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Losing one's Cool: Social Competence as a Novel Inverse Predictor of Provocation-Related Aggression

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Abstract

Provocations and frustrating events can trigger an urge to act aggressively. Such behaviors can be controlled, but perhaps more so for people who can better distinguish effective from ineffective courses of action. The present three studies (total $N = 285$) introduce a scenario-based measure of this form of social competence. In Study 1, higher levels of social competence predicted lower levels of trait anger. Study 2 presented provocation scenarios and asked people whether they would engage in direct, indirect, and symbolic forms of aggression when provoked. Social competence was inversely predictive of all forms of aggressive responding. Study 3 focused on reactions to frustrating events in daily life. Such events were predictive of hostile behavior and cognitive failures particularly at low levels of social competence. The research establishes that social competence can be assessed in an objective manner and that variations in it are systematically predictive of reactive aggression.

Keywords

Social Competence; Knowledge; Individual Differences; Provocation; Aggression

People differ markedly in how aggressive they are when provoked, a form of aggression termed reactive (Crick & Dodge, 1996; Wilkowski & Robinson, 2010). In personality-related terms, reactive aggression is predicted by self-reported traits such as neuroticism and agreeableness (Ode, Robinson, & Wilkowski, 2008). Other trait-related predictors of reactive aggression include impulsivity (Archer & Webb, 2006), hostility (Martin, Watson, & Wan, 2000), and narcissism (Bushman & Baumeister, 1998). Motivational perspectives of reactive aggression link it to individual differences in prefrontal brain asymmetry (Harmon-Jones, 2003), high levels of approach motivation (Carver & Harmon-Jones, 2009), or to factors such as revenge-related desires (McCullough, Kurzban, & Tabak, 2011).

In the present studies, we do not dispute any of these personality or motivational predictors of reactive aggression, but we do suggest that there may be a knowledge-based predictor that has not been investigated – *social competence*. Socially competent people are potentially less likely to engage in reactive aggression because they have learned that this form of behavior does not typically solve interpersonal problems, but rather exacerbates them. This form of behavior does not reduce anger, but typically increases it (Bushman, 2002). It often leads to retaliation from the other, thereby encouraging escalations in hostility and aggression over time (Anderson & Bushman, 2002). Reactive aggression does serious

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damage to personal relationships, reducing social support and social connection as a result (Smith, Glazer, Ruiz, & Gallo, 2004). Reactive aggression is an inverse predictor of popularity and therefore one's social capital (Andreou, 2006). Instrumental concerns (e.g., achieving a personal goal or accomplishing a task) are likely to disfavor this form of behavior as well (Ramirez & Andreu, 2006). Individuals low in social competence would not have these insights to the same extent and would therefore be more likely to engage in reactive aggression precisely because it is very natural and perhaps automatic to aggress against those who provoke us (Berkowitz, 1993).

A more general framework for predicting inverse relations between social competence and reactive aggression follows from dual process models of social behavior. Social behavior is jointly determined by impulsive and reflective processes (Strack & Deutsch, 2004). Impulsive processes are motivationally determined and presumably somewhat automatic (Metcalf & Mischel, 1999). They represent a first and instinctive response to motivationally significant situations (Strack, Werth, & Deutsch, 2006). Such instinctual processes can be overridden when it is unwise to engage in such courses of action (Metcalf & Mischel, 1999). Typically, overriding problematic behaviors is thought to rely on sufficient resources (e.g., Muraven & Baumeister, 2000). In addition, though, there may also be a knowledge-based predictor here, at least from an individual differences perspective. To override a problematic course of action, one must recognize that it is problematic. People low in social competence may lack insight into the problematic consequences of engaging in impulsive actions (Riggio & Reichard, 2008). For this reason, they may exhibit reactive aggression to a greater extent.

Social Competence: History and How to Measure It

Thorndike (1920) was the first to propose that success in daily living seems dependent on what we term social competence – *the ability to get along well with others while achieving one's personal and professional goals*. Guilford (1967) referred to a similar ability, as did Gardner (1983). In the latter case, social competence was referred to as an interpersonal/intrapersonal skill. Sternberg (1988) referred to a similar skill in terms of practical wisdom: procedural skills that are learned, but not taught, in the context of everyday life. He emphasized the tacit, implicit nature of this knowledge and stated that the problems involved are highly contextual and do not necessarily have one correct answer, though some ways of behaving are more successful than others. We see considerable convergence in such theorizing.

The social competence literature, though, has suffered from heterogeneous and problematic assessments of it. Defining social competence in terms of popularity is problematic because it equates social competence with a particular outcome and one that is surely determined by many factors aside from social competence. Defining social competence in terms of social self-efficacy is also problematic in that self-efficacy is a perception of the self's capabilities rather than a demonstrable skill that one has. Defining social competence in terms of empathetic responding neglects the fact that social competence should facilitate interpersonal problem-solving, not just create a particular sort of feeling. There are self-reported measures of social competence, but such measures essentially equate social competence with personality traits. This is problematic in that self-reported personality traits assess beliefs about the self rather than skills that one has. Attempting to embrace the heterogeneous nature of assessments of social competence can only produce further confusions to this literature (Heggstad, 2008).

Fortunately, developments in the emotional intelligence literature provide useful guidelines for the assessment of social competence. There is some agreement in the emotional

intelligence literature that it should be assessed in terms of performance-based measures rather than personality traits (Mayer, Salovey, & Caruso, 2008). We find this suggestion compelling in that self-reports of skills are often poor predictors of relevant skills (e.g., Paulhus, Lysy, & Yik, 1998), including in the realm of emotional intelligence (Bastian, Burns, & Nettlebeck, 2005). The emotional intelligence literature has also generally converged on the idea that skills related to perceiving emotions, understanding them, and knowing what to do in emotional situations are likely distinct factors (Keele & Bell, 2009). Perceiving emotions is a relatively low-level process, understanding them is a relatively intellectual process, and knowing what to do in an emotional situation seems to tap the tacit sort of knowledge emphasized by Sternberg's (1988) idea of practical intelligence (Roberts et al., 2006). The latter skill is often termed emotion management and it is not generally predicted by intellectual ability (e.g., Austin, 2010).

We sought to build on the achievements of the emotional intelligence literature in assessing social competence. As in this literature, social competence was assessed in performance-based terms. Further, it was assessed in terms of the extent to which participants make ratings of effectiveness that converge with normative/expert consensus (Mayer, Salovey, Caruso, & Sitarenios, 2003). Finally, it was assessed in terms of behaviors that might be more or less effective in particular social contexts in a manner consistent with how the emotion management branch of emotional intelligence is typically assessed (Joseph & Newman, 2010). Although the relevant scale (as developed by Krishnakumar, Hopkins, Szmerekovsky, & Robinson, 2013) might be viewed in terms of emotion management, it is actually a much more general one. Participants are asked to rate the effectiveness of various actions in important (work-related) situations that are not defined by emotions that might be evoked. For such reasons, we refer to our scale in terms of social competence rather than emotion management.

In sum, social competence is conceptualized in terms of one's practical knowledge of the effectiveness of various ways of behaving in social situations. Although effective courses of action will vary by the situation, a general feature of social competence is likely the ability to maximize outcomes that benefit both agency (i.e., to get things done) and communion (i.e., to get along with others). Operationally, social competence is defined in terms of the extent to which one's ratings of the effectiveness of a behavior in a social scenario match consensus norms. Such scoring rules follow the idea that there is collective wisdom to the shared opinions of others concerning how to behave in particular situations (MacCann & Roberts, 2008).

Overview of Studies

Three studies examine the hypothesis that lower levels of social competence should predict higher levels of reactive aggression. The Study 1 outcome is trait anger, a trait defined in terms of tendencies toward reactive aggression. In Study 2, individuals were asked how they would respond to provocation-related scenarios. Inverse relations between social competence and a broad range of aggressive responses were hypothesized. Study 3 examined reactivity to frustrating events in daily life. Frustrating events were hypothesized to predict hostile behaviors to a greater extent at low than high levels of social competence. Convergent evidence across the three types of outcomes would establish the generality of the hypothesized relationships.

Study 1

Method

Participants and Procedures—Ninety-four (49 female; 88% Caucasian; *M*age = 19.16) undergraduate students from North Dakota State University received psychology credit for the study, which was completed over the Internet using SONA software for participant registration and Qualtrics for data collection. The social competence (SC) measure was completed first and the anger-aggression measure was completed subsequently.

Social Competence Assessment—Social competence, as we define it, involves knowing which courses of action are effective and not effective in particular social situations. This is not necessarily a question about what an individual does, but rather a question of social knowledge. The assumption, however, is that people lacking such knowledge are unlikely to manage their behaviors effectively in real life. We surveyed available measures of this construct. They either involved self-reports or scenario-based measures that were too emotion-focused to assess SC in broader terms. In combination with other goals (Krishnakumar et al., 2013), we therefore created a measure of social competence, which is available upon request.

Our interactions with others typically involve strangers, colleagues, or significant others. Interactions with strangers may often be relatively fleeting and unimportant. Interactions with significant others are complicated by numerous factors such as whether one in fact has such relationships (e.g., a romantic partner), the extensive histories characterizing such relationships, and the particular people involved in them, each of whom is likely to be quite distinct in multiple ways. In personal relationships, also, instrumental concerns such as how to achieve something take a back seat to relationship management (Finkel & Rusbult, 2008). For such reasons, a focus on work-related situations seemed ideal. People interact with many others at work, often without the goal of appeasing others, and there is an instrumental aim to one's work – i.e., to be as successful as possible in accomplishing work-related tasks.

Krishnakumar et al. (2013) created a social competence assessment on the basis of such considerations. They first generated a large number of work-related scenarios (e.g., “Bob and Linda are contemplating their first small business venture.”). The situations generally involved important rather than trivial occurrences. The list was reduced to 30 scenarios through the use of co-author ratings of the scenarios. Each of the 30 scenarios was then paired with 4 plausible courses of action (e.g., for the Bob and Linda scenario, one course of action was to “have a discussion concerning mutual goals”). In a subsequent study, 15 of the original 30 scenarios were selected on the basis of item-total correlations and criterion prediction (e.g., greater social support as assessed by the Lubben, 1988, scale), with more specific scoring rules discussed below. The number of scenarios was further reduced to 10 on the basis of item-total correlations and structural equation modeling. A unifactor structure was supported. It is important to note that the courses of action for the scenarios were not generally related to aggression. Thus, if social competence predicts aggression, issues of content overlap would not be a concern.

Several additional studies were performed. We showed that SC had moderate correlations with agreeableness (positive) and neuroticism (negative), but none of the other “Big 5” personality traits. SC positively predicted three performance-based measures of emotional intelligence. The strongest relationship was with a situational test of emotion management (STEM: MacCann & Roberts, 2008), a branch that we have indicated overlaps with SC. Further, the STEM's situations are typically not work-related and it therefore appears that SC taps something general to work and non-work contexts. Of further importance, the SC scale predicted a number of workplace outcomes including job performance, leadership

performance, and team performance. These relationships were fairly strong, supporting the validity of the scale. Although the scenarios are work-related in nature, the scale has a broader potential in understanding individual differences outside of the work context. That is, the work context is simply a useful one for examining SC in relationships involving repeated interactions with others in the context of instrumental goals.

There are two criteria that are typically used to evaluate responses to tests of this performance-based type – expert ratings and normative consensus (MacCann & Roberts, 2008; Mayer et al., 2003). In scoring SC, we essentially combined such criteria. Specifically, a group of 30 MBA students with an average of 8.15 years of work experience completed the SC items. It was found that MBA students agreed on the best course of action for these scenarios to a greater extent than did an undergraduate sample. Therefore, these MBA norms are used to score SC on the basis of this test.

The following scoring procedures were used. For each of the 10 scenarios and for each of the 4 response options, we quantified the percentage of MBA students giving a particular rating for the particular course of action. For example, let us say that 23% of the MBA students thought that a particular course of action was effective at 3 along the 1–5 effectiveness rating scale. If a participant gave a rating of 3 for this action for this scenario, he/she would receive a score of .23 for this rating. We then averaged such scores across the 4 actions for a particular scenario and then across the 10 scenarios. On average, SC scores, quantified in this manner, had a mean of .2966 ($SD = .0573$). This average is higher than chance responding, which would produce a mean of .2000. Moreover, there were reliable individual differences in SC scores across the 10 different scenarios ($\alpha = .85$). A higher score reflects greater social competence – i.e., greater agreement with consensus norms. Appendix A provides a verbatim item, effectiveness norms for each of its 4 courses of action, hypothetical responses of a participant, and how these hypothetical responses would be scored.

Individual Differences in Anger-Aggression—We sought to assess propensities toward anger-motivated aggression. The best trait-related measure of this type is arguably the trait anger measure developed and validated by Spielberger and colleagues (Spielberger, Jacobs, Russell, & Crane, 1983). It predicts angry feelings and aggressive behaviors in both laboratory and applied prediction contexts (Bettencourt, Talley, Benjamin, & Valentine, 2006; Deffenbacher, 1992; Wilkowski & Robinson, 2010). This is probably the case because the 10 items refer to angry responses to provocation (e.g., “It makes me furious when I am criticized in front of others”) and, in turn, aggressive behaviors in the context of such feelings (e.g., “When I get mad, I say nasty things”). Spielberger et al. (1983) have reported factor analytic results in favor of this scale and a high degree of reliability for it. The scale asks participants the frequency with which (1 = almost never; 4 = almost always) the items characterize the self ($M = 2.05$; $SD = 0.64$; $\alpha = .91$).

Trait-Related Predictors of Anger-Aggression—Krishnakumar et al. (2013) found that SC was positively (though modestly) predicted by the trait of agreeableness and negatively (though modestly) predicted by neuroticism. These two traits, in particular, are also robust predictors of provocation-related aggression (Ode et al., 2008). Accordingly, it seemed useful to include brief assessments of these traits in Study 1, primarily for purposes of establishing discriminant validity. We did so using the relevant scales of Gosling, Rentfrow, and Swann (2003). Participants were asked the extent to which (1 = disagree strongly; 7 = agree strongly) two markers of neuroticism (e.g., “anxious, easily upset”; $M = 3.02$; $SD = 1.20$; $\alpha = .66$) and two markers of agreeableness (e.g., “sympathetic, warm”; $M = 4.97$; $SD = 1.12$; $\alpha = .61$) generally characterize the self.

Results and Discussion

It was hypothesized that lower SC scores would predict higher levels of trait anger. This prediction was supported by a correlation of $r(92) = -.37, p < .01$. The systematic relationship cannot be understood in terms of method variance factors or content overlap considerations, given that the SC items did not generally involve provocation-related scenarios. The inverse relationship remained significant when controlling for participant sex in a multiple regression, $t(91) = -3.83, p < .01$, Beta = .38.

Replicating Krishnakumar et al. (2013), agreeableness predicted higher levels of SC, $r(92) = .31, p < .01$, whereas neuroticism was a negative predictor, $r(92) = -.30, p < .01$. Replicating Ode et al. (2008), neuroticism was a positive, $r(92) = .41, p < .01$, and agreeableness was a negative, $r(92) = -.39, p < .01$, predictor of trait anger. We therefore performed a multiple regression in which SC, neuroticism, and agreeableness were entered as simultaneous predictors of trait anger. Controlling for the latter personality traits, SC remained a significant predictor, $t(90) = -2.14, p < .05$, Beta = $-.21$. Accordingly, Study 1 provides initial evidence for the idea that low SC individuals are prone to provocation-related aggression regardless of their standing on the personality traits of neuroticism and agreeableness.

Study 2

Reactive aggression is defined in terms of responding aggressive when provoked, yet provocations were inferred rather than directly modeled in Study 1. In Study 2, instead, we asked people how they would respond to provoking events (e.g., a friend calling one “stupid” during an argument) using the Anger Response Inventory (ARI; Tangney, Wagner, Marschall, & Gramzow, 1991). A benefit of the ARI is that it is a comprehensive assessment of multiple forms of aggressive responding, in hypothetical terms, 3 of which are direct, 2 of which are indirect, and 2 of which are displaced. This allowed us to examine the generality of links between social competence and aggressive responding. Another interest of Study 2 was in whether social competence would predict revenge motivation, defined as a desire to “get back” at the provoking entity. Social competence is defined behaviorally, not in terms of such motives for revenge. Accordingly, we hypothesized that social competence would not predict revenge motivation, but would rather predict aggressive responding in the context of such motivations. That is, people high in social competence might want to behave aggressively, but would not endorse such behaviors owing to their greater insight into effective ways of responding in social situations.

Method

Participants and Procedures—Participants were 94 (43 female; 97% Caucasian; M age = 19.41) undergraduates from North Dakota State University who received course credit. They signed up for the study using SONA software and completed the study online using Qualtrics software. The SC measure was completed first and the anger response inventory (see below) was completed subsequently.

Social Competence Assessment—Social competence was assessed in the same manner as in Study 1. It was again scored using MBA norms for the scenarios. Descriptive statistics were comparable to the first study ($M = .2919$; $SD = .0551$; $\alpha = .85$).

Responses to Provocation—In Study 2, we sought to investigate how people would respond to provocations across a variety of situations, both in terms of motivations and behaviors. We did so using selected questions from the ARI (Tangney et al., 1991). The instrument does not ask people whether they are generally aggressive, but rather seeks to

understand responses to more specific sorts of provocations from strangers, co-workers, and friends. The scale is modeled on the highly successful Test of Self-Conscious Affect (Tangney, Wagner, & Gramzow, 1989), which is an oft-used measure of proneness to shame and guilt. Based on item-total correlations and feedback from focus groups, Tangney et al. (1991) settled on 23 provocation-related scenarios for inclusion in the ARI. An example scenario is “During an argument, a friend calls you ‘stupid’.”

One interest was in whether SC might predict motivations to retaliate to the provocations. The ARI has such a measure. The authors term it malevolent intentions, but we term it *revenge motivation* given what is actually assessed. In response to each of the 23 scenarios, participants are asked how much they would like to “get back” at the provocateur (e.g., “How much would you feel like getting back at the boss?”; 1 = not at all to 5 = very much). Such responses were averaged across the 23 scenarios ($M = 2.75$; $SD = 0.81$; $\alpha = .93$).

The primary interest was in whether people would endorse acting aggressively when provoked. The ARI comprehensively assesses various forms of aggressive responding, though relevant items are only included when they make sense for the particular scenario (Tangney et al., 1991). All items are rated in terms of the likelihood that the self would engage in the indicated behavior (1 = not likely; 5 = very likely). Seven items assess *direct physical aggression* (e.g., “I’d shove the friend against the wall”; $M = 1.85$; $SD = 0.85$; $\alpha = .50$), 8 assess *direct verbal aggression* (e.g., “I’d yell at the person and call him or her names”; $M = 2.17$; $SD = 0.84$; $\alpha = .75$), 7 assess *direct symbolic aggression* (e.g., “I’d slam something on the bosses desk”; $M = 2.12$; $SD = 0.71$; $\alpha = .65$), 10 assess *indirect malediction* (e.g., “I’d tell the other people in the line how rude the person was”; $M = 2.34$; $SD = 0.74$; $\alpha = .79$), 11 assess *indirect harm* (e.g., “I wouldn’t speak to the friend for at least a week”; $M = 2.10$; $SD = 0.72$; $\alpha = .76$), 7 assess *displaced physical aggression* (e.g., “I’d shove the next person who got in my way”; $M = 1.63$; $SD = 0.84$; $\alpha = .68$), and 7 assess *displaced verbal aggression* (e.g., “I’d snap at the ticket clerk”; $M = 1.90$; $SD = 0.86$; $\alpha = .81$). The descriptive statistics reported are from the present study.

Trait Assessments of Neuroticism and Agreeableness—For purposes of establishing discriminant validity, neuroticism ($M = 3.23$; $SD = 1.28$; $\alpha = .56$) and agreeableness ($M = 5.21$; $SD = 0.96$; $\alpha = .36$) were again assessed in terms of the relevant scales of Gosling et al. (2003). Reliabilities for these scales were lower in Study 2 than in Study 1, though Gosling et al. (2003) have suggested that reliabilities for these scales typically underestimate their predictive validity.

Results

Revenge Motivation—Social competence is defined in behavioral rather than motivational terms. For this reason, we did not necessarily hypothesize a relationship between SC and revenge motivation, which was in fact absent, $r(92) = -.14$, $p > .15$. Subsequent results should thus be interpreted in terms of desiring revenge, but not acting on such desires, though a further analysis of this type will be performed.

Predicting Seven Forms of Aggressive Responding—There are reasons to make distinctions among types of aggressive behavior. For example, direct aggression, at least of a physical type, may be more characteristic of males, whereas indirect aggression may be more characteristic of females (Archer & Webb, 2006). In the present context, however, we hypothesized that participants scoring lower in SC would endorse 7 potential forms of aggressive behavior to a greater extent.

Such predictions were confirmed. There were inverse relations between SC scores and endorsement likelihoods of engaging in direct physical aggression, $r(92) = -.58, p < .01$, direct verbal aggression, $r(92) = -.52, p < .01$, direct symbolic aggression, $r(92) = -.57, p < .01$, indirect malediction, $r(92) = -.44, p < .01$, indirect harm, $r(92) = -.62, p < .01$, displaced physical aggression, $r(92) = -.67, p < .01$, and displaced verbal aggression, $r(92) = -.53, p < .01$. Moreover, these inverse relations were strong. Not surprisingly, then, SC remained a predictor of these 7 types of aggressive responses when controlling for participant sex in multiple regressions, all Betas lower than $-.42$, all p -values $< .01$. At least in response to the scenario-based provocations of the ARI, then, it is clear that higher levels of SC are predictive of lower levels of aggressive responding concerning diverse types of potential aggressive behaviors.

From Revenge Motivation to Aggressive Responses: The Potential

Moderating Role of SC—The results so far are suggestive of a pattern whereby revenge motivation is less likely to predict aggressive responding as SC increases. To more systematically examine this hypothesis, we conducted a multiple regression. Individual differences in SC were z-scored, as were individual differences in revenge motivation. An interaction term was then created by multiplying these z-scores (Aiken & West, 1991). The dependent measure averaged across the 7 forms of aggressive responses for parsimony's sake and given the generality of inverse relationships reported above. In this analysis, there was a main effect for Revenge Motivation, $t(90) = 8.03, p < .01$, Beta = .54. Even with revenge motivation controlled, there was still an inverse relationship between Social Competence and aggressive responding, $t(90) = -8.19, p < .01$, Beta = $-.53$. Finally, there was a Revenge Motivation by Social Competence interaction, $t(90) = -2.11, p < .05$, Beta = $-.14$. As shown in Figure 1, Revenge Motivation was a stronger predictor of aggressive responding at a low (-1 SD) level of social competence, $t(90) = 5.72, p < .01$, Beta = .72, than at a high ($+1$ SD) level, $t(90) = 4.18, p < .01$, Beta = .36. In other words, there is a more direct relationship between revenge motivation and endorsements of aggressive behaviors at low levels of social competence.

Establishing Discriminant Validity—For parsimony's sake, we focused this set of analyses on aggressive responses averaged across the 7 distinct forms of it. In zero-order terms, variations in SC were not predicted by the personality traits of neuroticism or agreeableness, $ps > .80$. Neuroticism was a positive, though not significant predictor of aggressive responding, $r(92) = .13, p > .35$, and agreeableness was a significant negative predictor, $r(92) = -.26, p < .05$. With neuroticism and agreeableness controlled in a multiple regression, SC remained a strong predictor of aggressive responding, $t(90) = -7.87, p < .01$, Beta = $-.62$.

Discussion

Study 2 conceptually replicated the results of Study 1 while extending them. People were not asked to characterize their levels of trait anger, but rather to indicate, concretely so, how they would respond to a variety of provocation-related scenarios. Social competence was a strong inverse predictor of potential aggressive responses to provocation and this inverse relationship remained when controlling for the traits of neuroticism and agreeableness. The scenarios were certainly provoking and revenge motivation did not vary by SC. However, a further analysis revealed that revenge motivation was a stronger predictor of aggressive responding at a low level of SC relative to a high level of SC. In other words, social competence appears to buffer the impact of provocations to aggression, a theme further pursued in Study 3.

Study 3

Study 2 involved responses to provocation-related scenarios. This seemed the most efficient way of examining aggressive responses to provocations and one that had the additional benefit of examining a wide variety of types of potential aggressive action. Furthermore, it is generally recognized that behavioral intentions are an excellent predictor of actual behaviors, in the .6–.7 range (Fishbein & Ajzen, 2010). Nonetheless, it seemed useful to focus on behaviors in Study 3. Of perhaps more importance, Study 3 does so using a daily diary protocol. Such protocols are thought to capture “life as it is lived” – i.e., in response to ecological factors, in a non-laboratory context, and in relation to reactivity effects possessing a high degree of external validity (Bolger, Davis, & Rafaeli, 2003). Accordingly, participants in Study 3 completed a 14 day reporting protocol in addition to completing the SC measure at a different time.

The ARI provocation situations of Study 2 are relatively specific and intense (Tangney et al., 1991). This is an admirable feature for scenario-related measures, but not for daily diary protocols. In such protocols, event-related measures should be relatively common and also general enough to apply to all individuals (Bolger et al., 2003; Conner, Tennen, Fleeson, & Barrett, 2009). In the daily diary protocol of Study 3, we therefore focused on the occurrence of frustrating events. Frustrating events are common (Tennen, Affleck, Armeli, & Carney, 2000), can be conceptualized quite generally in terms of plans or goals being thwarted (Carver & Scheier, 1998), and are considered a primary elicitor of reactive aggression (Berkowitz, 1993). We assessed outcomes that might vary by frustration in two ways. First, participants reported on their daily hostile behaviors (e.g., criticizing another person). Second, participants reported on their cognitive failures, defined as mental lapses such as forgetting an appointment. There is evidence that cognitive failures increase when people are frustrated (Reason, 1990), a phenomenon that may parallel frustration’s effects on reactive aggression (Berkowitz, 1993). In the case of both outcomes, we hypothesized that daily frustrating events would predict them to a considerably greater extent at low relative to high levels of social competence. Essentially, people low in social competence would “lose their cool” on high-frustration days.

Method

Participants and Procedures—Participants signed up for a “Daily Diary Study”. They then reported to a laboratory in groups of 6 or less. During this session, demographics (as well as measures not relevant to the present predictions) were assessed and the procedures for the daily portion of the study were explained. At the end of this week, starting on Saturday, participants began a 14 day reporting protocol. During this portion of the study, participants were sent daily reminder emails, which also included participant numbers and internet links to the SurveyMonkey survey.

Reports were to be completed each day between the hours of 8 p.m. and 3 a.m. An a priori decision was made to drop the small minority of participants (12) not completing at least 9 of the 14 reports. Among the included participants, an average of 12.69 (90.5%) of daily reports were completed. Three weeks after the last daily report, participants completed the SC assessment over the internet. They were given course credit for the laboratory session and monetary compensation for the other portions of the study. In total, 97 participants (68 female; 89% Caucasian; M age = 19.04) completed all of the measures.

Social Competence Assessment—Individual differences in SC were assessed in the same manner as in Studies 1 and 2 (M = .3082; SD = .0438; α = .76).

Daily Measures

Frustrating Events: Frustration is a major cause of aggression and other problematic reactions (Berkowitz, 1990; 1993). Further, frustrating events occur with some frequency in daily life, therefore constituting a type of provocation that is well-suited to daily diary studies (Tennen et al., 2000). As a daily provocation (or level 1) variable, we assessed daily frustrating events in relation to two items (“I deserved something and did not get it” & “my plans were blocked”). Both items were rated along a 1 (not at all true today) to 4 (very much true today) scale. Responses to the two items were averaged ($M = 1.57$; $SD = 0.48$; $\alpha = .70$; alpha was computed using the entire dataset of 1738 daily reports).

Hostile Behaviors: The primary outcome was hostile behavior. For each of the 14 days, participants indicated whether (0 = never; 3 = very often) they had engaged in three hostile behaviors (“argued with someone”, “criticized someone”, & “insulted someone”). The three behaviors were averaged ($M = 0.50$; $SD = 0.41$; $\alpha = .78$).

Cognitive Failures: Berkowitz (1993) has emphasized the mentally disruptive effects of frustrating events. Further, we have suggested that low SC people are less reflective, particularly when provoked. As a way of capturing such factors, we also assessed daily cognitive failures, conceptualized as mental lapses that result from inadequate cognitive control (Broadbent, Cooper, FitzGerald, & Parkes, 1982). We did so in relation to three somewhat common cognitive failures (“I forgot appointments today”, “I forgot people’s names today”, & “I had trouble making up my mind today”) rated on a 5-point scale (1 = strongly disagree; 5 = strongly agree: $M = 1.50$; $SD = 0.38$; $\alpha = .56$).

Results

Multilevel Modeling Procedures—Multilevel modeling (MLM) procedures were used to analyze the daily outcomes as a function of frustration levels. Such procedures are unbiased with respect to differing numbers of daily reports per individual (Bryk & Raudenbush, 1992). They are also ideal for designs (like daily diary ones) in which multiple observations are nested within individuals (Fleeson, 2007). Daily frustrating events comprised the “level 1” or within-person, day-to-day predictor. This variable was person-centered, such that averaging across days for each person would produce a mean of 0, which is a recommended scoring procedure when focusing on interactive hypotheses of the present type (Enders & Tofighi, 2007). Variations in social competence comprised the “level 2” or between-subjects predictor. This variable was z-scored, as is recommended when testing interactions involving continuous between-person predictors (Aiken & West, 1991). The SAS PROC MIXED procedure was used in accordance with the recommendations of Singer (1998). Two models were run, one for hostile behaviors and one for cognitive failures. In both cases, a cross-level (frustrating events by SC) interaction was hypothesized.

Frustrating Events and Hostile Behaviors—In predicting hostile behaviors, there was a main effect for Frustrating Events, $b = .08$, $t = 4.66$, $p < .01$. There was also a main effect for Social Competence, $b = -.12$, $t = -3.33$, $p < .01$. As in Study 2, higher levels of social competence predicted lower levels of hostile behavior, in this case in terms of an ecologically sensitive daily measurement of such behaviors. We add that MLM analyses involving daily diary data often seem underpowered in testing main effects for level 2 predictors and the main effect for SC observed is therefore a robust one. Finally, and as hypothesized, the cross-level interaction was significant, $b = -.04$, $t = -2.04$, $p < .05$.

Estimated means for the cross-level interaction were calculated in accordance with the recommended procedures of Aiken and West (1991). Specifically, we estimated hostile behavior means for those low ($-1\ SD$) versus high ($+1\ SD$) in social competence as a

function of low-frustration (-1 *SD*) versus high-frustration ($+1$ *SD*) days. These estimated means are displayed in the top panel of Figure 2 and they suggest that relations between daily frustrating events and hostile behaviors were stronger at a low level of SC relative to a high level of it. This interpretation of the interaction was confirmed in simple slope tests (Bauer, Preacher, & Gil, 2006). At the low level of SC, there was a strong positive relationship between daily frustrating events and exhibited hostile behaviors, $t = 4.70$, $p < .01$. At the high level of SC, this same relationship, which was strong in normative terms, was not significant, $t = 1.81$, $p > .05$. In sum, frustrating daily events predicted hostile behaviors particularly so among low SC individuals.

Frustrating Events and Cognitive Failures—A second MLM focused on cognitive failures as the daily outcome. In this analysis, the main effect for Frustrating Events was significant, $b = .08$, $t = 4.68$, $p < .01$. This is a noteworthy result in that prior suggestions concerning this relationship had either been largely theoretical or were based on between-person rather than within-person designs. Further, a main effect for Social Competence was found, $b = -.10$, $t = -2.84$, $p < .01$. This result provides evidence consistent with our suggesting that low SC individuals are not particularly reflective in the conduct of their lives. Further, there was a significant Frustrating Events by Social Competence interaction, $b = -.06$, $t = -3.43$, $p < .01$. Estimated means for this interaction are reported in the bottom panel of Figure 2. Simple slope tests revealed that frustrating events predicted cognitive failures at low (-1 *SD*) levels of SC, $t = 5.71$, $p < .01$, but not at high ($+1$ *SD*) levels of SC, $t = 0.84$, $p > .35$. In other words, frustrating events exhibited parallel patterns in predicting hostile behaviors and cognitive failures at low levels of SC.

General Discussion

There are most certainly temperamental, attitudinal, and motivational factors involved in reactive aggression. In addition, though, we suggest that people who engage in reactive aggression more frequently lack social competence. That is, they simply do not possess as much wisdom into the (typical lack of) effectiveness of this form of social behavior and therefore engage in it more frequently for this reason. The purpose of the present studies was to investigate links of this type. A social competence measure quantified the degree to which effectiveness ratings for particular ways of responding to situations matched the consensus of experts. Despite the fact that these situations only rarely involved reactive aggression as a behavioral option, people who scored lower in social competence scored higher in a trait anger-aggression measure (Study 1), endorsed a wide variety of aggressive actions in dealing with potential provocations (Study 2), and engaged in hostile behaviors on high-frustration days (Study 3).

The findings are novel as no one had previously shown that social knowledge is a robust predictor of individual differences in reactive aggression. In addition, several features of the results should be highlighted. Social competence is not a self-reported trait. Therefore, its ability to predict the outcomes cannot be due to method variance. The possible exception to this statement concerns the findings of Study 2, which involved reactions to provocation scenarios. However, even in this context, method variance is not an issue in that the social competence measure does not focus on what the self would do in particular situations, but rather on more abstract social knowledge involving protagonists other than the self and the effectiveness of various courses of instrumental action. Social competence cannot be viewed in terms of hostile attitudes in that Study 2 did not find a significant correlation between social competence and revenge motivation; rather, socially competent individuals were less likely to respond aggressively even in the context of such hostile attitudes. We do not think that socially incompetent individuals always engage in hostile behaviors though. Rather,

they do so particularly when they are provoked (Study 2) or frustrating events occur (Study 3).

In understanding the present findings, it is useful to revisit the impulsive-reflective framework of Strack and Deutsch (2004). Social behaviors can either reflect operations of an impulsive system that responds relatively automatically or a reflective system that more carefully weighs the costs and benefits of engaging in a particular course of action before engaging in it (Metcalf & Mischel, 1999). The impulsive system is likely shared by socially incompetent and competent individuals. This suggestion is consistent with the analysis of Strack et al. (2006). However, the reflective system is more variable across situations and individuals (Strack et al., 2006) and it is in relation to this system that social competence likely operates. Specifically, socially incompetent people engage in reactive aggression to a greater extent because their reflective systems are less capable of guiding behaviors effectively. In other words, socially incompetent individuals are likely more impulsive not because they have temperaments that favor this form of behavior, but rather because they lack the sorts of knowledge that would be useful in choosing more effective courses of action. This analysis suggests that social competence should predict reactive aggression, as we showed, but would be less likely to predict proactive aggression, defined in terms of aggression performed for strategic reasons (e.g., establishing dominance) in the absence of provocation (Crick & Dodge, 1996). Future studies might, however, examine possible links of this type.

Reactive aggression, like many other outcomes of a seemingly dysregulated type (e.g., overeating, gambling), is typically viewed in terms of deficiencies in effortful forms of self-control (Muraven & Baumeister, 2000). There are alternative or at least complementary perspectives of self-control, some emphasizing motivational factors (e.g., Muraven & Slessareva, 2003), some emphasizing awareness of what is currently happening to the self (e.g., Brown & Ryan, 2003), and some emphasizing how potential temptations are construed (e.g., Fujita, Trope, Liberman, & Levin-Sagi, 2006). We suggest that the present findings emphasize a novel factor in the prediction of controlled behavior, at least as currently recognized by the self-control literature. Specifically, our findings suggest an important role for whether people have knowledge concerning whether particular behaviors are likely to be ineffective or effective. To the extent that people lack this knowledge, dysregulated behaviors should be more likely to occur irrespective of factors such as the ego's resources or greater awareness of what is currently happening to the self.

As a test of this sort of knowledge-based hypothesis, we focused on reactive aggression. This focus resulted in a consistent and cumulative body of evidence. However, we suggest that social competence, as we have assessed it, should predict other behaviors typically viewed in term of failures in self-regulation as well. Among other potential outcomes, social competence should be inversely related to eating too much, alcoholism, and insufficient delay of gratification (Baumeister, Heatherton, & Tice, 1994). In addition, low levels of social competence have at least been implicated in poorer relationship functioning (Andreou, 2006), impulse buying (Beatty & Ferrell, 1998), and criminal behavior (Loeber & Dishion, 1983). These sorts of outcomes should be examined in future studies.

Questions and Further Considerations—Social competence has been assessed in terms of heterogeneous traits, self-perceptions, and tasks. Such mixed models and views of social competence have arguably done more damage than good to the literature (Heggestad, 2008). Social competence, at its core, should be defined in terms of social knowledge, not traits or self-perceptions such as social self-efficacy (Ferris, Perrewe, & Douglas, 2002). By doing so, we have been able to support a unidimensional perspective on this construct

(Krishnakumar et al., 2013), one that cannot be viewed in terms of personality traits or self-perceptions in a new guise (Zeidner, Matthews, & Roberts, 2009).

Social competence shares some affinity with emotional intelligence, but social competence represents a broader set of skills (Riggio, 1986). It is most closely linked with the management branch of emotional intelligence, which involves strategic rather than perceptual or experiential processes (Salovey & Mayer, 1989). This is true of the present scale as well (Krishnakumar et al., 2013). Yet, the situations that we chose, although important, were not targeting particular emotions and responses involved effective courses of action rather than how to manage one's emotions. Social competence therefore appears the best label for this scale.

Social competence scores were computed on the basis of MBA norms. This seems desirable in that MBA students have more work-related experiences than undergraduates and they also agree with each other to a greater extent than undergraduates concerning the most effective courses of action to take in the situations presented (Krishnakumar et al., 2013). Further, the use of a consistent set of norms ensures that the scoring system is consistent across samples, which would not be the case if sample-specific norms were used for scoring. Even so, results would be highly similar if sample-specific (undergraduate) norms were used.

Social competence was assessed using work-related scenarios. This seemed an ideal context for assessing this construct. People interact with many others at work, such interaction partners are known but are not typically intimate, and instrumental concerns figure prominently in this context. In other words, the nature of the scenarios constrains and focuses thinking on social relationships of the type we sought to focus on. The scenarios, though, involve situations that no participant has likely experienced (e.g., creating a new start-up company). Accordingly, the results should not be interpreted in terms of very specific work-related experiences but rather social competence in more general terms. The present findings support this idea.

Social competence should be assessed in terms of knowledge rather than actual behaviors (Heggestad, 2008). Yet, having a greater sense of which behaviors might be effective in a given context may not necessarily result in such behaviors. We acknowledge this point, but also suggest that there should be a systematic relationship of this type. Specifically, to the extent that one is low in social competence, it is quite unlikely that effective behaviors can be instantiated regardless of one's desires to do so. In other words, we suggest that moderate social competence is at least a necessary condition for effective social behavior.

How do some individuals acquire greater social competence than others? Our studies were not designed to answer this question, but several possibilities present themselves. Socially competent individuals may be more reflective, may have more extensive socialization histories, or may better learn from experience. The factors that predict social competence clearly warrant further study. Regardless, we were able to show that social competence can be assessed and that it is an inverse and robust predictor of reactive aggression, though laboratory aggression paradigms (Bettencourt et al., 2006) might be useful in extending the present findings.

The results observed should not be ascribed to intellectual ability. Intellectual ability possesses low to moderate correlations with the understanding branch of emotional intelligence, but not with its management branch (Mayer, Salovey, Caruso, & Sitarenios, 2001). In more particular terms, the SC scale administered is most similar to the STEM scale of MacCann and Roberts (2008), which also does not correlate with intellectual abilities (Austin, 2010). Finally, intellectual ability is not generally predictive of how people respond

to provocations or stressors (Ackerman & Heggestad, 1997). It is in part for these reasons that we term our construct social competence rather than social intelligence, as the latter term is somewhat of a misnomer (Austin, 2010; Ferguson & Austin, 2010; Roberts et al., 2006).

People were asked to rate the effectiveness of different ways of responding to hypothetical scenarios. It is important to note that the scenarios (such as starting a business venture) did not typically involve provocations and the courses of action paired with them did not typically involve anything that could be construed as obviously aggressive (e.g., see Appendix A). Therefore, it is unlikely that our results could be ascribed to attitudes towards aggression though we cannot say for certain as such attitudes were not assessed.

Conclusions

The idea that people differ in social competence has a long theoretical history (e.g., Thorndike, 1920). However, questionable operationalizations of this construct (e.g., in terms of self-reported traits) have created a confused literature (Heggestad, 2008). The present studies demonstrate that social competence can be reliably assessed in performance-based terms and that variability in distinguishing effective from ineffective courses of action is a robust predictor of reactive aggression across trait, vignette, and daily diary protocols. The strength of the present findings encourages future applied research in which the possibility of improving social competence through feedback and training is systematically explored, particularly among populations who have been identified as violence-prone.

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Appendix A: Example Item, Norms for the Item, Hypothetical Responses, and Their Scoring

Item: Lila has learned that her favorite employee is now drinking too much alcohol at home. Rate the effectiveness of the following ways of dealing with the situation.

	% of MBA Sample Choosing a Particular Rating				
	1	2	3	4	5
1= not at all effective, 5 = very effective					
Forgive the employee	34%	38%	17%	11%	0%
Probe for personal problems	8%	24%	34%	24%	10%
Confront the employee	4%	14%	41%	31%	10%
Ignore the situation	52%	38%	10%	0%	0%
Hypothetical Responses of a Participant:					
	1	2	3	4	5
Forgive the employee			X		
Probe for personal problems				X	
Confront the employee			X		
Ignore the situation		X			
Scoring of the Hypothetical Responses:					
	1	2	3	4	5
Forgive the employee			.17		

	% of MBA Sample Choosing a Particular Rating				
1= not at all effective, 5 = very effective	1	2	3	4	5
Probe for personal problems				.24	
Confront the employee			.41		
Ignore the situation		.38			

Total Score for the Item for the Participant: $(.17 + .24 + .41 + .38)/4 = .3000$ Scoring Procedures are Identical for the Other Nine Items. A Social Competence Score is given to the Participant by Averaging across His/Her 10 Item-Specific Scores.

Figure 1.
Overall Aggression as a Function of Social Competence and Revenge Motivation, Study 2

Figure 2. Interactions between Daily Frustrating Events and Social Competence in Predicting Daily Hostile Behaviors (Top Panel) and Daily Cognitive Failures (Bottom Panel), Study 3