some qualitative aspects of task performance. *Journal of Personality*, 39, 606–617.
- Latham, G. P. (2007). *Work motivation: History, theory, research and practice*. Thousand Oaks, CA: Sage.
- Lepper, M. R. (1981). Intrinsic and extrinsic motivation in children: Detrimental effects of superfluous social controls. In W. A. Collins (Ed.), *Aspects of the development of competence: Minnesota symposium on child psychology* (Vol. 14, pp. 155–213). Hillsdale, NJ: Erlbaum.
- Lepper, M. R., Greene, D., & Nisbett, R. E. (1973). Undermining children's intrinsic interest with extrinsic rewards: A test of the ‘overjustification’ hypothesis. *Journal of Personality and Social Psychology*, 28, 129–137.
- Lewin, K. (1935). *A dynamic theory of personality*. New York, NY: McGraw-Hill.
- Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting and task performance*. Englewood Cliffs, NJ: Prentice Hall.
- Rawsthorne, L. J., & Elliot, A. J. (1999). Achievement goals and intrinsic motivation: A meta-analytic review. *Personality and Social Psychology Review*, 3, 326–344.
- Sansone, C., & Harackiewicz, J. M. (1996). I don't feel like it: The function of interest in self-regulation. In L. L. Martin & A. Tesser (Eds.), *The psychology of action: Linking cognition and motivation to behavior* (pp. 7–26). New York: Guilford Press.
- Schwarz, N., Bless, H., Strack, F., Klumpp, G., Rittenauer-Schatka, H., & Simons, A. (1991). Ease of retrieval as information: Another look at the availability heuristic. *Journal of Personality and Social Psychology*, 61, 195–202.
- Shah, J. Y., & Kruglanski, A. W. (2000). The structure and substance of intrinsic motivation. In *Intrinsic and Extrinsic Motivation*.
- Shah, J. Y., & Kruglanski, A. W. (2002). Priming against your will: How accessible alternatives affect goal pursuit. *Journal of Experimental Social Psychology*, 38, 368–383.
- Wilson, T. D., & Schooler, J. W. (1991). Thinking too much: Introspection and reduce the quality preferences and decision. *Journal of Personality and Social Psychology*, 60, 181–192.
- Zhang, Y., & Fishbach, A. (2010). Counteracting obstacles with optimistic predictions. *Journal of Experimental Psychology: General*, 139, 16–31.