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The Social Monitoring System:
Enhanced Sensitivity to Social Cues and Information as an Adaptive Response to Social Exclusion and Belonging Need

Cynthia L. Pickett
University of Chicago

and

Wendi L. Gardner
Northwestern University

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Address Correspondence to:

Cynthia Pickett
Department of Psychology
University of Chicago
5848 S. University Avenue
Chicago, IL 60637

Phone: (773) 834-0190
Fax: (773) 702-0886
Email: cpickett@uchicago.edu
The Archdiocese of Philadelphia recently approved a rare petition from a man to be an official hermit under the Catholic Church's canons. Richard Withers, 46, has vowed to do all the things a priest does except that he spends almost all of his time away from people, in contemplation (based on "an almost unremitting desire to be alone with God"). Brother Withers has a paying job (which he works at in silence) one day a week and exchanges e-mail with other hermits. [New York Times, 10-30-01]

Chuck Shepherd’s
News of the Weird

Introduction

Despite the complexity of human social life, there appear to be some aspects of it that are fundamental to our existence. One of these is the desire for social inclusion and acceptance from others. Attesting to the relative importance of belonging in human functioning, Maslow (1970) considered only two other needs to be prepotent to belonging: basic physiological needs (e.g., food and water) and safety needs. Indeed, as exemplified by the News of the Weird story quoted above, even those individuals who claim to desire solitude and isolation from other humans still appear to seek out social connections.

In their review of the need to belong as a basic human motivation, Baumeister and Leary (1995) summarize a variety of evidence that supports the assertion that humans are driven to seek belongingness and that they suffer both physically and psychologically when belongingness needs go unsatisfied. In terms of physical health, social isolation and lack of social support have been associated with increased risk of heart attack (Case, Moss, Case, McDermott, & Eberly, 1992); poorer blood pressure regulation (Uchino, Cacioppo, & Kiecolt-Glaser, 1996); and poorer sleep efficiency (Cacioppo et al., 2002). The mental health consequences are also quite severe. Social exclusion has been linked to anxiety (Baumeister & Tice, 1990), negative affect (Marcus & Askari, 1999; Williams et al., 2000) and depressed self-esteem (Leary, 1990; Leary, Tambor, Terdal, & Downs, 1995). When social isolation occurs over long periods of time, loneliness
(Jones, 1990; Jones & Carver, 1991; Peplau & Perlman, 1982) and depression (Leary, 1990) may result. Recently, researchers have also begun to document a link between rejection and antisocial responding (Newcomb, Bukowski, & Pattee, 1993; Twenge, Baumeister, Tice, & Stucke, 2001; Twenge & Campbell, 2003). Indeed, some have argued (e.g., Leary, Kowalski, Smith, & Phillips, 2003) that acts such as school shootings are an outgrowth of chronic rejection and ostracism experiences where individuals act out against those who have rejected them.

Despite the obvious benefits of social connectedness, one of the barriers to its attainment is social exclusion and rejection by others. Most societies, including non-human societies (Lancaster, 1986; Raleigh & McGuire, 1986), engage in routine rejection of some of their group members. This rejection is often the result of an individual failing to conform to some social norm or rule and can take the form of mild social rejection (e.g., a snub) to complete exclusion and ostracism (e.g., Williams, 2001; Williams & Zadro, this volume). Although it is clear that many negative emotional and behavioral consequences can result from a loss of social relationships, what is not well understood are the specific ways that individuals deal with daily rejection experiences and how they avoid prolonged social exclusion. Most individuals encounter some form of mild rejection in their daily lives—e.g., being turned down for a date or being left out of a conversation. While these experiences may result in temporary feelings of dejection or anger, many individuals are able to bounce-back from these episodes and regain inclusion and belonging. But what are the processes and mechanisms that contribute to individuals’ ability to recover from and avoid rejection?

The goal of this chapter is to provide a potential answer to this question by describing a model for the regulation of belonging needs (see Figure 1). We will begin by describing the components of the model and the model’s relation to other known processes involved in detecting and responding to social exclusion. We will then summarize the evidence collected to
date in our lab that bears upon a particular aspect of the model. Avenues for future research will also be discussed.

The Regulation of Belonging Need

Optimal human functioning requires the regulation of our basic needs (e.g., food, water, sleep). Within any regulatory system, there must be mechanisms that allow for the assessment of current needs, some type of signal when the needs are unmet, and integrative mechanisms that then monitor the environment and guide behavior in a goal directed fashion. For example, our bodies typically need 6-8 hours of sleep per night. Sleep is regulated, in part, by a homeostatic mechanism that tracks our sleep accumulation, signals to the body when a sleep debt arises (via increased sleepiness, irritability, etc.), and guides the body toward engaging in greater sleep as a means of returning the system to equilibrium (via the ability to fall asleep more quickly the next night and sleep more deeply) (Dement & Vaughan, 1999). Similar to the regulation of other basic needs, the regulation of belonging needs can be conceived as occurring via a series of psychological and physiological mechanisms.

Our proposed model for the regulation of belonging needs (see Figure 1) begins with the idea that in order to ensure that humans maintain a stable and acceptable level of social inclusion, a mechanism needs to be in place to assess and monitor levels of belonging need and inclusionary status. Leary (1999; Leary, Tambor, Terdal, & Downs, 1995) has argued persuasively that self-esteem may in fact serve this function. According to sociometer theory, self-esteem can be thought of as a type of psychological gauge that monitors the quality of people’s social relationships. When an individual’s relational value is low (e.g., when the person has been recently rejected), this is reflected in reduced feelings of self-worth (i.e., lower self-esteem; Leary, Haupt, Strausser, & Chokel, 1998). According to the model, when the sociometer indicates that one’s state of belonging is satisfactory, no further activation of the regulatory
system occurs. However, when an individual’s state of belonging is unsatisfactory (as indicated by feelings of low self-worth), the next process in the regulatory system is activated.

In response to lowered self-esteem, individuals typically experience negative affect and anxiety (Baumeister & Tice, 1990; Heatherton & Polivy, 1991; Leary et al. 1995). One can think of these negative feeling states as serving a critical motivational function. Just as sleepiness is perceived as unpleasant, feelings of anxiety and negative mood are also perceived as unpleasant states that people are motivated to reduce. As is typical with human regulatory systems, the negative states that accompany an unmet need should become increasingly intense the longer the need goes unsatisfied. In line with this idea, individuals who suffer from chronic rejection and loneliness appear to suffer more intensely than those who experience mild or sporadic rejection episodes (e.g., Crick & Ladd, 1993). Although negative affect and anxiety may often accompany feelings of low relational value, we do not assume that affect is the only means through which belongingness deficits are conveyed to the self. In some cases, individuals may engage in less emotional cognitive appraisals of their level of social inclusion and that information may signal to the self that a deficit exists. This is similar to the case of a person not sensing any signs of tiredness, but recognizing nonetheless that she should attempt to sleep.

Thus far, we have described two mechanisms that are presumed to be involved in the regulation of belonging needs—the sociometer and negative affective states. Whereas these first two mechanisms form the basis of other regulatory models of social inclusion (e.g., Leary’s social exclusion theory; Leary, 1990), the primary focus of our research has been on the relatively understudied question of what mechanisms exist to help reduce a perceived belongingness deficit. In answer to this question, we introduced the idea of a social monitoring system (SMS) that guides social information processing. Similar to how hunger leads individuals to notice and quickly process information related to food (Atkinson & McClelland, 1948), a lack
of belonging is predicted to lead individuals to monitor their environment for social information that may provide cues to belonging and inclusion. This information may be self-related (e.g., noticing that a friend seems eager to end a conversation) or other-related (e.g., noticing the response that another person receives from others). The social monitoring system is considered to be adaptive in that it allows individuals to notice the cues that may signal an impending rejection (and perhaps ward off the rejection) and also notice the interpersonal techniques that lead to greater belonging and inclusion. Because much of the work of interpersonal communication is done in a fairly subtle fashion (see Fichten, Tagalakis, Judd, Wright, & Amsel, 1992; Folkes, 1982), individuals need to be sensitive to a range of verbal and nonverbal social cues. For example, detecting whether a conversation partner is bored often requires taking into account whether the partner is looking away or tapping her feet. To the extent that a perceiver is attentive to this information and vigilant, he or she can decipher the cues and realize that a change (e.g., changing the topic) needs to be made to avoid being rejected by the partner. In sum, we conceive of the SMS as providing the integrative mechanism for the regulation of belonging needs. At the most basic level, the purpose of the SMS is to attune individuals to information that will help them navigate their social environment more successfully.

The hypothesis that heightened belonging need will result in increased social monitoring is related to some extent to work on rejection sensitivity by Downey and her colleagues (e.g., Ayduk, Mendoza-Denton, Mischel, Downey, Peake, & Rodriguez, 2000; Downey & Feldman, 1996; Downey & Romero, this volume). Downey’s research indicates that individuals who are dispositionally inclined to anxiously expect rejection tend to readily perceive intentional rejection in the ambiguous behavior of others and react intensely to this perceived rejection. One way of interpreting rejection sensitivity is as a maladaptive outcome of the more general social monitoring system. When operating functionally, the social monitoring system should
temporarily heighten sensitivity to both positive and negative social information. It is adaptive for individuals to notice both the signals that indicate belonging and acceptance and the cues that indicate possible rejection. Thus, for individuals whose social monitoring system is functioning normally, increased interpersonal sensitivity following a rejection should ultimately lead to the ability to secure and maintain social inclusion. However, like other self-regulatory systems that have the potential to go awry, it is possible for the social monitoring mechanism to occasionally result in non-optimal outcomes.

At the final stage of the regulatory model are further attempts at social interaction. Although researchers have demonstrated antisocial tendencies in response to rejection and anticipated social exclusion (e.g., Twenge et al., 2001), it is generally expected that despite temporary feelings of anger and hostility, individuals will eventually seek out opportunities for belongingness need satisfaction. Prior activation of the SMS should not only attune individuals to opportunities for social inclusion, but should also aid in achieving that inclusion via enhanced interpersonal sensitivity. A feedback-loop is incorporated into the self-regulatory model, which represents the idea that information regarding the success of these subsequent social interactions should feed back to the sociometer, which is vigilant for such information. If subsequent social interactions have been successful and the belongingness deficit has been removed, the system can then return to a state of equilibrium (i.e., non-activation). If not, the cycle is hypothesized to resume once again.

Caveats

The model depicted by Figure 1 is only one of many potential systems that may work to regulate belongingness. Just as sleep is regulated by several distinct mechanisms (e.g., both a homeostatic and a circadian process), it is likely that different aspects of belongingness are regulated by different mechanisms. The self-regulatory system proposed here deals with how
individuals maintain a satisfactory level of belongingness, but is mute on the issues of how individual differences in levels of need are determined and whether there are systematic (e.g., age-related or hormonal) changes in need over time. In addition, the present model assumes that individuals will generally have the opportunity to engage in future social interaction subsequent to experiencing heightened belonging need. This, however, is not always the case. Individuals may find themselves temporarily isolated from their normal sources of social interaction. When this occurs, individuals may need to seek other methods for fulfilling their unmet need. Potential methods for doing so are described in the following chapter (Gardner & Pickett, this volume).

Predicted Functions of the Social Monitoring System

As noted previously, the bulk of our research has been geared toward testing specific predictions regarding the social monitoring component of the self-regulatory system. According to our conceptualization of the social monitoring system, heightened belonging need should lead to enhanced sensitivity to social cues and social information. To date, our tests of the SMS have focused on two types of sensitivity—biased recall of social versus non-social information and interpersonal sensitivity. Individuals with heightened belonging need are hypothesized to scan their environment for information related to social connections and relationships. Thus, we predicted that when belonging need is high, individuals will exhibit biases in the type of information that they encode and recall. We have also examined the relationship between belonging need and interpersonal sensitivity. In this research, we have chosen to use a broad definition of interpersonal sensitivity that encompasses “…the ability to sense, perceive accurately, and respond appropriately to one’s personal, interpersonal, and social environment.” (Bernieri, 2001; p. 3). Because interpersonal sensitivity can aid in achieving greater social inclusion, we predicted that greater belonging need would be associated with heightened interpersonal sensitivity.
The prediction that levels of interpersonal sensitivity will covary with individuals’ state of belonging need (which presumably fluctuates to some degree over time and situations) assumes that interpersonal sensitivity is not a static or fixed ability. Although some stable individual differences in interpersonal sensitivity do appear to exist (e.g., Hall, 1978), it is also generally acknowledged that motivation, practice, and social context can affect levels of sensitivity (e.g., Marangoni, Garcia, Ickes, & Teng, 1995). For example, Snodgrass (Snodgrass, 1985; 1992) demonstrated that assigning interaction partners to a subordinate versus superior social role affected their performance at guessing what their partner thought of them. Participants in a subordinate role were better on average at detecting their partner’s thoughts than were participants in a superior role. In general, it is our assumption that natural variation in levels of social sensitivity exist such that some individuals are chronically more sensitive than others. However, we also believe that both conscious and nonconscious motivations can affect sensitivity levels (e.g., Simpson, Ickes, & Blackstone, 1995). Individuals exhibit temporary increases (or decreases) in sensitivity in response to their social environment and temporary states. Thus, we predicted that within their own individual range of ability, individuals would exhibit greater sensitivity when their need to belong is higher.

Because interpersonal sensitivity is a complex construct involving a range of different skills (i.e., attending to social cues, decoding the meaning of those cues, and responding appropriately), individual ability levels may constrain performance even when motivation is high. A recently rejected person may be motivated to be more sensitive to an interaction partner’s thoughts and feelings, but may lack the training, practice, or requisite skills to do so. Because both motivation and ability affect performance on social sensitivity tasks, it is necessary to take into account the level of skill required by a particular measure of social sensitivity in order to predict the relationship between belonging need and sensitivity. When the sensitivity
measure is relatively easy (e.g., simply attending to social information or vocal tone), temporary or situational manipulations of belonging need may be sufficient to produce greater sensitivity. However, when the task is more complex and skill-dependent (e.g., inferring an individual’s thoughts or feelings), then individuals who engage in chronic attempts at social sensitivity (i.e., individuals dispositionally high in belonging need) should have a greater advantage. Thus, although we generally predict that heightened belonging need will result in increased social sensitivity, we also acknowledge that this relationship may be attenuated when the sensitivity task is difficult.

In testing our predictions regarding the social monitoring system, we distinguished between two sources of belonging need—chronic and situational. Chronically high belonging need may result when an individual craves higher levels of social contact and inclusion than the social situation affords. This is the state captured by the construct of loneliness (Peplau & Perlman, 1982; see also Cacioppo & Hawkley, this volume). Lonely individuals perceive a deficiency in their social relationships (Russell, Cutrona, Rose, & Yurko, 1984) and may experience long periods of unmet belonging need (Baumeister & Leary, 1995). Because lonely individuals experience a chronic lack of belonging, one might predict that these individuals would have social monitoring systems that are perpetually engaged (because the system constantly receives input of a belongingness deficit). Although we will summarize evidence supportive of this prediction below, it should be noted that loneliness is associated with objective and subjective measures of social isolation and poorer interaction quality (e.g., Jones, 1981; Jones, Hobbs, & Hockenbury, 1982). Thus, it is also possible that individuals are lonely because they fail to exhibit appropriate levels of interpersonal sensitivity and hence fail to establish and maintain meaningful social relationships. Given the association between loneliness and general social skill deficits (e.g., DiTomasso, Brannen-McNulty, Ross, & Burgess, 2003; Jones et al.,
lonely individuals may attempt to exhibit greater social sensitivity as a means of improving their social relationships (and, in fact, may succeed on some tasks), but their skill level may constrain their performance on many measures of sensitivity.

Apart from loneliness, chronically activated belonging need may also stem from dispositionally high needs for social acceptance and inclusion (Leary, Kelly, Cottrell, & Schreindorfer, 2001). According to Leary et al. (2001), some individuals appear to have especially strong needs for acceptance such that they seek out large numbers of social relationships, experience strong negative reactions to exclusion, and worry about their level of social regard. Leary et al. (2001) developed a 10-item scale to measure individual differences in belonging need (the Need to Belong Scale; NTBS) and found that this measure was uncorrelated with measures of perceived social support and acceptance, loneliness, and alienation. It appears that individuals high in the need to belong simply desire and worry about social acceptance irrespective of the status of their current social ties. Given the nature of the need to belong construct, we predicted that scores on the NTBS would be positively associated with interpersonal sensitivity. Despite the fact that high need to belong individuals may appraise their inclusionary status as relatively high, their need for inclusion may still exceed what is provided in a typical situation (thus leading to a perceived deficit). In addition, the tendency of high NTB individuals to worry and feel anxious about acceptance from others may serve as a chronic source of activation to the SMS.

In addition to chronic sources of belonging need, we have also examined situational threats to belongingness. When people are not chosen for a team or are excluded from a conversation, they are presumed to experience a deficit in their level of belongingness need satisfaction and should be motivated to reduce that deficit (Baumeister & Leary, 1995). To do so, individuals are expected to engage in behaviors aimed at improving their level of social inclusion
(e.g., Lakin & Chartrand, this volume). Therefore, we predicted that situational threats to belongingness would temporarily heighten individuals’ need to belong and would also lead to greater subsequent sensitivity to social information and verbal and nonverbal social cues.

Empirical Evidence

_Chronic Sources of Belonging Need_

As a first attempt at studying the relationship between loneliness and enhanced social sensitivity, we measured individual differences in loneliness using the UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980) among two samples of college students. Participants in one study (Gardner, Jefferis, Knowles & Pickett, 2003) were subsequently exposed to a social memory task. In this task, participants were told that they would be reading about four days in the life of an undergraduate student (matched in gender to each participant) and that they would see a series of entries for each day, much like a diary. These entries were of five different types: positive and negative information related to interpersonal or collective relationships (social information); positive and negative individual information related to individual performance (non-social information); and neutral filler information—i.e., non-valenced individual information. For example, participants read “My roommate and I went out on the town tonight and had a really great time together” (positive social information) and “I got a haircut that I absolutely can’t stand; it’s incredibly ugly” (negative non-social information). After reading all of the diary entries, participants completed a filler task, and then were given a surprise recall task and told to list all of the diary events that they could remember. These responses were then tallied, and as predicted, loneliness was a significant predictor of recall rates of social versus non-social information. Lonely participants remembered a greater proportion of information related to interpersonal or collective social ties compared to non-lonely participants. In addition, this effect was not qualified by valence of the information. Thus, this initial study suggests that
loneliness (a state of unmet belonging need) is associated with better recall of socially-relevant information (regardless of valence) and provides evidence that lonely individual may engage in greater social monitoring.

It should be noted, however, that recalling information about another person presented in a written format does not involve social sensitivity or social skills per se. It may be the case that for social perception tasks that rely on interpersonal sensitivity (e.g., decoding facial expressions), loneliness may be unrelated or negatively related to performance on the task. In other words, loneliness may represent a situation where individuals long for closer social ties and devote more resources to information related to social relationship, but are in fact poor at decoding and inferring meaning from that information. To examine this idea, loneliness was measured in a second sample, and participants’ performance at decoding facial expressions was tested. The Diagnostic Analysis of Nonverbal Behavior 2 (DANVA-2; Nowicki & Duke, 1994) was used as our measure of participants’ ability to detect nonverbal social cues. The DANVA-2 consists of 24 male and female faces depicting four emotions (anger, fear, happiness, and sadness) of high and low intensity. The faces were presented individually for a one-second duration, and participants were asked to judge the emotional expression conveyed by the face presented. Results revealed a significant negative correlation ($r = -.30$) between loneliness and performance on the DANVA-2. Higher levels of loneliness were associated with less accurate facial expression detection.

These data are in line with other studies (e.g., DiTomasso, Brannen-McNulty, Ross, & Burgess, 2003; Jones et al., 1982) that indicate that loneliness is associated with poor social skills. What this suggests for our model of the social monitoring system is that unmet belonging need may indeed lead to greater attention to cues related to social acceptance and belonging (i.e., greater social monitoring), but that it is not necessarily the case that the result of this process will
be enhanced social sensitivity (i.e., accurate decoding of these cues). Because lonely individuals come into the lab with existing social skill deficits, it is impossible in a correlational design to examine how the experience of loneliness *per se* affects levels of interpersonal sensitivity. The goal of our experimental work (described below) has been to get around these issues by experimentally manipulating feelings of belongingness.

In conjunction with this line of research on loneliness, we have also conducted a series of studies (Pickett, Gardner, & Knowles, in press) aimed at examining how individual differences in the need to belong (Leary et al., 2001) relate to various measures of social sensitivity. In a first study, we had participants completed a facial expression identification task (similar to the DANVA-2) where they had to indicate the facial expressions of a series of faces presented individually for one second. Participants also completed a vocal tone identification task where they listened to a series of words spoken in a positive and negative tone of voice and were asked to press a button to indicate the valence of the vocal tone. We predicted that individuals higher in the need to belong would exhibit better performance at these tasks. In support of this prediction, regression analyses revealed significant positive associations between scores on the NTBS and accuracy on the facial expression and vocal tone identification tasks.

In this first study, social sensitivity was examined using two fairly simple tasks—i.e., identifying vocal tone and static emotional facial expressions. However, during daily social interactions, one reason that individuals attend to social cues is so that they can decipher other people’s state of mind. To mimic the type of social challenges that individuals are likely to encounter in their natural social environment, a second study was conducted that included an empathic accuracy task (Gesn & Ickes, 1999; Ickes, 2001; Klein & Hodges, 2001). As noted by Gesn and Ickes (1999), accurate decoding of a target’s thoughts and feelings in an empathic accuracy task requires that perceivers attend to both verbal and non-verbal cues arriving through
visual and auditory channels and combine these cues to infer the target’s state of mind. Because of the complexity of the empathic accuracy task, we felt that it would provide a strong test of the relationship between belonging needs and social sensitivity.

The task itself involved watching a 5 minute videotape of a female college student describing her plans for graduate school and her performance on the GRE. The woman on the video—the target—had recorded her thoughts at feelings at 4 different intervals. As participants watched the video, the experimenter stopped the tape at the intervals at which the target woman had recorded a thought or feeling, and asked participants to write down what they thought the woman was thinking or feeling at that moment. Blind coders then rated participants’ inferences for the extent to which the inferred thought or feeling matched the actual thought or feeling that the woman in the video reported having.

An additional goal of this second study was to disentangle attention to social cues from the correct decoding of those cues. To do so, we altered the vocal tone identification task used in the first study so that it assessed attention to vocal tone as opposed to accurate identification. Using the logic of a Stroop task, it is possible to construct the task so that participants are required to indicate the valence of the word content while ignoring the vocal tone in which they hear the word (see Ishii, Reyes, & Kitayama, 2003; Kitayama & Ishii, 2002). To the extent that individuals attend to vocal tone, they should be faster at indicating the semantic meaning of the word when the vocal tone is congruent with the semantic meaning of the word (e.g., sly spoken in a negative tone of voice) than when the tone is incongruent with the semantic meaning (e.g., sly spoken in a positive tone of voice). We predicted that higher need to belong scores would be associated with a bigger difference between the congruent and incongruent trials in this task (vocal Stroop task) indicating that participants higher in the need to belong attended more to vocal tone.
In line with our expectations, NTBS scores were positively associated with empathic accuracy and attention to vocal tone supporting the contention that the desire for greater social inclusion is related to enhanced social sensitivity. Despite these supportive results, a potential criticism of the studies is that individuals higher in the need to belong may have been motivated to establish positive rapport with the experimenter and thus exhibited better performance to please the experimenter or that need to belong scores may be associated with performance on all types of tasks, not simply those related to social sensitivity. To rule out this alternative hypothesis, a third study was conducted in which participants completed a social sensitivity task (the DANVA-2) and two non-social tasks (a portion of the math GRE and a word-formation task). Results of this third study revealed that NTBS scores were significantly correlated with better performance on the DANVA-2 (replicating previous results), but were uncorrelated with performance on the two non-social tasks. This pattern of correlations suggests that belonging need is not related to all types of task performance and is limited to tasks involving interpersonal sensitivity. Another potential concern with the reported studies is that the NTBS may be correlated with other variables, and these “third variables” may in fact be responsible for the observed pattern of correlations. Although this is an issue with all correlational designs, the relationship between NTBS scores and performance on the DANVA-2 held even when participants’ levels of mood, loneliness, and rejection-sensitivity were statistically controlled.

The results of our program of research involving individual differences in loneliness and the need to belong are consistent with our theoretical model of the social monitoring system. Individuals who perceive a chronic deficit in their level of belongingness appear to monitor their social environment to a greater extent than those with lower levels of need. Furthermore, we found evidence that chronic belongingness deficits are also related to greater attention to social cues and more accurate cue decoding. However, in order to cast a wider nomological net and
establish a causal link between belonging need and social sensitivity, we conducted another line of research designed to examine the effect of situational manipulations of social exclusion on levels of social monitoring and sensitivity.

**Situational Threats to Belonging Need**

Our first attempt at providing empirical evidence for a causal relationship between belonging need and social monitoring involved two studies reported in Gardner, Pickett, and Brewer (2000). In both studies, we had participants engage in what they thought was an internet chat session. In actuality, participants’ internet conversations were rigged and participants were randomly assigned to one of three experimental conditions. A third of the study participants experienced acceptance during the internet conversation. Another third experienced a dyadic rejection—being excluded from a dyadic relationship. The final third experienced a group rejection—being rejected by an entire group. At the end of the internet chat session, participants were asked to complete a social memory task—the same diary task used by Gardner et al. (2003). As expected, after a rejection experience (either dyadic or group) participants recalled a smaller proportion of the non-social, individual activities and a larger proportion of the social (interpersonal or collective) activities. These findings are consistent with the idea that rejection can trigger enhanced monitoring and retention of social information.

Although these studies provided preliminary evidence of SMS activation following a situationally-induced rejection, the methodology used did not allow us to determine whether the observed memory differences were due to differential attention to social information (as hypothesized) or due to changes that occurred at the stage of memory retrieval. Thus, in another study (Pickett et al., in press; Study 2) we sought to provide better evidence that experimental manipulations of social exclusion do, indeed, result in greater attention and sensitivity to social cues. In this study, participants were randomly assigned to one of three reliving conditions...
(rejection, failure-control and neutral-control). In the rejection-reliving condition participants were asked to write about a time in which they felt intensely rejected in some way. In the failure-control condition, participants were asked to write about a time in which they felt intense failure in an intellectual domain. Finally, participants in the neutral-control condition were simply asked to write about their walk (or drive) to campus that morning. The failure recall condition was included as a negative control that was predicted to elicit similar levels of negative affect as the rejection condition while not manipulating feelings of social exclusion. (If enhanced social sensitivity is triggered by social exclusion and not negative experiences in general, then sensitivity should be higher in the rejection-reliving condition than the failure-control condition.)

There were two primary dependent measures in this study—the vocal Stroop task and the empathic accuracy task described previously. Participants also completed a set of manipulation check items, which confirmed that participants in the rejection-reliving condition and the failure-reliving condition experienced comparable levels of negative affect as a result of the reliving task.

Results of the reliving manipulation on the two measures of interpersonal sensitivity provided partial support for our hypotheses. As predicted, participants asked to relive a rejection experience exhibited significantly greater attention to vocal tone than did participants in the neutral-control and failure-control conditions as evidenced by a larger difference in their response times for the congruent and incongruent vocal tone trials. Unexpectedly, however, participants’ performance on the empathic accuracy task revealed the opposite pattern. Participants who were asked to recount a rejection experience were less empathically accurate than were participants in the two control reliving conditions.

What might account for this pattern of data? One clue to a possible explanation is the fact that the vocal Stroop task and the empathic accuracy task differ markedly in the set of skills
required by the two tasks. Perceiving that one has not achieved a desired level of belonging may lead individuals to attend more to social cues (as evidenced by the vocal Stroop task data). However, it may only be with practice and feedback that individuals are able to achieve accuracy in decoding the meaning of these cues. Thus a potential interpretation of the data pattern is that participants in the rejection-reliving condition did indeed attend more to the verbal and nonverbal cues emitted by the target, but lacked the skills to accurately decode the additional information. This is analogous to a novice air traffic controller attempting to read a radar screen. Instead of improving the controller’s accuracy, more information on the radar screen might, in fact, reduce his ability to arrive upon a correct interpretation of the data.

In studying the effects of situational manipulations of social inclusion on interpersonal sensitivity, it may be important to consider the difficulty and complexity of the tasks used to measure sensitivity. We do not believe that activation of the SMS results in immediate expertise at detecting and decoding social cues. Accuracy may require development through repeated attempts to understand social cues. The fact that high need to belong individuals were found to perform better on the empathic accuracy task likely reflects the possibility that high NTB individuals routinely attend to and decode social cues (because their social monitoring systems are perpetually engaged). It may be unrealistic though to assume that enhanced performance on relatively difficult sensitivity tasks will occur after a single situational rejection in the lab. If the social sensitivity task falls within most participants’ skill range, then activation of the SMS through rejection may boost performance. However, if the task falls above that range, then activation of the SMS may lead to no differences in performance or may, in fact, backfire in cases where attending to multiple cues creates confusion or multiple erroneous inferences.
Conclusions

Data from several lines of research have provided encouraging initial support for the operation of a social monitoring system within a larger system for regulating belonging needs. This work indicates that both chronic and situational sources of belonging need are associated with increased social monitoring and social sensitivity. An important goal for future work is linking activation of the SMS to individuals’ subsequent levels of experienced social rejection and exclusion and the quality of their social interactions. A central tenet of our proposed self-regulatory model is that the SMS is an adaptive mechanism that aids individuals in managing future social interactions. As one test of this hypothesis, we plan to manipulate social exclusion in the lab and measure subsequent levels of interpersonal sensitivity. We will then provide participants with an opportunity to engage in a social interaction and will gather ratings of the quality of that interaction and participants’ perceived inclusion from their partner. This work should help elucidate the precise role that the SMS plays in the regulation of belonging needs.

Another question that we plan to address in future research is whether anticipated social rejection or simply the potential for rejection is sufficient to activate the SMS. We have generally conceived of SMS activation as occurring in response to existing belongingness deficits. However, an adept regulatory system may be able to function preemptively so that deficits do not arise in the first place. When people are in a situation where the possibility of rejection is salient, it is likely that they simulate the potential negative outcome (i.e., being rejected). Although the rejection is hypothetical, Baumeister and Tice (1990) argue that the act of simulating a rejection may be experienced similarly to a real rejection—i.e., the simulated rejection may temporarily increase levels of anxiety and negative affect. This sensory information may then serve to activate the SMS resulting in greater interpersonal sensitivity and a higher likelihood of successful subsequent social interactions. This prediction may seem counterintuitive given the
evidence suggesting that anticipating rejection from others tends to be maladaptive (e.g., Downey & Feldman, 1996; Downey, Freitas, Michealis, & Khouri, 1998; Murray, Holmes, MacDonald, & Ellsworth, 1998). However, the simulation process described above is quite different from cases where individuals expect to be rejected or believe that rejection is likely to occur. In the case of simulation, individuals are simply considering how it would feel to be rejected without having an *a priori* reason for expecting a rejection to actually occur.

We began this chapter by noting the significance of social inclusion for physical and psychological health. Because of the importance of belonging for healthy human functioning, we agree with others (e.g., Baumeister & Tice, 1990; Leary, 1999) that systems have likely evolved to help individuals maintain desired levels of inclusion. We believe that our work on the social monitoring system provides one answer to the question of how individuals are able to achieve belonging in the face of real and potential threats to inclusion. The ability for individuals to use social information and cues to seek out appropriate social interactions and decode others’ thoughts and feelings is a critical skill needed for maintaining harmonious social relationships. Future research should be aimed at not only gaining a deeper understanding of the role and scope of the SMS, but also at understanding the other mechanisms that might exist for regulating belonging need.
References


Regulatory Model of Belonging Need

Assessment of Current State of Belonging (via the sociometer)

Lack of Sufficient Belonging Signaled to Self (via negative affect, anxiety, cognitive appraisals, etc)

Social Monitoring System (monitors environment for verbal and nonverbal social cues, opportunities for social connection, etc.)

Further Attempts at Social Interaction

Satisfactory?

Yes

Stop

No