DRAFT 11/26/05

Talking about interest:

Exploring the role of social interaction for regulating motivation and the interest experience

Dustin B. Thoman, Carol Sansone, & Monisha Pasupathi

University of Utah

380 South 1530 East, Room 502

Salt Lake City, UT, 84112

e-mail: dustin.thoman@psych.utah.edu

or carol.sansone@psych.utah.edu

RUNNING HEAD: Regulating interest socially

Key words: interest, self-regulation, intrinsic motivation, interpersonal emotions, social construction

Abstract

The Self-Regulation of Motivation Model suggests that the experience of interest is an important source of human motivation and that people often strategically regulate the experience of interest. Previous work based on this model suggests that the social context may influence this process at multiple points. The present research focuses on whether talking to others about an activity experience is one means by which individuals evaluate how interesting that activity is. In Study 1 college students completed questionnaires that asked about real life experiences where working on an activity was more interesting because they worked with others. They described experiences that occurred first in any domain, and then that occurred specifically in the school domain. Results suggested that the more students talked with others about the activity *after* it happened the more they reported greater interest in the activity after the conversations. In the school domain, this was especially true for Latinos and for individuals who scored higher on the Relational Self-Construal scale. Study 2 employed a lab paradigm to control for the task that individuals talked to others about and to examine whether the nature of listeners' reactions influenced the speaker's interest even after the study was ostensibly over. First, replicating Pasupathi and Rich (2005), college students who talked to a distracted friend about a computer game during the lab session reported a significant drop in interest relative to those who talked to attentive friends, regardless of whether the attentive listeners agreed or disagreed with participants. Importantly, interest ratings at a 4 to 6 week follow-up were affected by the perceived responsiveness of listeners during spontaneous conversational retellings outside the lab, controlling for interest levels at the end of the lab session. Taken together, results suggest that social interaction plays an important role in regulating activity interest even beyond the immediate activity experience.

Every New Year's Day, many of us set goals to frequent the gym more often— to get ourselves in better shape and maybe lose a little weight. The goal of improving one's physique often prompts us to buy a gym membership and develop a workout routine. Although motivation to reach this goal can be strong enough for some people to keep them in the gym throughout the year, many of us wake up one day, think about going to the gym, and say to ourselves, "I don't feel like it." In trying to understand these failures to self-regulate, researchers have often focused on characteristics of the activity (e.g., difficulty of the work out), characteristics of the person (e.g., importance of the goal of being in shape or losing weight; self-efficacy in accomplishing that goal), and their interaction, as the most proximal factors in determining whether an individual sustains motivation to perform a particular activity over time. The surrounding context is often considered an important but more distal factor, in terms of the degree to which it may support or interfere with self-regulation (e.g., competing time demands; inconvenience of getting to the gym). This common example highlights the fact, however, that people often need more than just goals and rewards to sustain motivated engagement over longer periods of time.

To maintain motivation, people generally need a positive affective experience with the activity; but more specifically, we need an affective experience that is directly linked to motivation. In our work, we consider this affective motivational component as the interest experience (Sansone & Thoman, 2005b). By acknowledging the important role that experience-defined motivation plays in our day-to-day regulation of behavior, our theoretical framework suggests that one should examine how different factors influence the person's experience of interest while working toward a particular goal in addition to examining how these factors influence motivation to reach the goal. For example, our model suggests that having a regular "workout buddy" may contribute to the degree of interest a person experiences while working

through his or her exercise routine, in addition to providing a supportive context for the person's pursuit of his or her fitness goal. Thus, the social context may have a more proximal role in an individual's motivation (by contributing to interest) in addition to its more distal role (by providing a supportive context). Even though in this example the workout buddy is having a positive effect on both kinds of motivation, it is important to distinguish between these effects because this might not always be the case. We next briefly describe our model, starting with a discussion of why we distinguish the interest experience (and the self-regulation of interest) from more general positive affect as the complimentary process to goals-defined motivation, before examining more closely the multiple routes through which the social context can affect the process of regulating motivation.

Importance of the interest experience to motivation

Positive emotions are central to the study of psychology because they 1) serve as markers for optimal well-being and 2) produce optimal functioning (Fredrickson, 2002). Although the presence of interest can be considered a marker for optimal well-being (Hunter & Csikszentmihalyi, 2003), the importance of the interest experience in our model stems from its contribution to producing and sustaining optimal motivation. Before we discuss how interest functions in our Self-Regulation of Motivation model, however, we will first detail why we distinguish interest in our model from positive affect more generally and from other positive emotions.

What's so special about interest?

In addition to its generally pleasant subjective experience, one of the most commonly regarded functions of positive affect is that it facilitates approach behavior (Cacioppo, Gardner, & Bernston, 1999; Davidson, 1993; Watson, Wiese, Vaidya, & Tellegren, 1999) or continued

action (Carver & Sheier, 1990; Clore, 1994). If we consider this property alone, it would seem that positive affect, rather than any specific emotion, should function as the affective component of motivation. However, as Fredrickson (2001) notes, "…functional accounts of positive emotions that emphasize tendencies to approach or continue may only capture the lowest common denominator across all affective states that share a pleasant subjective feel, leaving additional functions unique to specific positive emotions uncharted" (pp. 219). Although other positive emotions, such as joy, love, contentment, and pride possess a similarly pleasant subjective state as interest[1], they are not similarly linked to the action tendency in line with motivation that is associated with interest. All of these positive emotions may serve to broaden thought-action repertoires (Fredrickson, 2001) and serve as a resource for the self (Aspinwall, 1998), but only interest can be described as generating, "a feeling of wanting to investigate, become involved, or extend or expand the self by incorporating new information and having new experiences with the person or object that has stimulated the interest" (Izard, 1977, pp. 216).

Based on a specific appraisal structure of novelty and coping potential that differs from other positive emotions such as enjoyment (Silvia, 2005), interest tends to promote exploration with the target activity for its own sake and is associated with greater attention, knowledge retention, choice, and persistence with the target of interest (see Sansone & Thoman, 2005b for review). At its extreme, interest may be experienced as "flow" (Csikszentmihalyi, 1975). The motivational outcomes associated with the specific emotion of interest, as well as the fact that interest must be experienced within a particular activity context (e.g. Krapp, 2000) distinguishes interest from other positive emotions. Our definition of interest is closer to 'situational' than 'individual' interest (see Renninger, 2000), although it is not derived solely by situational factors. Rather, we emphasize the <u>experience</u> of interest as a dynamic state that arises through an

ongoing transaction among individuals' goals, activity characteristics, and the surrounding context.

Overview of the Self-Regulation of Motivation Model

As mentioned above, the Self-Regulation of Motivation model suggests that motivation is based on a goals-defined and an experience-defined component. Although we discuss the model in more detail elsewhere (see Sansone & Harackiewicz, 1996; Sansone & Smith, 2000; Sansone & Thoman, 2005b), we will briefly describe our conceptualization of how the experience of interest functions as one of the two components within the overall system before exploring how interest regulation functions in the broader context of a social world.

Activity engagement often begins as goals-directed. That is, individuals often begin with an outcome goal and engage in the activity as means to achieve the goal[2]. This goals-defined motivation is often considered "extrinsic motivation" because the goals are typically defined in terms of an outcome rather than in terms of the experience of activity engagement in and of itself. From the opening example above, the goal of getting in better shape initially leads many people to work out at the gym. In this case, it is the goal of getting in better shape rather than the experience of working out or going to the gym that motivates activity engagement. Particularly for short-term activities, motivation to reach goals can be strong enough for an individual to maintain persistence even if the experience is boring or otherwise aversive. For longer-term activities, however, individuals may be more likely to quit working toward a goal, even if important, because the goal-defined motivation is not sufficient to offset the lack of motivation derived from the uninteresting experience.

Experience-defined motivation, or the motivation that results from whether the experience of working on the activity is interesting, serves as the complimentary motivational

component to goals-defined motivation in our model. This type of motivation is typically labeled "intrinsic" because it is defined in terms of the experience of the task itself. We consider goal-defined and experience-defined motivation to be interrelated during activity engagement over time[3]. For example, engaging in an activity in order to get a valued reward can make a previously interesting activity less interesting (Lepper, Green, & Nisbett, 1973). Alternatively, finding that a novel activity is interesting can contribute to its value, (Renninger, 2000). In yet other circumstances, the more important we may feel it is to persist at an activity the more effort we may put in while engaged, thereby increasing the possibility that we discover something about working on the activity that makes it interesting (Sansone, Weir, Harpster, & Morgan, 1992). In addition, rather than a particular goal being automatically associated with greater or lesser interest, we have found that what is more important is whether the goals are congruent with each other and the context. For example, receiving instruction that ostensibly improved one's score on a computer activity had different effects on interest depending on whether the individuals' goals were to score a lot of points or to explore the fantasy adventure (Sansone, Sachau & Weir, 1989).

Motivation to persist at or resume an activity is thus dependent on both kinds of motivation. It is when these motivations pull in different directions that whether and how individuals choose to regulate motivation becomes critical (Wolters, 1999). For example, what do people do when they still have motivation to become fit, but find engaging in their exercise routine boring? The person may choose to persist anyway, and researchers using a Self-Determination Theory framework (e.g. Deci & Ryan, 1987) have suggested that individuals may be more likely to persist at an uninteresting activity the more self-determined or autonomous

their reasons for initially engaging in the task (e.g. because they themselves value the task, rather because they hope to receive some reward).

Our model suggests an additional possibility, however. Although initial actions are typically directed toward achieving goals, once engaged in the task individuals may engage in maintenance actions directed at regulating the interest experience in addition to progress toward goals. They may be more likely to actively regulate the interest experience when they believe that there are good reasons to persist at the boring task. For example, Sansone, et al. (1992) demonstrated that individuals who were given a good reason (ostensible health benefits) to perform a boring copy task were more likely to spontaneously engage in interest-enhancing actions (e.g., vary how they copied the letters) than those who were not given a good reason to do the activity. In addition, the use of these strategies was associated with greater willingness to do the activity again in the future. Thus, when working alone on a boring activity, individuals do regulate their experience when there is a good reason to persist, and bringing the activity experience in line with their goals increases motivation for future behavior.

Considering intra-individual strategies of self-regulation alone, however, limits our perspective because even though we tend to think of motivation as a within-person system of processes, individuals are necessarily embedded within a social world. To gain a fuller understanding of how motivation functions, our work not only explores how people regulate interest intrapersonally, but how the social context within which the individual exists plays a role in regulating these motivation processes.

Regulating interest within a social world

The interpersonal context of interest regulation may be important in part because many of our daily activities occur within a social context, even if that social context is implicit (Baldwin

& Holmes, 1987). In a cross-sectional life span study, one key finding was the salience of interpersonal goals in everyday activities, including activities that take place in achievement contexts (e.g., school or work) (Sansone & Berg, 1993; Sansone & Morgan, 1992). Our model suggests that if individuals approach achievement activities with interpersonal goals, they should experience greater interest while working on the task when the context facilitates those goals. To test this hypothesis, Isaac, Sansone, & Smith (1999) identified individuals who should be more or less likely to approach activities with interpersonal goals (individuals higher or lower in interpersonal orientation (IO)), and asked them to engage in an achievement task (developing a plan and budget for a satellite college campus). Isaac, et al. also varied the presence or absence of other people (actually a same sex confederate). As the model suggested, people higher in IO reported greater interest in the activity and were more willing to work on future similar activities when working in the presence of someone else, regardless of whether they worked collaboratively or just alongside the confederate.

Importantly, Isaac, et al. also unobtrusively videotaped the sessions. They found that the amount and quality of interaction with the confederate predicted the participants' experience of interest. In particular, individuals higher in IO were more likely to converse in ways that elicited off-task conversation from the confederate, and the amount of off-task conversation initiated by the confederate contributed to greater interest. Importantly, off-task conversation was not associated with making more math errors while they worked. In contrast, the more that confederates initiated off-task conversation with lower IO individuals, the less interest lower IO individuals reported, and the more likely they were to make math errors while working. This pattern suggested that there was something about the conversations with others that were associated with greater and lesser interest for individuals higher and lower in IO.

Interpersonal processes may thus influence the self-regulation of motivation via multiple routes (see Figure 1 for an illustration of the Self-Regulation of Motivation Model that highlights the potentials paths through which interpersonal processes can influence the model). First, as noted, individuals may approach an activity with interpersonal goals as well as achievement goals (Sansone and Morgan, 1992), and this may be even more true for some individuals (e.g., women, people higher in interpersonal orientation, Strough et al., 1996). Figure 1 depicts this path of influence by the bold arrow from individual characteristics to goal. Next, even if individuals do not come to the situation with interpersonal goals, the activity context may provide this kind of goal (e.g., assigned to work with others). This path is represented in Figure 1 by the bold arrow from context characteristics to goals. Further, if an individual has interpersonal goals, he or she is more likely to initially take actions that will satisfy that goal, as long as context is congruent with/facilitates those goals (e.g., Morgan, et al., 2001). For example, the individual may choose to work with others if given the choice (i.e., if others are available in context and willing/able to work with the individual—see bold arrow in Figure 1 from context to initial action). In addition to effects on goals, working with others can also influence the extent to which working on the activity is interesting (Isaac et al., 1999). For example, working with others may be a means to reach an achievement goal, but the interactions with others may contribute to the degree of interest experienced, apart from whether or not it forwards any progress toward the achievement goal. This path of influence is represented in Figure 1 by the bold arrow from initial actions to interest as well as the bold arrow from context to maintenance actions.

Thus, previous work based on the Self-Regulation of Motivation model has empirically demonstrated multiple routes through which the social context can influence motivation

regulation by influencing goal-related processes or the experience while working on the activity, but the role of others in the evaluation component of the self-regulation process is underexplored. Specifically, research has focused primarily on how others may contribute to the evaluation of an individual's competence, his or her progress toward outcomes, and whether persistence is worthwhile (e.g., expectancy and value of meeting goals; Eccles, 1987). However, their contributions to the evaluation of the *experience*, and in particular, whether the activity was interesting, have not been examined. Our model suggests that others' contributions could feed back to interest as well as to motivation to reach goals, and according to our model, both kinds of motivation are important for understanding self-regulation. As with others' contributions to expectancy and value of reaching goals, the model suggests that this influence of others on the evaluation of interest may occur even after individuals have completed the task (or one session with the task), and even if others have not participated in the task just completed. Next, we draw from the literature on shared reality, social representations, and discourse to support our expectation that social construction of interest is possible.

Shared Reality, Social Representations, and Discourse: Social Context Extends Beyond the Activity Context Itself

Thus far in our discussion of interpersonal interest regulation, we have primarily addressed how the social context can be employed by individuals to regulate their interest during a necessary task. Just as interest exists both within and beyond the context of activity performance, the social context within which individuals operate likewise goes beyond the performance of the activity. A variety of theoretical perspectives emphasize how individuals' construals of an activity are intrinsically social – including theories of social representations (Moscovici, 1988; Stallworth, 1995), shared reality theory (Hardin & Higgins, 1996), and

theories of the social construction of autobiographical experience (McLean, Pasupathi, & Pals, in preparation; Pasupathi, 2001). Work by Stallworth (1995) and by Pasupathi and colleagues (2001) has emphasized the role of communicative or discursive processes in the construction of social representations in general, and autobiographical memories in particular. The basic premise of this work is that in conversations, people *jointly* construct understandings of their topic in ways that require them to arrive at shared representations of that topic (Clark, 1996). Those representations may be shared along multiple levels, ranging from the relevant dimensions for discussing the topic (i.e., in the case of abortion, in terms of rights to life or rights to privacy), to the specific pieces of information contained in one's memory of an experience (Pasupathi, Stallworth, & Murdoch, 1998; Stallworth, 1995). In the case of autobiographical memories, then, both the person recalling their past and those who listen to the recollection influence the resulting memory.

Moreover, the social construction of autobiographical memories includes not only factual information about what occurred during a personal experience, but also a host of interpretive and evaluative information. Thus, when someone talks about a recent exercise class, they not only talk about who went, when, and where, but also about how *interesting* this experience was, or how typical of their usual interests it was, and whether they might like to go again in the future. Further, the responses of their listener may influence the extent to which they maintain or alter the person's initial reactions.

We have commented elsewhere (Sansone & Thoman, 2005a) that much of the literature on feelings and emotions, in particular the role of emotions in learning contexts, tends to present a relatively static, intra-individual view of emotions within the self-regulation process. We emphasize here that the experience of interest (and evaluation of experience-defined motivation)

does not stop within the person at a single point in time. Rather, as the above discussion highlights, an individual's experience of how interesting a given activity is likely changes over time and may be influenced by ongoing social interactions, both during and following periods of actual activity engagement. The primary goal of the present research, therefore, is to empirically illustrate social and temporal influences on interest.

One likely explanation for how social interactions could change activity interest after the experience is through the causal role of appraisals in emotion, and the continuity of emotional appraisal and experience over time (Roseman & Smith, 2001). When subsequently discussing an activity experience, people could be recalling the appraisals that they made during the situation (Levine, 1997), and distortions may occur in that recollection process. In addition, individuals could be remaking or adjusting the initial appraisals. Thus, the continuity of experience over time (or lack thereof) stems from the continuity of appraisals over time, and the act of talking with others may change or maintain these appraisals. For example, conversations about the activity may metaphorically 'stand in' for doing the activity itself – that is, they allow people to revisit and re-experience the sensations of doing the activity, including interest. As such, support or disruption from listeners can undermine or impair the experience of interest, or can support it, much as conversations while doing the activity may operate. Conversations also serve as a medium through which others' reactions help to construct, socially verify, and thereby strengthen or weaken representations of an activity as valued, interesting, and worth pursuit (Nolen, 2001). This latter mechanism is consistent with other work on symbolic self-verification (Gollwitzer & Wicklund, 1985), in which self-perceptions garner strength and validity to the extent that others verify their validity. Thus, if others appear interested when a person subsequently talks about the activity experience, his or her initial interest level may be maintained or enhanced. Conversely,

if others appear disinterested, the individual may also come to feel that the activity is less interesting as well.

Two studies (Pasupathi & Rich, 2005) support the notion that speakers seek to have their view of an event socially verified in conversation, and that when a listener is not responsive, that social verification is absent. In one of those two studies, participants experienced a novel computer game for the first time. After playing the computer game, they rated their initial level of interest in the game. They then spoke with a same-sex friend who was randomly assigned to be attentive, disagreeable, or distracted/unresponsive. Following their conversation, they again rated their interest in the game. Those participants in the attentive and disagreeable conditions did not change their perceptions of the game as interesting, while those who spoke with a distracted friend reduced their perceived interest in the game. These results suggest that engaging in conversations about an activity can change interest in the activity, depending on how others respond during those conversations.

The present research

In two studies, we seek to clarify the underexplored routes through which others may influence interest. In the first study we ask college students to describe times from their own lives where they participated in an activity that was made more interesting by working with someone else, and then ask how frequently they talked to others (collaborators and noncollaborators) about the activity after it was completed, and whether these conversations predicted interest in the activity. We also asked whether students felt that they had a choice about whether they worked with others, and tested whether the perceived choice is related to person characteristics that might reflect a greater interpersonal orientation as well as whether the relationship between conversations and interest differs as a function of perceived choice.

Although this approach allows us to gain a sense of what this interpersonal role in interest regulation may look like in everyday life, these retrospective descriptions and reports have a number of important limitations. For one, the activity that was made more interesting by working with others is free to vary, and so it is possible that some *activities* are both more interesting themselves and more interesting to talk about, but talking may not cause the interest. Similarly, some *people* may find the activities more interesting, and this greater interest lead to greater conversation, rather than the reverse. Thus, in the second study we use a laboratory paradigm where all college students perform the same novel activity, and are then randomly assigned to talk with others under conditions where others' reactions are manipulated. We will examine the results of these conversations on immediate interest as in Pasupathi and Rich (2005). More importantly for the present paper, however, we will also examine whether individuals spontaneously talked with others about the activity after the experiment was ostensibly over, and whether the perceived responsiveness of others during these subsequent conversations predicted later interest when the effects of the lab-based conversations were controlled. These latter self-reports correspond to the kind of self-reports collected in study 1, but in Study 2 we will have controlled for the activity and for others' initial reactions in conversation. Together then, these studies serve as our preliminary examination of whether other people are integral to the regulation of motivation to persist or resume an activity beyond the immediate activity experience, by providing important input into the individual's current evaluation or appraisals of how *interesting* the activity is .

Study 1: Regulating interest interpersonally in everyday life

Method

Participants. Participants were 188 undergraduates (54% female; 76% European-American, 5% Latino/Hispanic, 7% Asian/Asian-American, 11% Other/Multiple) enrolled in psychology courses, who participated in exchange for course credit.

Procedure. Participants completed an anonymous questionnaire in small groups. After reading the cover page, participants were asked to think of a time in the last year when working on something was more interesting because they did it with someone else. They were asked to state how long ago this occurred and provide a short description of the event. After the description, they were asked several closed-ended questions to obtain information about the frequency with which they talked with their collaborator(s) and with others both prior to and after working on the activity (all rated on 1 (not at all often) to 5 (very often) scales), as well as their perceptions of whether they found the activity more or less interesting after these conversations (rated on a five point scale with 1=less interested, 5=more interested, and 3=about the same). After completing their evaluation of this unconstrained domain description, participants were asked the same questions two more times, directed specifically to be about a school- or work-related activity (presentation order was counterbalanced).

Finally, individuals completed demographic questions as well as a number of individual difference measures presented in random order. We were particularly interested in possible effects associated with gender and ethnicity, as females have been found to have a somewhat greater interpersonal orientation than males (Morgan, Isaac & Sansone, 2001; Strough, Berg & Sansone, 1996), and individuals from Hispanic/Latino and Asian backgrounds have been described as coming from cultures with a greater emphasis on collectivistic values relative to European-American (e.g. Ahlering, 2003). In addition, embedded in the individual difference measures was Cross, Bacon, and Morris' (2000) 11-item measure of Relational Self-Construal

(RISC), which is proposed to capture differences in the degree to which individuals define themselves in terms of their relationships with others. Each item (e.g., "When I think of myself, I often think of my close friends or family also") was rated on a 1 (strongly disagree) to 7 (strongly agree) scale. RISC scores ranged from 24 to 68 in our sample, with higher scores reflecting greater relational self-construal.

Study 1 Results

Unconstrained domain. Participants' descriptions were coded for the domain in which the activities fell, to determine whether interpersonal regulation of interest was limited to interpersonally-defined domains (i.e., family and friends). Thus, two independent coders read each description and assigned it to one of the following domain categories: work, school, family, friends, or other (inter-rater agreement= 100%). We found that 20% of participants spontaneously described activities in the friends domain, and only 8% described activities in the family domain. Supporting the overall importance of the social context to interest, the most frequently cited domain was school (36%), with an additional 20% describing activities related to work. Thus, when free to talk about activities in any domain that were made more interesting by working with others, over half of the participants chose to describe activities that took place in traditional achievement contexts. Within these school and work domains, slightly over half of the students reported that working with others on the activity was their choice (work, 51%, school, 57%), and these proportions were significantly different from those reported for interpersonally-defined domains (family, 88%, friend, 84%) (X^2 (4) = 17.98, $p < .05$). Together, these data suggest that for the college students in our sample, interpersonal regulation of interest was most salient for school-related activities, despite this context's emphasis on individual achievement. Moreover, even though perceived choice to work with others was much greater in

the interpersonal domains of friends and family, over half of the students felt that it was their choice to work with others on the school-related activity, suggesting that these students perceived the opportunity for social interaction in this achievement context as *self*-regulated.

Of course, all students were describing activities where working with someone else made the activity more interesting, and the data on domain and choice do not address how working with others might result in greater interest. Thus, we turn next to the self-reported conversation variables. Based on the shared reality, social representations, and discourse literature discussed above, we were particularly interested in participants' reports of conversations about the activity that took place after the activity was completed. Examining correlations across self-selected domains (see Table 1), the more frequently students reported talking with their collaborator and with others about the task after it was completed, the more interesting they found the conversation itself and the greater increase in interest in the task after the conversation. Gender, ethnicity, and RISC scores were not significantly associated with perceived choice to work with others or with the reported conversation frequency or interest variables. Moreover, this pattern of relationships among the conversation and interest variables appeared similar within the achievement and interpersonal domains. Thus, when individuals were directed to talk about any activity where working on it with someone else made it more interesting, the relationships among the conversation variables and task interest were similarly positive across domains and persons. This suggests that when individuals described the experience most salient to them, the role of talking with others in predicting interest was similar across persons and domains.

We turn next to descriptions when students were constrained to talk about a school-related activity, to see whether greater variability in the role of others emerged when all students were directed to describe school-related activities whether or not they were the most salient. In

this case, perceived choice in working with others will not covary with domain. Thus, we will also be able to examine whether these relationships differ as a function of perceived choice to work with others.

Constrained-school domain. When directed to do so, 175 participants described a school-related activity made more interesting by working with others, and 53% reported having choice in whether they had worked with others. Like those who chose to describe a school-related activity when they could have talked about activities occurring in any domain, therefore, only about half had chosen to work with others even though working with others made the task more interesting. When we examined the correlations among the frequency of conversation about the task after it was completed and the interest variables (see Table 1), we again found that the more frequently they reported talking with their collaborators or with others about the school-related activity after the activity was over, the more interesting they found the conversation, and the more interested they were in the activity after the conversation. When we compared these relationships within the group who had chosen to work with others to those within the group who had not, we found no differences (correlations ranged from .44 to .64 across both groups).

We also examined the role of person variables. Like the results for the unconstrained domain descriptions, gender was not related to perceived choice to work with others nor with the reported frequency of talking about the activity with collaborators or with others. In contrast, ethnicity did significantly predict a number of variables (although given the small n's for the non-Caucasian groups these results should be interpreted with caution). Using the general linear model we found that ethnicity significantly predicted perceived choice ($F(3,166)=2.63$, $p=.05$), with significantly greater proportions of individuals from Latino/Hispanic and Asian/Asian-American backgrounds reporting choice about working with others compared to individuals from

European-American and Other/Multiple backgrounds (71%, 85%, 52%, and 39%, respectively). However, in terms of conversation and interest variables, only Latino/Hispanic students reported talking with their collaborators about the activity significantly more often than other groups after the task was completed ($F(3,167)=2.72$, $p<.05$). They were also marginally more likely to find the conversation itself interesting ($F(3, 155)=2.44$, $p<.10$) and significantly more likely to report greater interest in the activity after the conversation ($F(3, 155)=2.68$, $p<.05$). Figure 2 displays the means for these ethnicity effects on post-task conversation and interest variables[4].

In addition to ethnicity, we found significant effects for RISC scores. To retain the information from the continuous RISC measure, we centered RISC scores and used hierarchical regression. In contrast to ethnicity, RISC scores did not predict perceived choice to work with others, and so we included choice in the regressions as a potential moderator (where choice was coded as No Choice, -1, and Choice, +1). Table 2 reports the regression results for the post-task conversation and interest variables. Individuals higher in relational self-construal reported greater frequency of conversations about the task after its completion, with both their collaborator(s) as well as with others. Furthermore, individuals higher in relational self-construals were marginally more likely to find the post-completion conversation itself more interesting than individuals lower in RISC. More importantly, individuals higher in RISC also reported that they found the activity more interesting after these conversations. These findings for RISC did not change as a function of whether students felt they had had a choice about whether to work with others on the school-related task.

The effects for ethnicity and RISC suggest that even though talking about an activity with others can be associated with greater interest in the task for everyone at some point, person characteristics associated with a greater focus on others (whether via culture or other individual

differences) may also be associated with a greater role of others in regulating interest in everyday activities. The slightly different patterns for ethnicity and RISC suggest that not all individual differences in interpersonal orientations work the same, however, and suggest the need for further research.

Because these data are retrospective self-reports, however, we cannot directly address whether choosing to work with and talk with others about the activity caused greater interest. In particular, we cannot rule out other possible causal sequences, such as whether individuals who found the activity more interesting to begin with were also more likely to talk to others about the activity, rather than the reverse. In Study 2 we employ an experimental lab study that can more directly address these possibilities by specifically controlling for the activity and manipulating others' initial reactions in the immediate post-activity conversations. This design allows us to measure interest in the activity at two points in time, first immediately after the manipulated conversation, and again at a 4 to 6 week follow-up. The first measure thus allows us to examine how initial conversation quality, a variable that could not be captured by the data from Study 1, affects participants' immediate ratings of interest. The follow-up measure more closely corresponds to the questionnaire data in Study 1, but because we control for both the activity and initial conversations we can measure whether real life conversations after the experiment affect interest ratings relative to when they left the lab. Therefore, Study 2 is designed to both compliment and extend the findings of Study 1, aiming to further examine predictions that other people significantly influence the regulation of motivation beyond the immediate activity experience by providing important input into the individual's evaluation of how *interesting* the activity is.

Study 2: How peer conversations influence interest regulation in the lab

Methods

Participants

Participants in this study were 105 same-sex friend dyads (51% female) enrolled in psychology courses, who participated in exchange for course credit. Within dyads, participants had known each other an average of 4.6 years (*SD*=5.5). This sample was predominantly comprised of European-American participants (88%, 6% Asian-American, 4% Latino/Hispanic, 2% Other). Participants were randomly assigned to one of 3 conditions: attentive/agreeable (*n = 20)*, attentive/disagreeable (*n = 20)*, or distracted (*n = 60,* see Pasupathi & Hoyt, in preparation, for details)[5]. All participants were pre-selected from the participant pool because they had never played the computer game to be used in the study, SIMS. This is a simulation game in which the goal is to keep a simulated person happy and successful. Accomplishing this goal includes providing basic necessities for the simulated person (e.g., hygiene, food), as well as maintaining a social and economic identity (going to work, spending time with friends).

Procedure

Upon arrival, participants were assigned to speaker and listener roles and taken to separate rooms. There, they completed initial background questionnaires including demographic variables. None of these variables significantly affected the results reported below, and so they will not be discussed further. The experimenter then introduced the SIMS game to the speaker participants, emphasizing that the goal of the game was to keep the simulated person happy and successful. Participants were given brief, standardized game-play instructions and used a sex-matched character. All participants began the game at an identical starting condition, in terms of simulated money, skills, and status. Participants played the game for 15 minutes. After playing

the game, participants responded to a series of questions about the game; this series of questions included questions regarding their interest in the SIMS game.

While speakers played the game, listeners were given separate instructions specific to their condition. Attentive listeners were told: "Listen to your friend the way you typically do when you're being a good listener." Attentive but disagreeable listeners were told, based on the speaker's post-game ratings, "your friend liked/disliked the game. We would like you to convince them the game is really stupid/fun." Distracted listeners were told: "We are interested in how conversations go when one person is distracted." In order to produce distraction, distracted listeners were asked to count all words beginning with the letters 'th' while listening to the speaker. Distracted listeners practiced this task on 10 prepared stories read aloud by the experimenter, who then provided feedback about task accuracy. Based on prior piloting of this procedure with established friend pairs (Pasupathi & Rich, 2005), in which listeners in the distracted condition were likely to give up on the difficult th-counting task prior to the end of the conversation, listeners were offered an additional $5 if they were accurate in counting words beginning with 'th' within 4 instances during the subsequent conversation with the speaker. The dyad was then reunited and videotaped while the speaker described the SIMS game experience to the listener. Following the conversation, the speaker was asked to describe the responsiveness and agreeableness of the listener, and to again rate his or her interest in the SIMS game.

Between 1 month and 6 weeks after the initial session, speakers were contacted and asked to participate in an ostensibly unrelated study in the laboratory. Eighty-five participants (81%) agreed to participate. Those lost to follow-up did not differ significantly in gender or initial experimental condition from those retained. However, those retained were older, $M(SD) = 21.1(3.6)$ than those lost to follow-up, $M(SD) = 19.3(1.5)$, $t(103) = -2.2$, $p < .05$.

In the second session, participants reported on the number of additional people to whom they recounted their SIMS experience, the extent to which those individuals were responsive and agreeable, and the extent to which those retellings were detailed ones. They also rated their current interest in the SIMS game.

Measures

Listener Responsiveness and Agreeableness. Speakers rated listener signals of responsiveness (e.g. the listener gave lots of eye contact) and agreement (e.g. the listener supported my opinion of SIMS) along 7-point Likert-type scales where lower ratings indicated less responsiveness and agreeableness, and higher ratings more responsiveness and agreement. Three items were averaged to index agreement, Cronbach's $\alpha = .83$, and five items were averaged to index responsiveness, Cronbach's $\alpha = .82$.

Interest in SIMS. Participants responded to three Likert-type items with slightly different phrasing indicating their level of interest in the SIMS game on 6-point scales (e.g. "My interest in SIMS is") with 1 indicating lower levels of interest and 6 very high levels. These three items were averaged to create pre-conversation, Cronbach's $\alpha = .95$, and post-conversation, Cronbach's $\alpha = .95$, measures of interest in the SIMS game. The same three items were also employed at the follow-up session, Cronbach's $\alpha = .87$.

Post-Conversation Positive Emotion. Following the conversation, participants also rated the extent to which they currently experienced 8 positive emotions (e.g., pride, happiness, contentment) on 7-point Likert-type scales where 1 = not at all and 7 = most ever. These were averaged to create an index of post-conversation positive emotion, Cronbach's $\alpha = .86$.

Interim Retellings. We counted the number of additional people told. In addition, participants rated the responsiveness of each additional listener on a 7-point Likert-type scale.

We averaged across these ratings to create an index of the average responsiveness of interim listeners. Because each person's average responsiveness score could be based on different numbers of person told, we could not calculate coefficient alpha's for this measure.

Study 2 Results

Manipulation Check.

Participants' aggregated ratings of the listeners' agreeableness and responsiveness were analyzed using a general linear model with condition (attentive/agree, attentive/disagree, distracted) as a between-subjects variable. The overall main effect of condition was significant, $F(4,202) = 20.4, p < .01, \eta 2 = .29,$ as were the univariate effects for listener agreeableness, $F(2,101) = 5.7, p < .01, \eta 2 = .10,$ and listener responsiveness, $F(2,10) = 26.9, p < .01, \eta 2 = .35.$ Follow-up pairwise comparisons suggested that for perceptions of listener agreement, the attentive/agreeable condition differed significantly from both the attentive/disagreeable condition and the distracted condition, $p's < .05,$ while the latter two did not differ from one another, $p > .10.$ For perceptions of listener responsiveness, distracted listeners differed significantly from both attentive conditions, $p's < .01,$ while the latter two did not differ from one another, $p > .50.$

Session 1: Pre- to Post-Conversation Changes in Interest

To test the effect of manipulated conversation quality on interest we examined whether, as in prior work (Pasupathi & Rich, 2005), speakers' self-rated interest dropped from prior to post-conversation in relation to listener by computing a general linear model predicting self-reported interest with time-of-measurement (pre- or post-conversation) as a within subjects factor and listener condition as a between-subjects measure. Because we had specific a-priori predictions, we tested the simple contrast of occasion within each level of listener condition rather than the omnibus interaction effect. The results suggested that drops in pre-conversation

(M=3.51) to post-conversation (M=3.34) self-reported interest were reliable only in the distracted listener condition, $F(1,101) = 6.3$, $p < .05$, $n2 = .06$, but not in the attentive (pre-conversation M=3.25; post-conversation M= 3.08) or disagreeable conditions (pre-conversation M=3.19; post-conversation M= 3.01), F's < 2.4, p's > .12. Although the magnitude of the effect sizes here are smaller than in the Pasupathi & Rich (2005) study, this pattern of findings replicates those of Pasupathi & Rich, but experimental replication and further work is needed to clarify the true effect sizes across these conditions.[6]

Importantly, ratings of post-conversation positive affect were not influenced by listener condition, $F(2,101) < .4$, $p > .70$. Thus, the impacts of listeners on interest are not simply a function of general declines in positive emotion resulting from exposure to a distracted listener.

Follow-up: Predictors of interest 1 month after the game

To complement the self-report data of Study 1 while controlling for the nature of the activity and others' initial reactions, in our major analysis, we examined the effects of later, spontaneous conversations outside the lab on SIMS interest. Before running the main analyses, we first examined whether activity interest as measured during the initial lab session predicted the number of reported retellings after the lab session was over. This was important to examine because even though in Study 1 we found a significant relationship between reported frequency of conversation about the activity and subsequent interest in the activity, we could not rule out the possibility that this effect was due to people with more interest in the activity in the first place being more likely to subsequently talk about it, rather than the reverse. In Study 2, we found that the lab session activity interest variable did not predict the number of interim retellings, $r(85) = .02$, suggesting that any effects of the retellings on subsequent interest were due to something about the later conversations.

We then ran our main analyses that focus on how the responsiveness of interim listeners affected follow-up interest. Note that for these analyses, those individuals who had no interim retellings (n = 9) could not be included, because listener responsiveness was not rated by people who had no conversations. We computed a general linear model predicting self reported interest in SIMS at the follow-up session as a function of the attentiveness of the listener in the laboratory condition and the participants' interest in SIMS at the laboratory session (to control for differences which occurred in initial experiences with SIMS), as well as the number of additional retellings and the average level of responsiveness of additional listeners encountered between the initial laboratory session and the follow-up session. Because it was possible that the impact of interim retellings would be conditional on how many such retellings occurred, we included the interaction of number of additional retellings and the attentiveness of those retellings in the model. To avoid problems of collinearity, we averaged across pre-conversation and post-conversation interest ratings from session 1, because these variables were highly correlated, r = .91. Further, we collapsed initial listener condition into two categories: attentive or distracted.

As expected, the control variables of session 1 interest and number of additional retellings both positively predicted interest 4 to 6 weeks after the lab session (session 1 interest in the game, $F(1,70) = 22.7, p < .01, \eta 2 = .25, B = .79;$ additional tellings, $F(1,70) = 4.2, p < .05, \eta 2 = .06, B = .59$). More directly relevant to our hypotheses, the average responsiveness of additional listeners was also significantly related to follow up interest, $F(1,70) = 8.6, p < .01, \eta 2 = .11, B = .39$. As can be seen in Figure 3, the more responsive that individuals perceived the people they spontaneously talked to about the activity, the greater reported interest in the activity. A significant interaction of responsiveness and additional retellings, $F(1,70) = 6.8, p < .02, \eta 2$

= *.09, B = -.11,* suggested that the perceived responsiveness of the listeners was particularly important the fewer listeners there were. [7]

The main effect of listener responsiveness to retellings outside the lab serves as the most direct extension to the findings of Study 1 because it demonstrates that the *quality* of how others listen to retellings of task experiences impacts ratings of task interest. Thus, as with the laboratory session and results from Study 1, these findings suggest support for our hypothesis concerning the role of social construction or appraisal in interest regulation, as the conversational retellings occurring after the activity itself significantly influence participants' current interest.

General Discussion

Whether working out with a friend, sharing classes with friends, or any of the other activities that are in part defined by the presence of others, engaging in activities with other people not only fulfills our need to belong (Leary & Baumeister, 1995) and strengthens our social relationships, but also plays in important role in regulating our experience and motivation with the activity itself. The current studies suggest that the social context not only can serve as a proximal source of interest *during* engagement, but can also affect interest and motivation regulation *beyond* the immediate activity context through social construction processes involved in the evaluation component of self-regulation. Further, these studies suggest that characteristics about the individual who experiences and talks about the task, as well as listeners' behaviors during conversations, both play an important role in these processes.

Although each of the studies above has its noted limitations, and neither study stands alone as a complete and confident examination of the hypothesized processes based on the Self-Regulation of Motivation model, taken together the studies provide initial support for the

hypothesis that other people are integral to regulation of motivation to persist or resume an activity beyond the immediate activity experience, by providing important input into the individual's evaluation of how *interesting* the activity is. In Study 1, college students' descriptions of everyday experiences indicated that social interactions influence interest and motivation broadly in everyday activities, because interpersonal self-regulation of interest was reported for individual achievement domains (e.g., school) as well as interpersonal domains (e.g., family). Further, these data suggest that talking with others after the activity may predict interest similarly across persons and domains, but that person characteristics associated with greater interpersonal orientation (whether defined by cultural or individual differences) may be associated with an even greater role of others in regulating interest in everyday activities. The different patterns for ethnicity, relational self-construal, and gender further suggest, however, that different ways of capturing interpersonal orientation may be associated with slightly different ways in which others are integrated into the regulation of interest and motivation, and future research on this individual variability is needed.

Countering the limitations of the retroactive self-report data, the experimental paradigm employed in Study 2 allowed the effects of post-task conversation on interest to be examined when everyone was talking about the same initial activity. In addition, it allowed an initial examination of the role of the listener's reactions during these conversations in determining the person's subsequent interest in the activity. Replicating the earlier findings of Pasupathi & Rich (2005), these results suggest that post-activity conversation during the lab session with a distracted friend reliably decreased interest in the activity relative to interest reported post-activity but before the conversation. This effect for interest could not be accounted for by a

general decrease in positive affect, suggesting that it is important to distinguish interest from other positive emotions in terms of the motivational implications.

In addition to replicating the effects of listener attentiveness on immediate activity interest, results from the 4 to 6 week follow-up more directly complement the findings of Study 1 by suggesting that individuals spontaneously talked about the activity experience with others when no longer directed to do so. More importantly, these data suggest that the nature of the listeners' reactions— and in particular, the degree of perceived responsiveness— influenced participants' interest in the game over and above any differences in interest that may have occurred at the end of the lab session. Thus, conversations about the activity, both immediately after the activity in the lab and significantly later outside the lab, influenced participants' interest in the activity itself. Further work is certainly necessary to extend these findings and strengthen confidence in this initial exploration, but this early evidence provides support for our predictions that social factors can influence the process of motivation regulation by providing input into individual's evaluation of interest in the activity.

Exploring the mechanisms by which conversations following an activity can alter evaluations of interest in that activity may be particularly useful for future work. Others' work on the role of appraisal in emotion suggests that social interactions following the activity could be changing individuals' memory for their appraisal of how interesting the activity was (e.g., Levine, 1997). Individuals could also be remaking or adjusting their initial appraisals as they incorporate feedback from others (or lack thereof) into their *current* appraisal of the activity. Social interactions may also influence appraisals or evaluations of the activity by processes other than effects on memory. As noted earlier, people could be re-experiencing the feelings associated with the activity while talking about it and new appraisals of these feelings may differ from

original appraisals. Social verification processes could also affect the continuity of appraisal for the activity over time. That is, current appraisals of how interesting the activity is could be strengthened, weakened, or perhaps even reversed altogether, depending on the type and source of social feedback about the experience. One could imagine that any one of these mechanisms, or perhaps a combination of these or other mechanisms may drive the effects of post-activity social interaction on activity interest. Future work will therefore be necessary to clarify the mechanisms through which these effects occur.

In addition to extending our knowledge of how social processes influence the self-regulation of motivation, the studies above also improve our understanding of how the interest experience is shaped by everyday social interactions. In our introductory discussion of the interest experience, we suggested that the specific emotion of interest can be distinguished from general positive mood or affect, other specific positive emotions, and related interest constructs such as "situational" and "individual" interest. The findings of the studies above extend our understanding of the interest experience itself, suggesting that interest, once established as a motivational component during the activity, extends beyond the immediate activity context to become part of how we define the activity. Thus, we not only experience the phenomenological component of interest as motivating during activity engagement, but when we think about activities we in part define them by the anticipated presence of the interest experience. Perhaps in this way, because interest can be considered a fundamental component of both the motivational experience during the activity as well as the mental representation of the activity, the motivation associated with the interest experience may become a part of a more well-developed individual interest over time. Although we are not proposing a new developmental model of individual interest (see Hidi & Renninger, in press for such a model) the findings above suggest that the

role of social construction, shared reality, and representation of the interest experience may have implications for the development of individual interest. Only future research, of course, can clarify such potential links, but perhaps considering interest in part as a socially constructed process may help us to better understand how the social world in which we live contributes to the development of our well-developed individual interests.

Conclusion

Previous work based on the Self-regulation of Motivation Model demonstrates that the experience of interest is an important source of motivation and that individuals will self-regulate this experience when it is missing from the activity but there is a good reason to continue. Previous findings also demonstrate multiple routes through which social factors can influence the process of motivation regulation before and during the activity, and the studies presented above represent our initial steps in extending consideration of the processes involved in regulating motivation beyond the immediate activity context. The results provide support for our consideration of interest regulation among the other psychological processes that are affected by shared reality, social representations, and discourse. It appears that both the social context and interest regulation extend beyond the activity context itself, and that later social interactions in the form of conversations about the activity continue to influence not only our memories for what happen, but also our representations of interest and motivation associated with the activity.

Acknowledgment

The authors thank Sara Doty, Jamie Kidder, Melissa Robinson, Jennifer Warden, and McKensey Wilson for their assistance with study 1, as well as Tim Hoyt and Ben Rich for their assistance with study 2.

References

Ahlering, R. (2003). Collective self-esteem data from four ethnic groups. Psychological Reports, 92(2), 562-564.

Ainley, M. D., Hidi, S., & Berndoff, D. (2002). Interest, learning, and the psychological processes that mediate their relationship. Journal of Educational Psychology, 94, 545-561.

Aspinwall, L. G. (1998). Rethinking the role of positive affect in self-regulation. *Motivation and Emotion, 22*, 1-32.

Baldwin, M. W., & Holmes, J. G. (1987). Salient private audiences and awareness of the self. *Journal of Personality and Social Psychology, 52*, 1087-1098.

Baumeister, R. F. & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497-529.

Cacioppo, J. T., Gardner, W. L., & Berntson, G. G. (1999). The affect system has parallel and integrative processing components: Form follows function. *Journal of Personality and Social Psychology, 76,* 839-855.

Carver, C. S., & Scheier, M. F. (1990). Origins and functions of positive and negative affect: A control-process view. *Psychological Review, 97,*19-35.

Clore, G. L. (1994). Why emotions are felt. In P. Ekman & R. Davidson (Eds.), *The nature of emotion: Fundamental questions* (pp. 103-111). New York: Oxford University Press.

Clark, H. H. (1996). *Using language*. Cambridge, MA: Cambridge University Press.

Cross, S. E., Bacon, P.L, & Morris, M.L. (2000). The relational-interdependent self-construal and relationships. *Journal of Personality & Social Psychology, 78*(4), 791-808.

Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety.* San Francisco, CA: Jossey-Bass.

Davidson, R. J. (1993). The neuropsychology of emotion and affective style. In M. Lewis & J. M. Haviland (Eds.), *Handbook of emotion* (pp. 143-154). New York: Guilford Press.

Deci, E. L., & Ryan, R. M. (1987). The support of autonomy and the control of behavior. *Journal of Personality and Social Psychology, 53*, 1024-1037.

Eccles, J.S. (1987). Gender roles and women's achievement-related decisions. *Psychology of Women Quarterly, 11*, 135-170.

Fredrickson, B.L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56* (3), 218-226.

Fredrickson, B.L. (2002). Positive emotions. In C.R. Snyder & S.J. Lopez (Eds.) *Handbook of positive psychology*. New York: Oxford University Press.

Gollwitzer, P. M., & Wicklund, R. A. (1985). Self-symbolizing and the neglect of others' perspectives. *Journal of Personality and Social Psychology, 48*, 702-715.

Hardin, C. D., & Higgins, E. T. (1996). Shared reality: How social verification makes the subjective objective. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Vol. 3 The interpersonal context* (pp. 28-84). New York: Guilford Press.

Hidi, S., & Renninger, K. A. (2006). The four-phase model of interest development. *Educational Psychologist, 41*(2), 111-127.

Hunter, J.P. & Csikszentmihalyi, M. (2003). The positive psychology of interested adolescents. Journal of Youth and Adolescence, 32(1), 27-35.

Isaac, J. D., Sansone, C., & Smith, J. (1999). Other people as a source of interest in an activity. *Journal of Experimental Social Psychology, 35,* 239-265.

Izard, C. E. (1977). *Human emotions*. New York: Plenum Press.

Krapp, A. (2000). Interest and human development during adolescence: An educational-psychological approach. In J. Heckhausen (Ed.), *Motivational psychology of human development* (pp. 109-128). London: Elsevier.

Lepper, M.R., Greene, D., & Nisbett, R.E. (1973). Undermining children's intrinsic interest with extrinsic reward: A test of the overjustification hypothesis. *Journal of Personality and Social Psychology, 28*(1), 129-137.

Levine, L.J. (1997). Reconstructing memory for emotions. *Journal of Experimental Psychology, General, 126* (2), 165-177.

McLean, K. C., Pasupathi, M., & Pals, J. L. (in preparation). Selves creating stories creating selves: A process model of narrative self development.

Morgan, C., Isaac, J.D., & Sansone, C. (2001). The role of interest in understanding the career choices of female and male college students. *Sex Roles, 44*(5-6), 295-320.

Moscovici, S. (1988). Notes toward a description of social representations. *European Journal of Social Psychology, 18*, 211-250.

Nolen, S.B. (2001). Constructing literacy in the kindergarten: Task structure, collaboration, and motivation. *Cognition and Instruction, 19*, 95-142.

Pasupathi, M. (2001). The social construction of the personal past and its implications for adult development. *Psychological Bulletin, 127*, 651-672.

Pasupathi, M. & Hoyt, (in preparation). The Impact of listener responsiveness on concurrent and subsequent memory for personal experiences.

Pasupathi, M., & Rich, B. (2005). Inattentive listening undermines self-verification in personal storytelling. *Journal of Personality*, *73*, 1051-1086

Pasupathi, M., Stallworth, L. M., & Murdoch, K. (1998). How what we tell becomes what we know: Listener effects on speakers' long-term memory for events. *Discourse Processes, 26*, 1-25.

Renninger, K. A. (2000). Individual interest and its implications for understanding intrinsic motivation. In C. Sansone & J. M. Harackiewicz (Eds.), *Intrinsic and extrinsic motivation: The search for optimal motivation and performance* (pp. 375-407). San Diego, CA: Academic.

Roseman, I.J. & Smith, C.A. (2001). Appraisal theory: Overview, assumptions, varieties, and controversies. In K.R. Scherer, A.J. Schorr, & T. Johnstone (Eds.) *Appraisal processes in emotion: Theory, methods, research* (pp, 3-19). New York: Oxford University Press.

Sansone, C., & Berg, C.A. (1993). Adapting to the environment across the life span: Different process or different inputs? *International Journal of Behavioral Development, 16*(2), 215-241.

Sansone, C., & Harackiewicz, J. M. (1996). "I don't feel like it": The function of interest in self-regulation. In L. Martin & A.Tesser (Eds.), *Striving and feeling: The interaction of goals and affect* (pp. 203-228). Mahwah, NJ: Erlbaum.

Sansone, C & Morgan, C. (1992). Intrinsic motivation and education: competence in context. *Motivation and Emotion, 16*(3), 249-270.

Sansone, C., Sachau, D.A., & Weir, C. (1989). Effects of instruction on intrinsic interest: The importance of context. *Journal of Personality and Social Psychology, 57*(5), 819-829.

Sansone, C. & Smith, J.L. (2000). Interest and self-regulation: The relation between having to and wanting to. In C. Sansone and J.M. Harackiewicz (Eds.), *Intrinsic and extrinsic*

motivation: The search for optimal motivation and performance. San Diego, CA: Academic Press.

Sansone, C., & Thoman, D.B. (2005a). Does what we feel affect what we learn?: Some answers and new questions. *Learning and Instruction, 15*, 507-515.

Sansone, C., & Thoman, D. B. (2005b). Interest as the missing motivator in self-regulation. *European Psychologist*, 10(3), 175- 186.

Sansone, C. & Thoman, D.B (in press). Maintaining activity engagement: Individual differences in the process of self-regulating motivation. *Journal of Personality.*

Sansone, C., Weir, C., Harpster, L., & Morgan, C. (1992). Once a boring task always a boring task?: Interest as a self-regulatory mechanism. *Journal of Personality and Social Psychology, 63*, 379-390.

Silvia, P.J. (2005). What is interesting? Exploring the appraisal structure of interest. *Emotion, 5*(1), 89-102.

Stallworth, L. M. (1995). *Shared representations: communication and shared perspectives.* Unpublished dissertation thesis, Stanford University, Stanford, CA.

Strough, J., Berg, C., & Sansone, C. (1996). Goals for solving everyday problems across the life span: Age and gender differences in the salience of interpersonal concerns. *Developmental Psychology, 32*, 1106-1115.

Watson, D., Wiese, D., Vaidya, J., & Tellegen, A. (1999). The two general activation systems of affect: Structural findings, evolutionary considerations, and psychobiological evidence. *Journal of Personality and Social Psychology, 76,* 820-838.

Wolters, C. A. (1999). The relation between high school students' motivational regulation and their use of learning strategies, effort, and classroom performance. *Learning & Individual Differences, 11*, 281-299.

Figure Captions

Figure 1: Self-Regulation of Motivation Model (based on Sansone & Harackiewicz, 1996; Sansone & Smith, 2000; Sansone & Thoman, 2005b), with highlighting (in bold) the routes through which social/interpersonal factor can influence this self-regulation process.

Figure 2: Undergraduates' descriptions of school-related activities where working with others made it more interesting, Study 1: Means for ethnicity effects on post-task conversation and interest. Latino/Hispanics were significantly different from all other groups for frequency of post-task conversations and greater interest after post-task conversations, and marginally significantly different for interestingingness of the conversation; no other group differences approached significance.

Figure 3: Students' residualized interest scores at a 4 to 6 week follow-up as a function of perceived responsiveness of listeners during spontaneous conversations about the activity, Study 2.

Figure 1

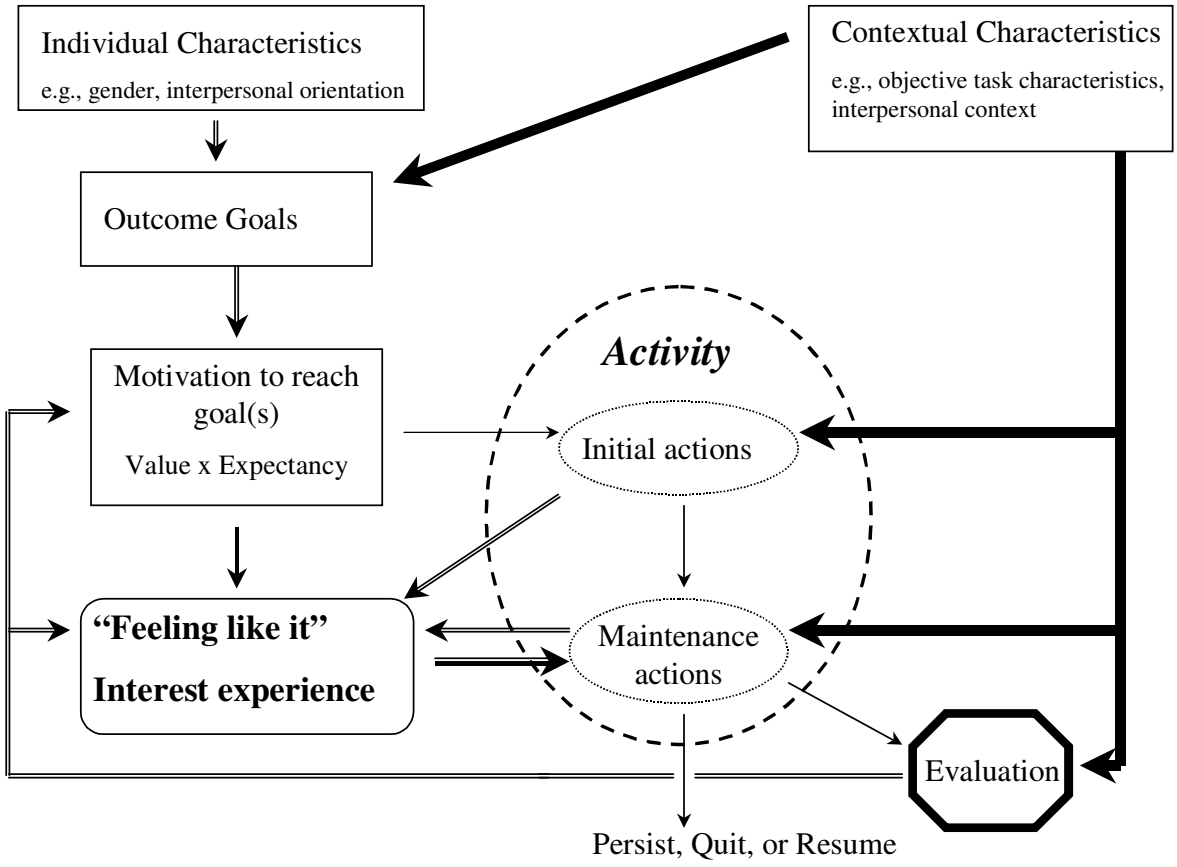
Individual Characteristics
e.g., gender, interpersonal orientation
Contextual Characteristics
e.g., objective task characteristics, interpersonal context
Outcome Goals
Activity
Motivation to reach goal(s)
Value x Expectancy
Initial actions
"Feeling like it"
Interest experience
Maintenance actions
Evaluation
Persist, Quit, or Resume

Figure 2.

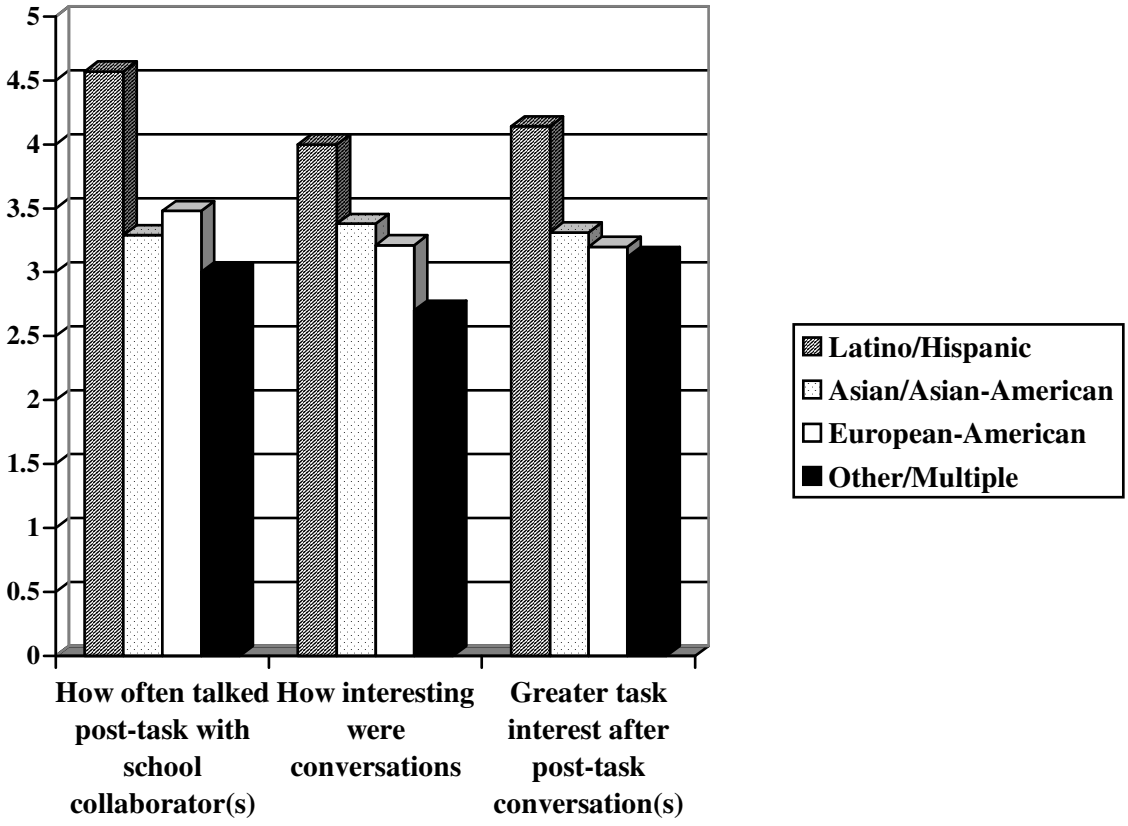
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
How often talked post-task with school collaborator(s)
How interesting were conversations
Greater task interest after post-task conversation(s)
Latino/Hispanic
Asian/Asian-American
European-American
Other/Multiple

Figure 3.

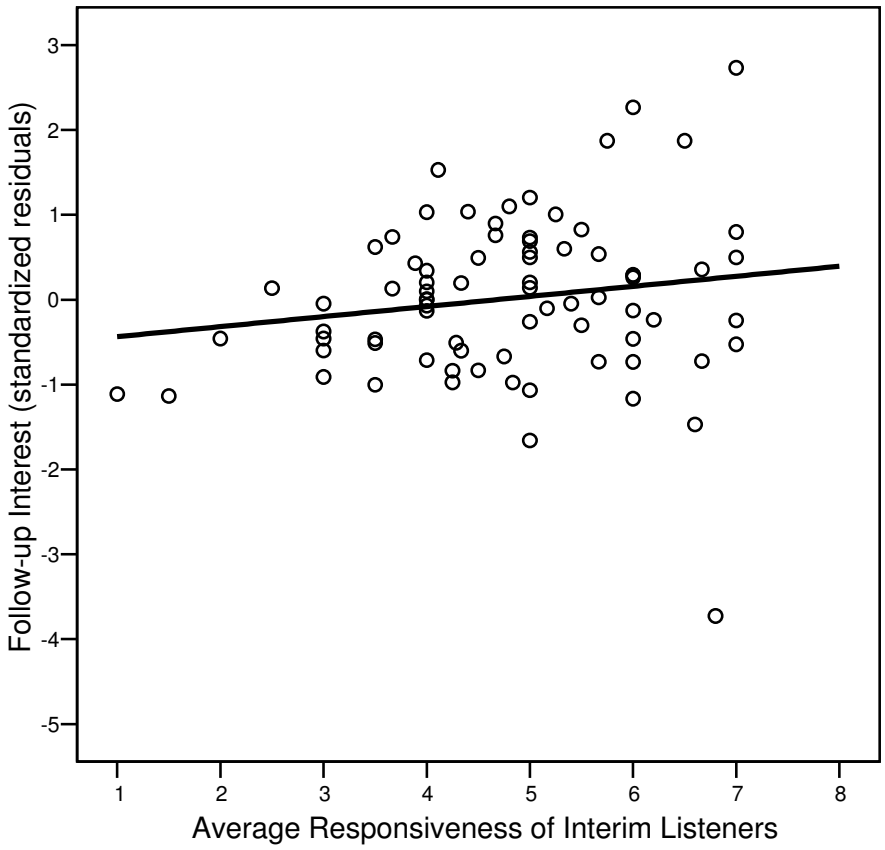
Follow-up Interest (standardized residuals)
3
2
1
0
-1
-2
-3
-4
-5
1
2
3
4
5
6
7
8
Average Responsiveness of Interim Listeners

Table 1. Undergraduates' descriptions of activities where working with others made it more interesting, Study 1: Correlations among post-task conversation and interest variables within unconstrained and school domains

	Unconstrained Domain			School Domain		
Variable	1	2	3	1	2	3
1 How often talked post-task with collaborator(s)	-			-		
2 How often talked post-task with non-collaborator(s)	.58	-		.62	-	
3 How interesting were conversations	.48	.59	-	.48	.62	-
4 Greater task interest after post-task conversation(s)	.33	.49	.56	.47	.45	.69

Note: Ns range from 181 to 188 to for Unconstrained Domain and 162 to 175 for School Domain. All correlations significant at $p < .01$.

Table 2. Undergraduates' descriptions of school-related activities where working with others made it more interesting, Study 1: Regression results predicting post-task conversation and interest variables as a function of Relational Interdependent Self-Construal (RISC) and perceived choice to work with others

	Predictor Variables							
	RISC		Choice		R x C		Overall	
	b	se	b	se	b	se	F	R^2
Dependent variables								
How often talked post-task with school collaborator(s)	02**	.01	.17*	.10	.00	.01	2.72**	.05
How often talked post-task with non-school collaborator(s)	.03**	.01	.06	.10	.01	.01	2.32*	.04
How interesting were conversation(s)	.02*	.01	.05	.09	.00	.01	1.27	.02
Greater task interest after post-task conversation(s)	.02**	.01	-.01	.07	-.01	.01	3.31**	.06

Note: Ns range from 156 to 170. All dependent variables were rated on 1 to 5 scales; RISC scores ranged from 24 to 68 with higher RISC scores reflecting greater relational self-construal. For regressions, RISC scores were centered and Choice was coded –1 for no choice and +1 for choice to work with others.

**p <.05, *p<.10, two-tailed

Footnotes

[1] Importantly, although interest is generally experienced in a positive affective state (Ainley, Hidi, & Berndorff, 2002), there can also be moments of negative feelings during interested engagement (e.g. someone who is deeply involved in figuring out a problem may have moments of frustration).

[2] Individuals may also engage in an activity with the goal of experiencing interest. This initial motivation is still considered goals-defined and distinct from the motivation that results from the actual experience of the activity. That is, individuals may choose to do a task because they think it will be interesting, but this does not necessarily mean that they will actually experience the anticipated interest while engaged.

[3] Although individual differences play an important role in the relationship between goals-defined and experience-defined motivation over time, a full discussion of individual differences in our model is beyond the scope of this paper. See Sansone & Thoman (in press) for a more complete discussion of individual differences within the Self-Regulation of Motivation perspective.

[4] The analysis predicting frequency of post-task conversation with non-collaborators was not significant. However, the pattern of means was similar to reported frequency of conversations with collaborators (Ms=3.57, 3.42, 2.86, and 2.72 for Latino/Hispanic, Asian/Asian-American, European-American, and Other/Multiple groups, respectively).

[5] As described in more detail elsewhere (Pasupathi & Hoyt, in preparation) the original design called for three variations on the distracted condition. Manipulation checks, however, revealed that the three distracted conditions did not differ from one another; hence, the resulting design effectively involved only three conditions. Pasupathi & Hoyt (in preparation) focuses on

the effects of conversation about the SIMS game on memory, which were independent from the interest evaluation effects reported here.

[6] Although the mean difference only reached significance for the distracted condition, the differences in power and sample size across conditions may have contributed to the differential effects. We thus tested a post hoc general linear model that included both listener condition and speaker-rated attentiveness in the model to account for both between-condition differences and within-condition variability in speakers' perceptions of attentiveness. This model essentially eliminates pre-post differences in the two attentive conditions (mean drops= -.111 and -.105), suggesting that in those conditions, the mean differences are a function of within-condition variability in the perceived attentiveness of those listeners, while accounting for this within-condition variability increases the pre-to-post conversation drop in interest in the inattentive condition (mean= -.258). Given the post hoc nature of this analysis, we are not fully confident that this more complex model resolves the issue of effect size and observed power differences within these data, but it does increase support for initial confidence in our hypothesis and justification for further research to examine the true effect size.

[7] To illustrate this interaction we created a median split on how many extra people participants told, and then computed separately for high and low disclosure rates the partial correlations between average listener responsiveness and follow-up interest, controlling for lab session variables. For people who told 1 or 2 additional individuals ($n = 33$), the partial correlation between responsiveness of those listeners and follow-up interest was .47, $p < .01$. For those who told more than 2 additional people ($n = 37$), that same partial correlation was -.10, $p > .05$.