What's interest got to do with it?: Potential trade-offs in the self-regulation of motivation

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Recently the notion of "willpower" was the focus of a NY Times health blog by Tara Parker-Pope (posted December 6, 2007). Parker-Pope described research by Baumeister, Tice, Vohs and colleagues that suggests that willpower is an internal resource that can be strengthened with practice, depleted, and restored (see Baumeister, Vohs & Tice, 2007, for a review). The discussion in response to the initial post became in essence a discussion by mostly non-psychologists on the nature of motivation--in particular, what motivates us, and whether we can control it. The discussion echoed much of the discussion that takes place in the research literature. For example, some posters attempted to identify the features that make striving successful, such as the presence of clear goals. Others argued about the line between healthy self-control and psychiatric disorders such as OCD or eating disorders. Several brought up the possibility of cultural differences (e.g., suggesting that Asian cultures have more willpower than materialistic western cultures), and some speculated about whether there are inborn individual differences or whether willpower is something that is learned and can change. Amidst arguments about the previous points, one poster noted:

> Here is Mick's law: the need for will power is in inverse proportion to the strength of motivation. …To me, will power is the ability to make yourself do something even when you don't feel like it or, conversely, to refrain from doing something even when you really, really want to….People of great achievement often seem to be exemplars of will power. Someone like Steven King, say, who turns out another fat book or two each year. Or Joyce Carol Oates, who has been averaging three books a year (poems, essays, novels, short stories) for going on three decades. Surely it must take tremendous will power to sit down at a desk each day and write their ideas out, and edit them and polish them.

[BUT]…whatever you may think of their writing, I'm pretty sure Joyce Carol Oates and Steven King don't produce their many books by gritting their teeth. Rather, I suspect they really enjoy their work and look forward to thinking up stories, setting them out in new and creative ways, and sharing them. In other words, they are highly motivated, just as an Olympic athlete is highly motivated…So maybe my wishing for will power is beside the point. Maybe what I really need is to focus more on enhancing motivation. [posted December 7, 2007].

The blog discussion was interesting for purposes of the present chapter and volume for a number of reasons. For one, the issue was one that generated a lot of discussion. Clearly, the topic was seen as important to individuals' everyday lives, which is important if we propose to understand the phenomenon in terms of everyday self-regulatory processes. Second, the discussion illustrated that individuals recognize a kind of dichotomy in their motivation. On the one hand, there is motivation that seems unregulated or not intentionally controlled, a kind of motivation that appears to arise naturally when we are doing something that we enjoy or find interesting. This is the kind of motivation that in the psychological literature is often termed "intrinsic motivation" (Lepper & Henderlong, 2000). Individuals see this motivation as distinct from motivation to perform activities because they are valued and/or believed to be beneficial in some way. In the psychological literature, this kind of motivation is often termed "extrinsic motivation" (Deci & Ryan, 2000). According to much of the psychological literature as well as lay theories, it is the second kind of motivation that requires active regulation to initiate and maintain.

As "Mick's" post illustrated, however, it is possible that regulation of both kinds of motivation may be needed in order to sustain activities over the long term. The Self-Regulation

of Motivation (SRM) model (Sansone & Thoman, 2005) attempts to integrate both kinds of motivation within one self-regulatory process. The model suggests that there are goals-defined and experience-defined motivations, that they influence each other, and that both can be regulated. The model also suggests that the nature of the relationships means that at times there will be self-regulatory trade-offs. In the present chapter, I will first briefly describe the model and then present results from recent research that illustrates different kinds of trade-offs that are identified once one looks for the presence of both kinds of motivation. In the final section, I will discuss implications of these trade-offs for "optimal" functioning.

Self-Regulation of Motivation Model

       Overview of the general model. Figure 1 illustrates our model of the self-regulation of motivation process (Sansone & Harackiewicz, 1996; Sansone & Smith, 2000; Sansone & Thoman, 2005) captured at a particular point in time. Although described in detail elsewhere, several points from the model are worth noting for the present volume. First, it is important to distinguish the higher-level individual and contextual factors (e.g., personality traits, age, culture) that may often direct motivation across many situations from the direction of motivation in a particular situation. The direction in a particular situation is reflected in individuals' goals, which may vary within the person over time. In terms of directing motivation, goals reflect both the "what" (e.g., complete the task; score better than a standard) and the "why" (e.g., to achieve; to have fun) of activity engagement (what Harackiewicz and Sansone (1991) termed "target goals" and "purpose goals," respectively). The motivation to reach these goals can vary in intensity, as a function of how much the individual values the goals and expects to attain them (Eccles, 2005). For many in the online discussion, then, this kind of motivation is the locus of "willpower."

Knowing the direction and intensity of individuals' initial motivation as they begin an activity is not sufficient, however. There is also motivation associated with the experience while engaged in the activity—that is, motivation that results from whether the experience is interesting. We suggest that distinguishing interest from other related constructs such as value or general mood states is critical because of the distinct motivational properties associated with the experience of interest (Sansone & Smith, 2000). For example, individuals learn things more quickly when they are interested, will choose those activities more often when given a choice, and will persist longer once they start (Alexander, Jetton, & Kulikowich, 1995; Lepper & Henderlong, 2000). When engagement it motivated by interest, individuals may think about the activity even when momentary engagement is interrupted or completed, and voluntarily practice skills (Krapp & Fink, 1992; Renninger, 2000). Although interest involves a strong affective component, it is also defined by a strong cognitive component, and is by definition meshed with an activity or activities (Krapp, 2000). Moreover, although in general interest is experienced as a positive state, on occasion interested engagement may be associated with negative affect (e.g., when frustrated in response to a crosswords puzzle clue or when watching a sad movie).

Even though our model distinguishes experience-defined ("intrinsic") from goals-defined ("extrinsic") motivation, the model also suggests that it is important to understand the relationship between them in any given circumstance. That is, experience-defined and goals-defined motivation may work in complementary or opposing directions, or may be interrelated over time (e.g., Eccles, Adler, & Meece, 1984; Lepper, Greene, & Nisbett, 1973; Sansone & Smith, 2000). For example, if a student who is motivated to get a good grade in a class (goals-defined motivation) finds reading the assigned class material to be interesting (experience-defined motivation), then the student's actions will be oriented in the same direction by both

kinds of motivation. In this circumstance, individuals are more likely to focus attention on the task, persist, and resume the activity when given the opportunity in the future.[1]

If the experience of reading the class material is uninteresting, however, then the motivation associated with the experience pushes in a different direction (quitting) than the direction associated with the individual's goal (persisting). For an individual to persist under these circumstances, his or her motivation to reach the goal needs to be stronger than the motivation to experience interest. Thus, like the intuitive psychologist, we suggest that the strength of the motivation to reach the goal is important. However we suggest the caveat that it is important to understand its strength relative to the motivation to experience interest.

Furthermore, our model suggests that if individuals do not have sufficient goals-defined and/or experience-defined motivation, they may be unmotivated, but they do not necessarily have to remain so. Instead, individuals may purposely engage in actions to enhance their motivation (maintenance strategies). One option is to engage in strategies that enhance motivation to reach the goals (e.g., reminding oneself about the importance of getting a good grade in a class) (Wolters, 1999; Wolters, 2003). The option of enhancing goals-defined motivation reflects the notion of strengthening willpower as typically discussed. Baumeister, Vohs, Tice and colleagues (e.g., Baumeister, Gailliot, DeWall, & Oaten, 2006) suggest that it may be possible to enhance this kind of motivation through practice. Using a muscle analogy, these researchers suggest that regularly making oneself persist toward goals despite interest level or difficulty (i.e., using the "muscle") may develop into greater characteristic motivation to persist toward goals.

As noted in our model, however, motivation to reach the goals is itself one source of the interest experience, and so strategies used to enhance goal-defined motivation may also affect

experience-defined motivation, in positive or negative ways (e.g., coming to care more about achievement may enhance involvement, but feeling more anxious about possible failure may be distracting). Thus, regulation efforts aimed at increasing goal-defined motivation can increase persistence despite the lack of interest. But by affecting the experience during activity engagement, these strategic actions can also end up influencing experience-defined motivation (Ferguson & Bargh, 2004).

In addition to the option of enhancing goals-defined motivation (and perhaps indirectly affecting experience-defined motivation), a second option is for individuals to engage in maintenance actions with the intention of making performance of the activity more interesting (e.g., trying to make connections between the reading and everyday life). Individuals are more likely to engage in interest-enhancing strategies when they feel it is important to persist at an uninteresting task, and so "extrinsic motivation" can paradoxically lead to greater "intrinsic motivation" if it motivates the effort to regulate interest. One potential consequence of choosing this option, however, is that actions that make the experience more interesting can also interfere with or delay reaching the goals (e.g., time spent on surfing the web for related material may come at a cost to time spent studying assigned material).

The role of individual differences. In conceptualizing motivation as part of a self-regulatory process that unfolds over time, we can also start to identify places where characteristic differences between people can result in a different picture of the motivation process. The double lines in the figure illustrate relationships among these variables that may be moderated by individual differences. Research from a variety of perspectives has identified important differences in the goals individuals characteristically hold, and in the goals they adopt in a particular context (e.g., Cantor & Kihlstrom, 1987). Even when holding the same goals,

however, research suggests that individuals may vary in how motivated they are to reach them, because they differ in how much they value the goals and expect to attain them (Eccles, et al., 1984).

In contrast to work on goals and goals-defined motivation, much less research has examined how personality or individual differences may impact experience-defined motivation. However, research that has been done suggests that the differences may come more from how a given individual difference influences different points in the process, rather than in terms of general dispositions to regulate interest (see Sansone, Thoman, and Smith, in press, for a review).

The Appearance of Tradeoffs in The Motivation Process

Sansone, Weir, Harpster and Morgan (1992) found that individuals assigned to do a repetitive copying task engaged in interest-enhancing actions (varying how they copied the letters or reading interesting incidental text) primarily when given a good reason to value the task (i.e., when told that there were health benefits). Use of these interest-enhancing strategies was associated with greater likelihood of performing the activity again in the future, and the strategies become incorporated into how individuals defined the activity. Thus, without any instruction or direction by the experimenters, individuals systematically changed the activity into something more interesting to perform.

Use of these strategies was also associated with fewer letters being copied during the time period allowed, however. This finding suggested that there may be unintended consequences when individuals regulate interest. A later study by Sansone, Wiebe and Morgan (1999) suggested that the nature of the consequences depended on the time frame involved. In their study, rather than have a set time period in which to copy the letters, individuals were told to copy for as long as they needed to be able to evaluate the task. As found in the Sansone, et al.

(1992) study, when given a reason to value the task, individuals were more likely to vary how they copied the letters. In the Sansone, et al. (1999) study, however, use of this strategy was associated with *more* letters being copied, because individuals persisted longer on the task. These early studies suggested that there may be tradeoffs between regulating interest and performance on the task, at least when the strategy used to regulate interest took time away from the performance goal.

We thus became interested in the possibility of trade-offs that may be a necessary and critical part of the motivation process in everyday life. As a first step, we examined whether the tradeoff between interest and performance that was found on the laboratory task could be found in a real life achievement context, where performance has actual consequences for the individual. We thus examined individuals' self-reports of motivation regulation in the context of online college classes, attempting to identify some of the parameters of potential trade-offs. We then extended our examination by comparing the motivation to maintain positive self-views with the motivation to experience interest. We looked in particular at the effects of attributing relatively negative performance feedback to bias, comparing effect on both self-esteem and on interest in an activity.

Trade offs between maintaining interest and maintaining performance

One parameter that appears to be important in determining the presence of trade-offs is whether individuals use strategies to regulate interest that are compatible with how performance is evaluated (Lepper & Henderlong, 2000). For example, with the copying task used in the Sansone, et al. (1992) study, the available strategies to regulate interest (varying how they copied and reading incidental text) were incompatible with copying as many letters as possible in a short, timed period, but at least some individuals chose to do them anyway. It is possible that in real

life tasks with negative consequences for poor performance, individuals may avoid strategies that are incompatible with performing well. For example, if the motivation to reach the goal (e.g., getting a good grade) is strong enough, individuals may persist on the task (e.g., reading assigned material) without attempting to regulate interest. Alternatively, individuals may only choose strategies to regulate interest that are compatible with good performance. For example, Meyer and Turner (2002) described a sixth grade student who made writing assignments more interesting by purposely writing more than was required. In this case, the strategy would result in greater performance as assessed by the instructor. Either possibility would suggest that when the outcome is important enough, there will be no trade-offs, because the interest experience takes a backseat to achieving the outcome.

　　We thus examined these different possibilities within the context of real college classes. In the first study, we compared students' self-reports of strategies to motivate themselves to study in an online and an on-campus section of the same upper division course in cognitive psychology. Because the two sections were taught by the same instructor and teaching assistant during the same semester, and used the same web site, we were able to compare whether the learning context affected both the kinds of strategies individuals reported using, as well as the effects of using the strategies on interest and on performance (grades in the course). In addition to the usual information about the course that was posted on the web site (e.g., syllabus, test reviews), the web site included non-required but interesting links to demonstrations and further information about particular topics. We assessed students' self-reported use of strategies to motivate studying for the first exam, and looked in particular at the reported use of the strategy of making studying more enjoyable by exploring the non-required links on the class web page. We also assessed students' interest in the class and topic, and their grades.

We found that students in the online section were more likely to report using the strategy of exploring the non-required links than were students in the on-campus section, even though both sections had the same access to the web site. More importantly, use of the strategy within the online section was related with greater reported interest in the topic of cognitive psychology. However, it was also associated with a lower grade on the midterm, and a lower final grade in the course. (Sansone, Smith & Thoman, 2003).

We speculated that perhaps the time spent exploring non-required links on the topic took time away from studying the required content. However, it was also possible that the strategy was a marker, or stand-in, for the real variable that was responsible for lower grades. In particular, it was possible that students who were less concerned about grades to begin with were more likely to spend time exploring the non-required links *and* to get lower grades. Because we had not measured students' goals at the beginning of the semester, we could not rule out this possibility. In addition, because the students were enrolled in an upper division class for psychology majors, we were unable to assess whether greater or lesser interest really mattered to future intentions, because as majors virtually all students intended to take more classes in psychology.

Thus, in a subsequent study we examined students enrolled in online introductory psychology courses. We assessed students' goals at the beginning of the semester through an open-ended question, their self-reported use of the strategy to make studying more enjoyable by exploring the links on the course web page at the midterm, and interest in the topic, likelihood of learning more about the topic and taking additional courses, and course grades at the end of the semester. We coded the initial open-ended goals question in terms of whether students spontaneously cited as their goal to get a good grade, to learn more about psychology, or both.

As suspected, students whose primary goal was to get a good grade were less likely than students whose goal was to learn about psychology to have reported using the strategy of exploring non-required links on the course web page. When students with grade goals *did* report exploring the links, their midterm grades tended to be lower. However, their use of this strategy was also associated at the end of the semester with a greater likelihood of learning more about the topics and of taking additional psychology courses, whereas their grades were unrelated to future intentions.

In this case, then, use of strategies to enhance interest in the topic by those students whose primary goal was achieving good grades may have come at the short-term cost of achieving their grade goal. However, in the longer term, use of the interest-related strategy predicted greater likelihood of future engagement in the field. For students who began the introductory course with the primary goal to learn about psychology, in contrast, using the strategy of exploring the links tended to be less critical in predicting future intentions. That is, regardless of the use of this strategy, they began and ended the semester with a high degree of interest in the topic, and reported greater likelihood of taking future psychology classes relative to those whose primary goal was to get a good grade. These results suggest that the regulation of the situational experience of interest may be more critical in predicting future engagement for those students whose initial exposure to a field was not directed by interest. In contrast, situational fluctuations in the interest experience may be less important once interest in the domain is established.

Together, these classroom-based studies suggest that it is the use of interest-enhancing strategies that is responsible for both positive and negative effects on students' motivation and performance, rather than that strategy use serves as a marker for some other variable (Sansone,

Smith, Thoman, & MacNamara, 2008). Moreover, these results suggest that the process of regulating interest may at times delay or interfere with attaining the outcomes that presumably motivated initial engagement, even when the outcomes and the activities have real world importance to the individuals. Whether the delay or interference represents acceptable short-term vs. long-term trade-offs for the individual (if not for the teacher or employer) may only be discernible over time.

Trade offs between maintaining positive self views and interest

One of the more widely researched areas of motivation has to do with maintaining or protecting positive views of self. An important domain of application has been to understand how this motivation affects individuals' choices to select and persist in activities when they are members of groups about which negative performance stereotypes exist (e.g., females in science, African-Americans in academics more generally). For example, research has suggested that individuals may strategically attribute the cause of negative feedback to bias rather than to their own performance, and thus maintain positive views of their own competence (Crocker and Major, 1989). Because attributing negative feedback to bias maintains feelings of efficacy, one might expect that a consequence would be to promote or maintain motivation to work on the related activity (Bandura, 1982). However, researchers have suggested that these individuals may also come to devalue the domains in which negative stereotypes exist (Graham, Taylor, & Hudley, 1998; Steele, 1997). Thus, the value of achieving decreases, even though expectations of success are protected.

The lower motivation to select and persist at activities in domains for which negative stereotypes exist is thus attributed to lower motivation to attain achievement outcomes—that is, lower goals-defined motivation. Based on our model, however, Thoman and Sansone (2008)

suggested that there was a missing piece to our understanding of the process—that is, the motivation derived from the experience of interest. From the model's perspective, the tradeoff between maintaining positive views of self and motivation in stereotyped domains may not be due solely to goals-defined processes. If this is the case, then interventions to increase motivation might be of limited success if they do not acknowledge or address experience-defined motivation in addition to goals-defined motivation.

To examine this possibility, we (Thoman and Sansone, 2008) looked in particular at the circumstance of receiving less positive feedback than someone else for what seems to be similar levels of work. This circumstance is one avenue through which modern forms of prejudice and discrimination occurs ((e.g., Devine, 1989; Dovidio, 2001). Individuals from groups about which negative stereotypes exist have been shown to receive greater scrutiny and/or be judged against different standards (Biernat & Kobrynowicz, 1997; White & Harkins, 1994), resulting in differential feedback for the same work. As noted, being able to attribute the cause of this differential feedback to group-based bias can protect individuals' views of themselves. But what might it do to how individuals feel about the *activity?*

In three studies we compared the effects of receiving differential achievement feedback for similar work on both goals-defined (perceived competence, competence value, task value) and experience-defined (activity interest) processes, and examined the ability of these processes to predict two outcomes: self-esteem and future motivation to select or persist at the same or related activities. We examined whether these effects differed as a function of the reason for the differential feedback (i.e., whether clearly due to group-based discrimination), and compared the experiences of benefiting from as well as being harmed by the bias.

In the first study we asked participants to report experiences from everyday life when they had received more and when they had received less positive feedback than someone else for what they perceived to be equivalent work. Ratings of perceived competence at the activity were equal across the experiences, but individuals tended to rate the value of that competence lower and report lower activity interest for the experiences where they were harmed by versus benefited from the feedback. In follow-up lab studies, all participants (women in Study 2 and men in Study 3) performed the same novel science activity alongside an opposite- sex confederate, and "accidentally" overhead the experimenter choose the male as the outstanding group member even though his performance was similar to the female peer. Participants were randomly assigned to overhear a reason for this choice that ranged from no reason to clear gender bias (i.e., choosing the male because in general males do better than females in science).

In Study 2, being harmed by differential feedback that was clearly due to gender bias (v. control conditions) led to women reporting marginally *higher* perceived competence and lower competence value. It also led to lower activity interest, and this effect was *not* mediated by the effects on the expectancy-value processes (perceived competence, competence value, or task value). Interest in the forensic science activity was the only predictor of subsequent interest in finding out about related forensic science careers. . In contrast, perceived competence was the only predictor of self-esteem. The results confirm a potential trade-off between maintaining self-esteem and motivation, but this tradeoff was not within the goals-defined processes. Rather, being harmed by differential feedback when the unfair reason was clearly due to gender bias negatively affected activity interest independent of effects on goals-defined motivational processes. The same feedback positively (though marginally) affected perceived competence,

which, in turn, tended to predict higher self-esteem. The effects for self-esteem were independent of effects on activity interest and future motivation.

In Study 3 we examined whether similar trade-offs occurred when individuals benefited from group-based bias. In this case, men benefiting from differential feedback that was clearly due to gender bias (v. control conditions) reported *greater* activity interest. In contrast to when women were harmed by the feedback, the increased interest for men was mediated by a goals-defined process: task value. The more clearly that benefiting by differential achievement feedback was due to gender bias, the more men valued the task, and greater valuing of the task was associated with greater interest in the task. In turn, interest in the task was the only significant predictor of interest in finding out more about related careers. In contrast to when women were harmed by the feedback, therefore, it appeared that the goals-defined and experienced-defined motivational routes were more interconnected.

Also in contrast to Study 2, there were no feedback effects for perceived competence and competence value, suggesting that with no threat to protect against, men appeared to be more likely to appraise the feedback as lacking information about individual competence. As a result, men's self-esteem was not affected by the feedback. Subsequent analyses suggested that even though the feedback did not affect perceived competence, perceptions of competence at the activity did still tend to predict self-esteem. Thus, competence-related processes were important for men's self-esteem, but did not explain men's greater interest in the activity and in learning about related careers after benefiting from gender-biased feedback.

In both studies, activity interest was the most proximal predictor of whether individuals requested information about related careers (future motivation). In contrast, self-esteem was predicted by perceived competence at the activity, but not by interest. This suggests that

motivation to view the self positively and motivation to experience interest can work in parallel, but that strategies that positively affect one can simultaneously negatively affect the other. This pattern suggests a dilemma for individuals who are members of groups for which negative competence stereotypes exist. In particular, if they receive relatively negative feedback on their performance, is it better to attribute the cause of the feedback to bias?

On the one hand, doing so may preserve feelings of competence. However, the same attribution is associated with lower interest in the activity, which in turn, is associated with lower likelihood of pursuing that or related activities in the future. On the other hand, if the person who receives the feedback believes it is justified, his or her perceptions of competence may be negatively affected, which in turn predicts lower self-esteem. In contrast, there appeared to be no dilemma when individuals receive positive feedback in the domain for which their group has positive competence stereotypes. In this case, attributing the feedback to group bias may at times lead to greater motivation to select and persist on related activities, with no effect on self-esteem.

As with trade-offs between performance and interest, therefore, it appears that there are certain parameters that predict whether motivation to protect or enhance the self and motivation to experience interest work together, in parallel, or in opposing directions. It also suggests that interventions aimed at overcoming deficits in goals-defined motivation only may not be sufficient to counter the detrimental effects of negative competence-based stereotypes.

Implications of Self-Regulatory Trade-Offs For Understanding Motivation, And Its Lack

As noted at the beginning of the chapter, being able to control our own motivation is an important self-regulatory problem. Willpower, or the motivation to persist at something even when one is tired, bored, stressed, and so on, is clearly an important attribute of successful self-regulation. What "Mick" suggested, however, is also true—that is, when we are talking about

maintaining motivation over a longer time period, it becomes necessary to take into account the

degree of motivation that comes from interested engagement. One important implication of our

approach is that "self control" includes regulation of both kinds of motivation, not just goals-

defined motivation. Effective self-control from this perspective occurs when the individual is

able to regulate both in ways that fall within acceptable parameters for trade-offs. Who decides

these parameters, and what is considered acceptable, remain important questions.

For example, it is possible that what are considered acceptable tradeoffs changes at

different points in development (Hidi & Renninger, 2006). As we get older, striving for

achievement outcomes might become less important (Kanfer & Ackerman, 2004), because our

time frame changes (e.g., Carstensen, Fung, & Charles, 2003), or because we learn that

experiencing interest while we work provides greater meaning to our lives (e.g., Maehr, 1984).

In addition, recent research has begun to provide a picture of the importance of the regular

experience of interested engagement in preventing or postponing cognitive decline with age (e.g.,

Stine-Morrow, 2007).

The judgment of what is acceptable in terms of tradeoffs might also be moderated by

culture (whether nation-based, ethnicity-based, gender-based, etc.). For example, the Protestant

work ethic that characterizes the larger American culture places great emphasis on achieving

outcomes (e.g., success, wealth, beauty, slimness), with the result that goals-defined motivation

may be especially salient (e.g., Spence, 1985). This greater salience may mean that goals-defined

motivation is more important in explaining motivational differences within American culture—

or, at least, that it is seen as such. As a consequence, strategies that compromise goals-defined

motivation might be judged as ineffective, be discouraged, or prohibited (e.g., forbidding

conversations among coworkers). To the extent that these strategies promote interest, however,

constructing activities in a way that discourages their use may have the unintended consequence of decreasing the likelihood of long term engagement. This may be particularly important when the strategies are ones that subgroups of the society are more likely to use (e.g., individuals higher in interpersonal orientation, who are more likely to be female or come from collectivistic cultures (Thoman, Sansone and Pasupathi, 2007), may be more likely to want to use the strategy of conversing with others).

In conclusion, effective self-regulation involves the regulation of both goals-defined and experience-defined motivation. Willpower is important for maintaining motivation to perform important and valued activities. It is necessary, therefore, but may not be sufficient, particularly for activities that are maintained over the long term. Conversely, having interest in what we do can be a powerful motivator, but even interesting activities can become boring over time and with repetition. The tradeoffs inherent in regulating this mutually interdependent motivation process means that standards for judging what is "effective" may be continually shifting, depending on the point in time and who is doing the judging.

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Footnotes

[1]For the purposes of the present paper we have focused on outcome goals. However, individuals may also begin an activity with "process" goals (e.g., to have an interesting or fun experience), and research on motivational orientations suggests that some individuals may be more likely to characteristically approach activities with these process goals (Amabile, Hill, Hennessey & Tighe, 1994; Ryan and Connell, 1989). From our perspective the self-regulatory process is the same. That is, there is still motivation associated with the initial goals (in this case, motivation to have a particular kind of experience) and motivation that arises from the actual experience once engaged in the task. When the experience *is* interesting, then both sources of motivation are compatible. If individuals are mistaken in their expectations about the task or become satiated after doing the task for a while, however, the motivation based on the experience will be in conflict with initial goals, and individuals will then face the same choice about whether to quit or persist (and under what conditions) that they do when the initial goals are outcome goals. Furthermore, although we have included the "extrinsic" and "intrinsic" labels to help connect to previous research, our perspective suggests that attempting to define motivation in terms of whether the goal of engagement is "intrinsic" or "extrinsic" to an activity is difficult because the activity definition is fluid and can change over times, contexts, and people. We thus prefer to make the distinction in terms of goals-defined or experience-defined motivation, with the knowledge that this distinction often, but not always, maps onto the traditional "extrinsic" and "intrinsic" motivation distinction.

Figure Captions

Figure 1. Self-regulation of motivation model (adapted from Sansone and Smith, 2000). The left-hand side of the figure illustrates the part of the process that occurs within the individual; the right-hand side of the figure illustrates the role of the context at various points in the process. In the middle lies the "activity", which is composed of the actions resulting from the transaction among individuals' goals, task characteristics, and the context in which the person performs the activity at a particular point in time. Double lines indicate relationships that may be moderated by individual differences. For simplicity's sake we have illustrated a "snapshot" of this process at a particular point in time. Over time, however, we expect that the individual and contextual characteristics will have a reciprocal influence.

Individual Characteristics

e.g., personality traits, gender, age

Contextual Characteristics

e.g., objective task characteristics, interpersonal context

Goals

Motivation to reach goal(s)

Value x Expectancy

[Goals-Defined Motivation]

Interest Experience

[Experience-Defined Motivation]

Activity

Initial actions

Maintenance actions

Evaluation

Persist, Quit, or Resume