



# Applying the Cognitive-Affective Processing Systems Approach to Conceptualizing Rejection Sensitivity

Özlem Ayduk\* and Anett Gyurak

University of California, Berkeley

---

## Abstract

The Cognitive-Affective Processing Systems or CAPS theory (Mischel & Shoda, 1995) was proposed to account for the processes that explain why and how people's behavior varies stably across situations. Research on Rejection Sensitivity is reviewed as a programmatic attempt to illustrate how personality dispositions can be studied within the CAPS framework. This research reveals an *if ... then ...* (e.g., if situation X, he does A, but if situation Y, he does B) pattern of rejection sensitivity such that high rejection sensitive people's goal to prevent rejection can lead to accommodating behavior; yet, the failure to achieve this goal can lead to aggression, reactivity, and lack of self-concept clarity. These situation-behavior relations or personality signatures reflect a stable activation network of distinctive personality processing dynamics. These dynamics link fears and expectations of rejection, perceptions/attributions of rejection, and affective/behavioral overreactions to perceived rejection. Self-regulatory and attentional mechanisms may interact with these dynamics as buffers against high rejection sensitivity, illustrating how multiple processes within a CAPS network play out in behavior.

---

## Conceptualizing Rejection Sensitivity as a Cognitive-Affective Processing Disposition

*In his 3-year relationship with Tanya, there has not been a single anniversary that Ian has forgotten – the day they met, the day they officially went on their first date, their first kiss, the day they moved in together ... it was a long list. He remembers each and every one, and doesn't hold back from showering Tanya with surprise extravaganzas. At times like this, Tanya is overwhelmed by how sweet and romantic Ian can be. But then there have been other times when Tanya has felt like Ian is a different person. Tanya has always been very close to her family and has wanted to spend some time with them alone, without Ian – during her week off from work last summer, for example, and most recently during a long weekend getaway that her parents invited her for. Every time Tanya broke the news and for several days afterwards, Ian had been extremely irritated, communicating in subtle and sometimes not so subtle ways that an adult woman should not prefer her parents over her boyfriend, unless of course she was irrecoverably a 'Daddy's girl' and not up to the challenge of living in the adult world. Tanya was hurt about the switch in Ian – from the nicest guy on the block to the inconsiderate, unreasonable Ogre. 'Who is the real Ian?' she thought to herself.*

Although the account above is fictional, dilemmas like Tanya's are not uncommon. We see our friends, parents, spouses, bosses – even ourselves – switch from nice to mean, calm to neurotic, reasonable to impossible with regular frequency. And yet, we know, at least in an intuitive way, that there is meaning, coherence, and stability to ourselves and other people.

What is the underlying system that generates variability in our behavior and at the same time provides organization and coherence to it? In response to this much-debated question, Mischel and Shoda (1995) proposed their Cognitive–Affective Processing Systems (CAPS) Theory, bringing together principles of knowledge activation (e.g., Higgins, 1996) and connectionism (e.g., McClelland & Rumelhart, 1985) with decades of research on social-cognitive processes (e.g., Kunda, 1990). CAPS theory is a meta-theory about how a personality system functions and therefore does not provide a set of specific predictions about particular content areas. As such, there have been few systematic applications of the theory to elucidating the dynamics of specific personality dispositions (Morf, 2006; Rhodewalt & Morf, 2005). To begin to bridge this gap between CAPS theory and its application to content areas, our goal here is to describe research on rejection sensitivity (RS; Downey & Feldman, 1996) as an illustration of how a personality disposition can be studied within the CAPS framework. In so doing, we also hope to provide a rich understanding of the personality dynamics that can help explain the seemingly inconsistent behavior that people show in their romantic relationships, such as with Ian above.

### **CAPS Approach to Personality**

Because the CAPS model has been extensively described before, we will only provide a brief summary here, emphasizing those aspects of the model that we will address in the context of research on RS. Readers should consult Mischel and Shoda (1995, 1998, 2008) and Shoda and Mischel (1996, 2000) for more thorough discussions and reviews of the CAPS model.

#### *Stable if–then profiles and the influence of psychological features of situations*

The central assumption that drives the CAPS model of personality is the recognition that intra-individual variability in behavior across situations can be stable. There is by now wide empirical support for the stability of people's *if... then ...* profiles (e.g., if there is an anniversary, then Ian showers Tanya with flowers, but if she asserts independence, then he becomes manipulative; e.g., Borkenau, Riemann, Spinath, & Angleitner, 2006; English & Chen, 2007; Fleeson, 2001; Fournier, Moskowitz, & Zuroff, 2008; Mendoza-Denton & Mischel, 2007; Shoda, Mischel, & Wright, 1993, 1994; Vansteelandt & Van Mechelen, 2006). In its conceptualization of situations, the model emphasizes the role of situations as they are defined in terms of the person-specific psychological representations they elicit (i.e., psychological features) rather than

in terms of their objective, visible characteristics as settings (i.e., nominal situations).

### *Activation networks of cognitive-affective mediating units*

The relationship between psychological features of situations and behavior is assumed to be mediated by five types of person variables (Mischel, 1973) or cognitive-affective units (CAUs): (1) encodings and construals; (2) expectations and beliefs; (3) feelings and emotions (affects); (4) goals and values; and (5) competencies and self-regulatory abilities. While the mediating units are organized within a stable activation network that reflects the social and biological history of the individual (Mischel & Shoda, 1995), individuals differ in the (1) availability and accessibility of CAUs, and (2) the organization of the inter-relations between CAUs and their activation pathways, and (3) the psychological features that are salient to the personality system.

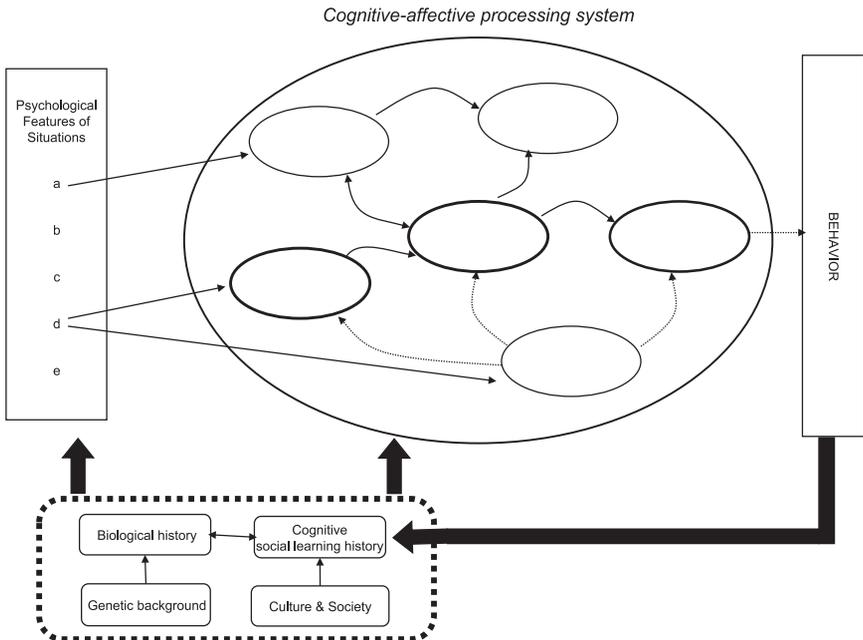
CAPS is thought to function as a connectionist system (e.g., Read & Miller, 1998). Within this system, psychological features of situations first activate a particular CAU. This initial activation then spreads to other CAUs through the stable activation links (excitatory or inhibitory) that characterize the system (Figure 1). It is the network of CAUs that then determines the behavioral responses that are generated in response to the incoming stimuli. The behavioral responses to situations, in turn, impact the environment of the individual in a feedback loop, making the individual an active participant in the construction of his or her social world (Shoda, Lee Tiernan, & Mischel, 2002; Zayas, Shoda, & Ayduk, 2002).

### *Stability and variability in the system*

Overall, the CAPS model explains intra-individual variability in behavior by proposing that different psychological features of situations activate different CAUs that may be associated with different behavioral responses. At the same time, the model addresses stability in personality by redefining dispositions as consistent patterns of organization and activation pathways that are reliably activated in response to particular situational features. What is stable and consistent, then, is the *if-then* profile – the fact that the person's behavior reliably changes from A to B when the psychological situation changes from X to Y.

### *Conceptualizing personality types and dispositions*

At the level of inter-individual similarities between people, the model claims that the prototypic exemplars of a personality type share their *processing dynamics*; that is, they show the same 'patterns and sequences of activation among mediating units that are generated when these individuals encounter or construct situations with relevant features' (Mischel & Shoda, 1995, p. 257).



**Figure 1** A schematic illustration of the CAPS.

*Notes.* Circles within it represent the CAUs, with darker circles, representing more accessible thoughts or affects. The CAUs are inter-connected either through excitatory (solid lines) or inhibitory (broken lines); the darkness of a line indicates the strength of the association between any two CAUs. The multiple influences of biology, genes, culture and idiographic learning history on the CAPS network are illustrated at the bottom. Note that the behaviors that are generated influence one's subsequent experience and the social learning history through a feedback loop, influencing the system's further development and modifying the situations encountered and generated over time.

*Source.* Adapted from Mischel and Ayduk (2004) with authors' permission.

Subsequently, these processing dynamics lead to similarities in the distinctive patterning of behavior across situations *within* personality types. Both theoretically and empirically, a system like CAPS also generates mean level differences in behavior *between* personality types because types differ in the chronic accessibility of CAUs. For example, a personality type for whom encodings of hostile intent are chronically accessible and readily get activated by a wide range of stimuli is likely to be higher in retaliatory behavior across the board than a type for whom such encodings are relatively less accessible.

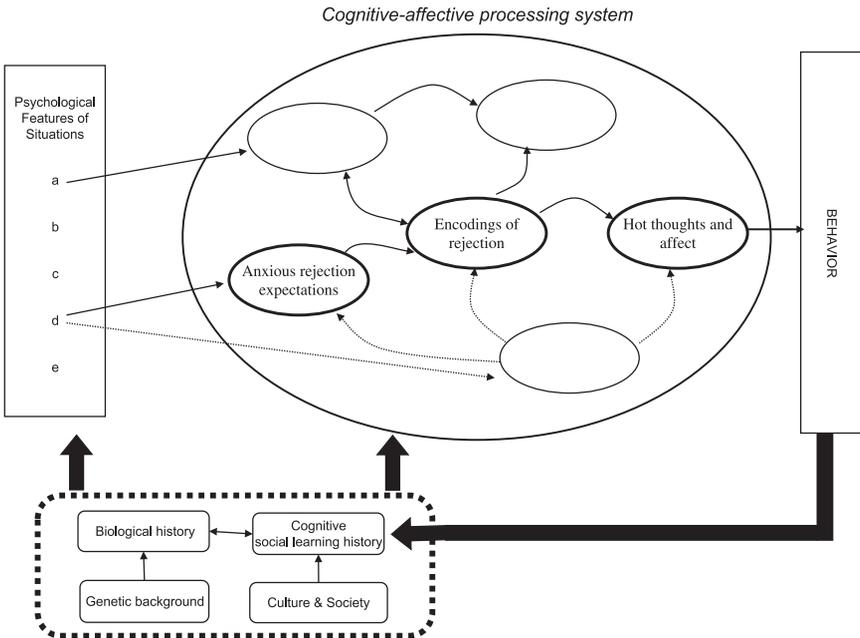
## **RS: A Cognitive-affective Processing Disposition**

Although most people experience rejection one way or another in their lifetime, not everybody responds to rejection with the same kind of intensity and negativity. Such variability in people's reactions to rejection has been harnessed by Downey and colleagues to provide insights into the psychological

processes that characterize the cognitive–affective dynamic known as RS (Downey & Feldman, 1996).

The RS model has its theoretical roots in attachment and attributional theories (Bowlby, 1969, 1973, 1980; Horney, 1937) that emphasize the formative role early interpersonal relationships play in the development of acceptance–rejection schemas and people’s functioning in later relationships. Specifically, RS is thought to develop out of early experiences of rejection, neglect, or abuse. Feldman and Downey (1994) showed that RS was positively related to retrospective reports of parent-to-child and parent-to-parent physical and verbal abuse. Downey, Khouri, and Feldman (1997) further showed that parents’ reports of harsh parenting techniques predicted an increase in their children’s RS over a 1-year period. These early experiences are then carried from one relationship to another, affecting cognition, affect, and behavior in subsequent relationships.

However, rather than describing a global orientation to relationships, the RS model emphasizes the social–cognitive processes through which experiences with caregivers come to affect individuals’ relationship behavior later in life. The RS processing dynamic encompasses a stable activation network linking fears and expectations of rejection, perceptions/attributions of rejection, and affective/behavioral overreactions to perceived rejection (see Figure 2). As such, the model explicitly adopts the CAPS approach in



**Figure 2** A schematic illustration of cognitive-affective processing dynamics that characterize people high in rejection sensitivity.

Source. Adapted from Mischel and Ayduk (2004) with authors’ permission.

its conceptualization, defining RS as a cognitive-affective processing dynamic whereby individuals anxiously expect, readily perceive, and overreact (emotionally and behaviorally) to rejection (Downey & Feldman, 1996; Feldman & Downey, 1994). In what follows, we outline a program of research that has documented the various links of this processing dynamic, highlighting the ways in which these data illustrate the working of a CAPS-like personality system.

### *Situation-sensitive measurement of RS: Contextualizing personality*

Because the RS model conceptualizes anxious expectations of rejection as entry points to the RS processing dynamics, RS has been operationalized in terms of this component. Consistent with the idea that dispositions need to be measured in their diagnostic situations, the Rejection Sensitivity Questionnaire (Downey & Feldman, 1996) presents people with 18 hypothetical situations that can potentially result in rejection. These situations had been identified as relevant to young adults' rejection concerns in focus group discussions (Downey & Feldman, 1996) and involve interaction scenarios with parents, romantic partners and peers (e.g., 'You ask your parents for extra money to cover living expenses', 'You ask someone you don't know well on a date', 'You ask someone in class if you can borrow their notes'). For each situation, individuals indicate the extent to which they would be concerned and anxious about the possibility of rejection (i.e., anticipatory anxiety and fear), and their subjective likelihood estimates of rejection as a possible outcome (i.e., expectations of rejection).

RS in each situation is calculated by multiplying the degree of anticipatory anxiety with the level of expectation of rejection. The adoption of an expectancy-value model (Bandura, 1986) captures the notion that individuals who are high in RS do not merely expect rejection (as, e.g., telephone solicitors do) but also feel threatened by the possibility of rejection (which telephone solicitors do not). Individuals low in RS, in contrast, have a tendency to expect acceptance and to be less concerned about the possibility of rejection. As psychometric studies have indicated a stable one-factor structure, an overall RS score is calculated as the average anxious expectation ratings across the 18 situations (see Downey & Feldman, 1996 for details of psychometric properties). Although RS is correlated with a number of conceptually similar measures, several studies indicate that it is not redundant in its predictive utility with trait neuroticism, self-esteem, general attachment style, social anxiety, and social avoidance (Ayduk, Downey, & Kim, 2001; Ayduk et al., 2008b; Downey & Feldman, 1996; Downey, Mougios, Ayduk, London, & Shoda, 2004).

### *Rejection as the psychological feature eliciting anxious expectations of rejection*

In addition to adopting a contextualized measurement approach, the RS model also hypothesizes that the processing dynamics of high RS are activated

in situations that are particularly relevant to rejection. Downey et al. (2004) showed this in a study using the human startle probe paradigm. The startle-probe paradigm is a well-established measure of the activation of physiologically based defensive motivational system (Lang, Bradley, & Cuthbert, 1990). Briefly, in this paradigm, participants are presented with loud bursts of noise while viewing pictorial stimuli of different valence and arousal levels. The startle reflex is a naturally occurring defensive reaction to a loud noise. However, the strength of the startle reflex (measured by the magnitude of its eye-blinking component) can be accentuated or attenuated by the psychological situation the person is. That is, the startle response gets potentiated when people hear a loud noise while viewing negatively valenced, high arousal pictorial stimuli, such as mutilated bodies, but attenuated while viewing positively valenced, arousing stimuli, such as pictures of lovers making love. Therefore, the magnitude of an individual's startle response can be interpreted as the degree to which particular classes of negative stimuli activate threat and physiologically based defensive action tendencies for that person.

The rationale underlying the startle paradigm implies that to the extent that the high RS dynamic entails the context-dependent activation of the defensive motivational system by rejection cues, then high RS individuals should show greater potentiation of their startle reflex while viewing pictorial stimuli depicting rejection. Consistent with this notion, high RS individuals have been found to startle more strongly than low RS individuals while viewing artwork by Edward Hopper that depicts scenes of rejection, social isolation, or interpersonal alienation but not while viewing non-representational artwork by Mark Rothko which elicit general negative affect (Downey et al., 2004). These findings show that situations that signal or communicate rejection are potent elicitors of the processing dynamics that characterize high RS.

### *The stable activation network of CAUs in the RS dynamics*

*Anxious expectations* → *perceptions of rejection*. What are the processes that unfold once defensive physiological states and behavioral tendencies are activated by anticipation of rejection? Extensive evidence from animal and neurobiological studies indicate that anticipation of threat orients the individual towards cues of possible threat and gives top-down (i.e., schema-driven) processing an advantage in interpreting those cues (Davis, 1992; Öhman, Flykt, & Esteves, 2001). This means that in rejection-relevant contexts, high RS individuals should show a readiness to detect and interpret possible cues of rejection in line with their prior expectations. This hypothesized link between anxious expectations of rejection and perceptions/attribution of rejection among high RS individuals is well supported empirically. In laboratory studies, participants high in RS are more likely to perceive rejection than those low in RS when interaction partners leave the study after a brief introduction, even when alternative explanations such as lack of time exist (Downey & Feldman,

1996, Study 2). High RS people in ongoing relationships also attribute more intentional rejection to their partners' cold or aloof behavior (Downey & Feldman, 1996, Study 3). A recent study further shows that high RS is associated with a lower threshold for detecting anger in facial pictures when the stimuli contained cues of anger (i.e., they had been blended from pairs of photographs depicting neutral and angry expressions) but not with the perceptual threshold for blends of neutral expressions with other emotions (Olsson, Carmona, Downey, & Ochsner, 2008).

*Anxious expectations → prevention efforts.* At the same time that activation of the defensive motivational system promotes a readiness to interpret others' behavior as rejecting, it also motivates coordinated efforts to prevent or avoid the anticipated rejection. For example, high RS people in ongoing relationships report silencing their thoughts and emotions to not 'rock the boat', especially if they are also concerned about preventing negative outcomes from happening (Ayduk, May, Downey, & Higgins, 2003). Adolescent girls report greater willingness to do things they know are wrong, to keep their partners in the relationship to the extent that they are high in RS (Purdie & Downey, 2000). Along similar lines, qualitative interviews with incarcerated women high in RS also indicated that the desire to maintain a relationship played a role in some of their criminal activities (Bedell, 1997). Recently, Romero-Canyas, Downey, Cavanaugh, and Pelayo (2008) have also shown that when men received an initial negative evaluation by a group but were then given a second chance, those high in RS showed exaggerated efforts to regain acceptance through ingratiation. These findings indicate that high RS people put effort into preventing rejection to the point of over accommodating their partner and potentially compromising other personally important goals.

*Perceptions of rejection → hostility.* In summary then, the defensive motivational states experienced in rejection-relevant contexts stimulate efforts to prevent the threat of rejection from being realized, while maintaining high RS individuals' readiness to detect rejection cues. However, perceived failure of prevention efforts and the detection of the long anticipated but dreaded rejection, triggers feelings of hostility and readily translate into reactive aggression. It is hypothesized that even when both high and low RS people similarly perceive rejection, high RS people's reactions are more negative and intense because the negative arousal that had fueled goal-directed attempts at prevention instead now propels defensive responses.

Again, a host of empirical findings link perceived rejection to hostile thoughts and aggressive behaviors in high RS individuals. To illustrate briefly, Ayduk, Downey, Testa, Yen, and Shoda (1999) have demonstrated a stronger mental association between thoughts of rejection and thoughts of hostility for high RS women. That is, when participants were primed with rejection-related context words (e.g., abandon) in a priming-pronunciation paradigm,

those high in RS started pronouncing hostility related words (e.g., hit) more quickly than low RS individuals (Ayduk et al., 1999; Study 1). This effect was not observed when context words were negative in valence but unrelated to rejection (e.g., vomit), underscoring once again the situation specific activation of the high RS dynamic. Translated into the language of CAPS theory, this set of findings show that the processing dynamics of high RS are characterized by a stronger activation pathway between thoughts of rejection and thoughts of hostility. Hostile thoughts activated by rejection also seem to translate into actual hostile and aggressive behavior. Laboratory studies in which participants were led to believe that a potential online partner had no interest in further interacting with them after having read their biosketch elicited greater retaliatory rejection (e.g., giving less favorable impression ratings to the rejector) and aggressive behavior (e.g., allocating greater amount of hot sauce to the rejecter knowing he/she does not like hot sauce) in high than in low RS individuals (Ayduk et al., 1999, Study 2; Ayduk, Gyurak, & Luerssen, 2008a).

This link between rejection and hostility observed in lab studies also plays out in high RS individuals' ongoing relationships. For example, high RS women were more likely to pick a fight with their partners than low RS women if they felt rejected (Ayduk et al., 1999, Study 2), and tended to express more hostility towards their partners both verbally and non-verbally in conflict situations (Downey, Freitas, Michaelis, & Khouri, 1998; Study 2). Similarly, high RS men invested in romantic relationships reported using more physical aggression tactics in coping with conflicts with their romantic partners than low RS men (Downey, Feldman, & Ayduk, 2000).

*The self-fulfilling prophecy.* Consistent with the CAPS model of personality, the high RS processing dynamic is partly maintained by a feedback loop that reflects the operation of a self-fulfilling prophecy (Downey et al., 1998). More specifically, several studies have demonstrated that high RS people's hostility plays a crucial role in eliciting actual partner rejection. Both a diary study of couples (Downey et al., 1998; Study 1) and a lab based study in which couples discussed areas of disagreement (Downey et al., 1998; Study 2) showed that high RS women's partners' reported more anger and thoughts of ending the relationship following the conflict. Furthermore, it was high RS women's greater hostility during the conflict that explained why their partners' reported more anger after the conflict (Downey et al., 1998; Study 2). Although the self-fulfilling prophecy component of the dynamic has been more clearly demonstrated for women than for men, the relationships of both high RS men and women are likely to end sooner than those of low RS individuals (Downey et al., 1998). Furthermore, we have consistently found high RS to be over represented among people who are not involved in relationships, providing one more piece of evidence towards high RS people's difficulty in maintaining or establishing close relationships (e.g., Ayduk et al., 2003; Gyurak & Ayduk, in press).

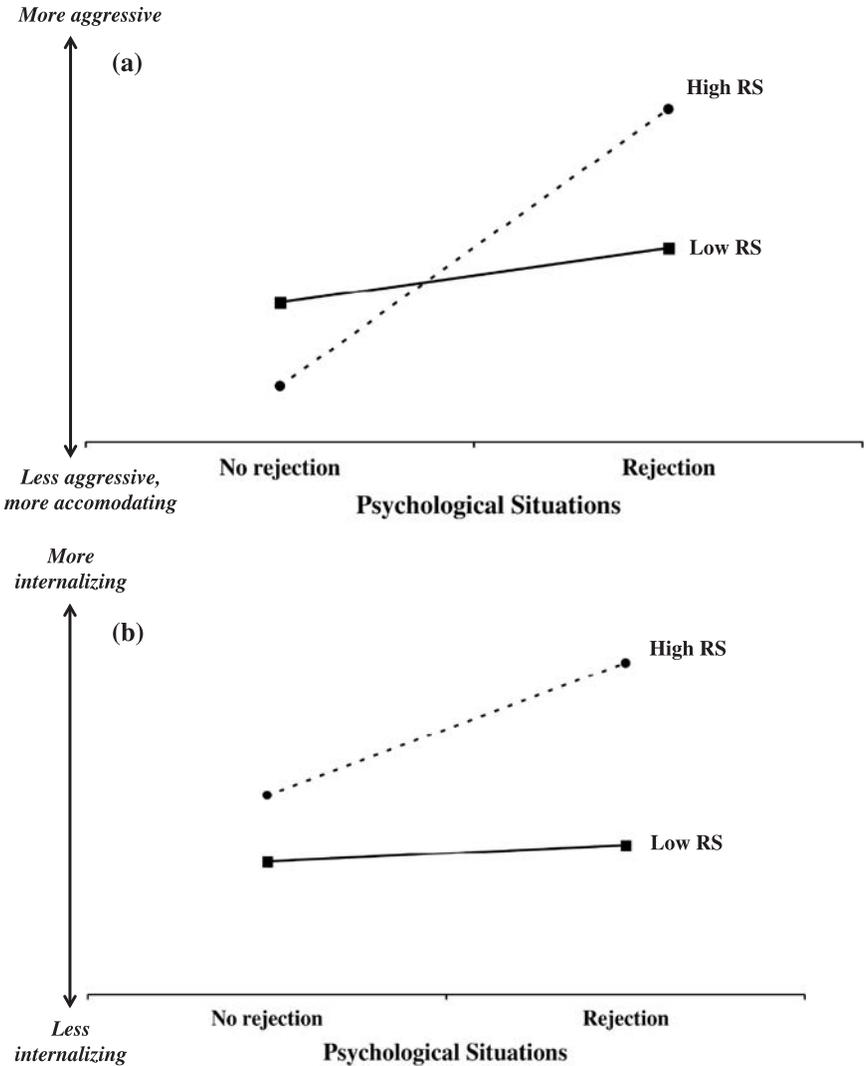
*Perceived rejection* → *internalizing responses*. While rejection has detrimental effects on high RS people's relationships because it sets into motion hostile behavioral reactions that in turn elicit actual partner rejection, rejection also leads to internalizing symptoms in which negative reactions following rejection are directed at the self. Ayduk et al. (2001) assessed depression at the beginning and at the end of an academic year. They found that although high RS women were more depressed than low RS women across both time points, high RS women's depression increased significantly between the two assessments if they had experienced a partner-initiated breakup in the interim. High RS women did not show the same degree of vulnerability to increased depression, however, if they themselves had initiated the breakup, presumably because self-initiated breakups do not communicate rejection in the same way partner-initiated breakups do. Neither did experiencing academic failure (i.e., getting a lower GPA than they anticipated) significantly increase high RS women's depression, underscoring the unique link between rejection and depression in high RS people's CAPS.

Rejection also seems to have a strong effect on reducing high RS individuals' clarity about their sense of self; that is, the degree to which their self-concept is clearly defined, internally consistent, and temporally stable (Campbell, 1990). Because high RS individuals' sense of self may be organized centrally around their ability to prevent or avoid rejection, experiences that communicate their failure in this domain may serve as a potent force that undermines the structural stability of their self-concept. Indeed, Ayduk, Gyurak, and Luerssen (2008) showed that high RS people reported feeling less clear about their self-concept than low RS individuals following a rejection experience delivered in the lab, but not otherwise (Study 2). Likewise, in the context of their ongoing dating relationships, high RS people reported significant reductions in their clarity of their self-concept compared to low RS people after having had conflicts with their partners, which elicit perceptions of rejection (Ayduk et al., 2008, Study 3).

### *Mean level differences and if ... then ... profiles of RS*

An important prediction of the CAPS theory is that a personality system such as CAPS generates both mean level differences and if-then profile differences between personality types (Mischel & Shoda, 1995). With respect to aggression, the empirical evidence on RS strongly suggests that high RS people are not more aggressive than low RS people cross-situationally (also see Mischel, Shoda, & Ayduk, 2007). Rather, the high RS CAPS generates an if-then signature for aggression such that in the presence of psychological features that signal rejection, high RS individuals become reliably more aggressive than low RS individuals; however, in the absence of rejection, high RS people are not particularly more aggressive than low RS – if anything, they tend to engage in more accommodative behavior that are expressions of their efforts to prevent rejection through such means as self-silencing,

putting the partners needs in front of their own, self-ingratiation and so on (e.g., Ayduk et al., 2003). In other words, high RS individuals' signature is one where they are aggressive if rejected but accommodative if they are not. Figure 3a illustrates this if-then signature based on the summary of empirical findings on RS and aggression.



**Figure 3** (a) A schematic illustration of the mean level differences and *if ... then ...* profiles of aggressive behavior for people high vs. low in RS.

Source. Adapted from Mischel, Shoda, and Ayduk (2007) with authors' permission.

(b) A schematic illustration of the mean level differences and *if ... then ...* profiles of internalizing behavior for people high vs. low in RS.

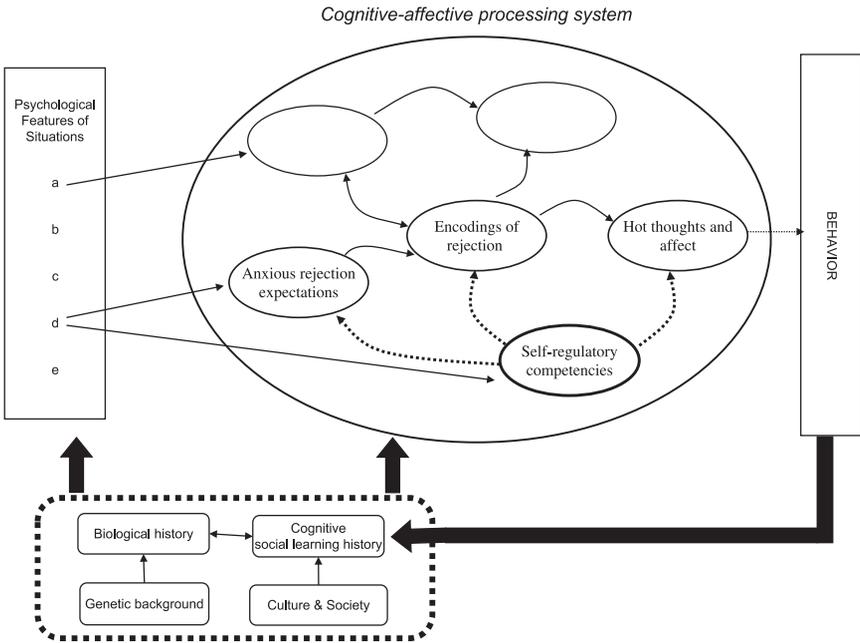
Source. Adapted from Mischel et al. (2007) with authors' permission.

For internalizing behaviors however, the empirical evidence cumulatively points at the existence of mean level differences between high and low RS individuals (Ayduk et al., 2001, 2008a). Even in the absence of rejection, high RS individuals show greater vulnerability to such problems as depressive symptomatology and confusion about their self-concept presumably because they have chronically accessible, internalized representations of past rejection experiences. And yet, the high RS individuals' vulnerability to such reactions gets particularly accentuated following acute episodes of rejection that they perceive or actually experience in their immediate relationships. Figure 3b illustrates these ideas based on the summary of empirical findings on RS and internalizing behavior.

### **Interactions between RS and Self-regulatory Competencies**

The CAPS model explicitly recognizes that the behavioral reactions generated by any personality dynamic are influenced by other CAUs in the system. Consistent with this notion, the behavioral expressions of the high RS dynamics we outlined above have been shown to critically depend on the availability and accessibility of effective self-regulatory competencies. Indeed, extensive evidence accumulated over the past few years document that self-regulatory competencies moderate the processing dynamics of high RS in important ways (see Figure 4). Ayduk et al. (2000, 2008b) have shown, for example, that the ability to delay gratification in childhood serves as a buffer for high RS individuals later in adulthood. This ability is assessed behaviorally in the classic delay of gratification paradigm in which children try to wait for a larger, delayed reward (e.g., two cookies) that they had preferred over an immediately available but less desirable one (e.g., one cookie; see Mischel, Shoda, & Rodriguez, 1989 for review). Underlying individual differences in delay of gratification is the ability to shift one's attention away from emotion-arousing features of the delay situation (e.g., looking at the cookies) and instead engage in self-distraction to keep arousal, frustration, and temptation at bay (see Mischel et al., 1989 for review).

Consistent with the idea that behavioral outcomes associated with high RS may critically depend on individuals' self-regulatory competencies, Ayduk et al. (2000; Study 1) showed that high RS adults (with a mean age of 25) who as preschoolers were able to wait longer for delayed rewards had higher self-esteem than their high RS counterparts with low delay ability (in both parent- and self-reported data). In fact, the former group was indistinguishable from low RS individuals in their sense of self-worth (Ayduk et al., 2000, Study 1). A study conducted approximately 10 years later on a subset of these same individuals further revealed that although high RS individuals showed a general vulnerability towards exhibiting precursors of borderline personality disorder, a common feature of which is over-reactivity to real or imagined rejection (e.g., Dutton, 1994), this vulnerability was attenuated to the extent that they were able to delay gratification as preschoolers decades



**Figure 4** A schematic illustration of the possible interactions between Rejection Sensitivity and self-regulatory competencies in the CAPS. In this network, self-regulatory competencies get activated in rejection-relevant situations and connect to the high RS dynamics via strong inhibitory links, attenuating high RS individuals’ reactions to rejection. *Source.* Adapted from Mischel and Ayduk (2004) with authors’ permission.

earlier (Ayduk et al., 2008b). Similar moderation patterns between RS and delay of gratification ability have been found in a sample of ethnically diverse, low SES middle school children (Ayduk et al., 2000, Study 2).

Research has begun to delineate with greater precision the points at which (e.g., encoding vs. response inhibition) self-regulatory competencies may intervene in the processing dynamics of high RS. Typically high RS individuals exhibit an attentional bias towards rejection stimuli; that is, when faced with rejection cues, they are unable utilize cognitive resources to efficiently complete competing tasks (Berenson et al., 2008, Study 1). However, high RS individuals’ tendency towards such attentional bias was lower to the extent that they were able to inhibit prepotent, habitual responses in a separate behavioral task that measures cognitive control (Ayduk & Gyurak, 2008). Furthermore, among high RS participants, cognitive control was negatively associated with using verbal aggression towards current partners in relationship conflicts. Because attentional bias to rejection and verbal aggression were also correlated, these results suggest that one way in which self-regulatory competencies alter the hostile behavioral expressions associated with high RS may be by reducing attentional processes that come online early in the processing and fuel high RS people’s readiness to perceive rejection.

Along similar lines, Gyurak and Ayduk (2007) presented evidence showing that cognitive attentional control significantly attenuated potentiation of low self-esteem people's startle reflex when viewing rejection-related artwork. Because people with low self-esteem tend to be high in RS, indirect evidence presented by Gyurak and Ayduk (2007) is consistent with idea that self-regulatory competencies can alter the high RS dynamic at a relatively early, preverbal stage of processing.

Additional evidence suggests that alternative self-regulatory mechanisms may alter the behavioral expressions of high RS by enabling response inhibition as well. In particular, in recent work, Gyurak and Ayduk (in press) focused on the role of resting heart rate variability or respiratory sinus arrhythmia (RSA) for inhibition of hostility. Biological bases of individual differences in RSA are believed to reflect the chronic efficiency of the central-peripheral feedback system that modulates the sympathetic and parasympathetic branches of the autonomic nervous system (ANS). The sympathetic and parasympathetic branches of the ANS have opposing influence on heart rate. While sympathetic influence increases the heart rate in situations that require increased energy, parasympathetic influence slows the heart rate and allows for recovery. Therefore, several researchers hypothesize (Porges, 1995; Thayer & Lane, 2000) that resting RSA indexes the flexibility of the central-peripheral feedback system that modulates sympathetic and parasympathetic influences on the heart, with the implication that high levels of RSA indicates a more flexible, better regulated physiological system. Consistent with this interpretation, we found individual differences in RSA to be meaningfully related to relationship behavior among high RS individuals (Gyurak & Ayduk, in press). That is, RS was positively related to behaving in a hostile manner towards current partners in a recent conflict situation among people low in RSA, but not among those high in RSA. Furthermore, high RS-high RSA individuals reported being in better control of their emotions (e.g., being able to respond with reason despite feeling upset, taking into account partner's perspective) during the conflict than high RS-low RSA individuals. In turn, it was this ability to down-regulate negative arousal that explained why high RSA was associated with less hostility among high RS individuals.

## Conclusions

The literature reviewed here on RS provides a concrete illustration of a CAPS system by (1) establishing rejection as the specific situational feature (the *if*) that elicits anxious expectations of rejection; (2) conceptualizing the processing dynamic of this disposition in terms of the activation network among anxious expectations of rejection, perceptions of rejection and affective reactions to rejection; and (3) documenting how this underlying system generates both mean level differences in behavior and *if ... then* profiles. Of critical importance, this research provides insights into how

the CAPS dynamics that underlie high RS can generate seemingly contradictory surface behaviors while simultaneously underscoring the deeper coherence and stability that characterizes this personality disposition.

More specifically, the research on RS has shown that people who are high in RS are also highly accommodating – they self-silence for the sake of stability in their relationships and seem to even overcompensate in their behavior (e.g., by doing things others wouldn't do) for the sake of acceptance. However, when they perceive rejection, high RS people have also been shown to be reliably aggressive and destructive, and to lose their sense of who they are. These diametrically opposite behaviors – accommodation and aggression – are yet tied together by a common processing dynamic that has fears about anticipated rejection at its centerpiece. This analysis suggests that Ian, who never forgets an anniversary with Tanya but also belittles her if she spends time alone with her parents, is neither an Ogre, nor the nicest guy on the block, but really, is both. Thus, the question for Tanya should not be 'Who is the real Ian?' but rather 'When are the different facets of Ian likely to emerge?'

### **Acknowledgements**

Parts of the research summarized in this manuscript were supported by grants from the National Institute of Mental Health (MH039349; MH0697043) and Hellman Family Faculty Fund.

We thank Geraldine Downey, Rodolfo Mendoza-Denton, and Walter Mischel for their valuable comments on an earlier draft.

### **Short Biographies**

Ozlem Ayduk's research is located at the intersection of social, personality, and developmental psychology, and she has authored or co-authored papers in these areas for *Journal of Personality and Social Psychology*, *Psychological Science*, *Journal of Experimental Social Psychology*, *Personality and Social Psychology Bulletin*, *Journal of Research in Personality*, *Emotion*, and *Social Development* among others. Current research focuses on sensitivity to rejection and attentional control as social-cognitive mediators of adjustment, on the role of self-distancing in facilitating adaptive emotion regulation, and on the social and biological precursors of children's self-regulatory competencies as well as their consequences for life long development. Before coming to University of California, Berkeley, where she presently teaches, Ayduk was a post-doctoral scientist at the Columbia University. She holds a BA in Psychology and Political Science from Bogazici University, Istanbul, Turkey, and a PhD in Psychology from the Columbia University in the city of New York.

Anett Gyurak is a doctoral student in psychology at the University of California, Berkeley. She received her undergraduate degree in psychology

from Eotvos Lorand University in Budapest, Hungary. Her current research interests are focused on the effects of executive functions on emotion regulation. She studies this question using a variety of methods such as autonomic nervous system physiology, fMRI, coding of facial emotional behavior and self-report measures in healthy as well as patient populations. Her publications appeared in *Psychological Science*, *Journal of Experimental Social Psychology*, and *Emotion*.

## Footnote

\* Correspondence address: Department of Psychology, University of California, 3210 Tolman Hall, Berkeley, CA 94720-5050, USA. Email: ayduk@berkeley.edu.

## References

- Ayduk, O., & Gyurak, A. (2008). Cognitive inhibitory control as a buffer against rejection sensitivity. *Proceedings of the 1st International Congress on Interpersonal Acceptance and Rejection*.
- Ayduk, O., Downey, G., Testa, A., Yen, Y., & Shoda, Y. (1999). Does rejection elicit hostility in rejection sensitive women? *Social Cognition*, *17*, 245–271.
- Ayduk, O., Mendoza-Denton, R., Mischel, W., Downey, G., Peake, P. K., & Rodriguez, M. (2000). Regulating the interpersonal self: Strategic self-regulation for coping with rejection sensitivity. *Journal of Personality and Social Psychology*, *79*, 776–792.
- Ayduk, O., Downey, G., & Kim, M. (2001). Rejection sensitivity and depressive symptoms in women. *Personality and Social Psychology Bulletin*, *27*, 868–877.
- Ayduk, O., May, D., Downey, G., & Higgins, E. T. (2003). Tactical differences in coping with rejection sensitivity: The role of prevention pride. *Personality and Social Psychology Bulletin*, *29*(4), 435–448.
- Ayduk, O., Gyurak, A., & Luerksen, A. (2008a). Individual differences in the rejection-aggression link in the hot sauce paradigm: The case of Rejection Sensitivity. *Journal of Experimental Social Psychology*, *44*, 775–782.
- Ayduk, O., Zayas, V., Downey, G., Cole, A., Mischel, W., & Shoda, Y. (2008b). Rejection sensitivity and executive function: Joint predictors of borderline personality features. *Journal of Research in Personality*, *42*, 151–168.
- Ayduk, O., Gyurak, A., & Luerksen, A. (2008). *Can interpersonal rejection lead to lower self-concept clarity?* Manuscript submitted for publication.
- Bandura, A. (1986). *Social Foundations of Thought and Action*. Englewoods Cliffs, NJ: Prentice-Hall.
- Bedell, P. (1997). Resilient women: Risk and protective factors in the lives of female offenders. Unpublished Master's Thesis. Vermont College of Norwich University.
- Berenson, K., Gyurak, A., Ayduk, O., Downey, G., Garner, M. J., Mogg, K., & Bradley, B. J. (2008). *Rejection sensitivity and effects of social threat cues on attention*. Manuscript submitted for publication.
- Borkenau, P., Riemann, R., Spinath, F. M., & Angleitner, A. (2006). Genetic and environmental influences on person situation profiles. *Journal of Personality*, *74*, 1451–1479.
- Bowlby, J. (1969). *Attachment and Loss: Vol. 1. Attachment*. New York, NY: Basic Books.
- Bowlby, J. (1973). *Attachment and Loss: Vol. 2. Separation*. New York, NY: Basic Books.
- Bowlby, J. (1980). *Attachment and Loss: Vol. 3. Loss, Sadness, and Depression*. New York, NY: Basic Books.
- Campbell, J. D. (1990). Self-esteem and clarity of the self-concept. *Journal of Personality and Social Psychology*, *59*, 538–549.
- Davis, M. (1992). The role of the amygdala in fear and anxiety. *Annual Review of Neuroscience*, *15*, 353–375.
- Downey, G., & Feldman, S. (1996). Implications of rejection sensitivity for intimate relationships. *Journal Personality and Social Psychology*, *70*, 1327–1343.

- Downey, G., Khouri, H., & Feldman, S. I. (1997). *Early Interpersonal Trauma and Later Adjustment: The Medial Role of Rejection Sensitivity*. Rochester, NY: University of Rochester Press.
- Downey, G., Freitas, A. L., Michaelis, B., & Khouri, H. (1998). The self-fulfilling prophecy in close relationships: Rejection sensitivity and rejection by romantic partners. *Journal of Personality and Social Psychology*, **75**, 545–560.
- Downey, G., Feldman, S., & Ayduk, O. (2000). Rejection sensitivity and male violence in romantic relationships. *Personal Relationships*, **7**, 45–61.
- Downey, G., Mougios, V., Ayduk, O., London, B. E., & Shoda, Y. (2004). Rejection sensitivity and the defensive motivational system: Insights from the startle response to rejection cues. *Psychological Science*, **15**, 668–673.
- Dutton, D. G. (1994). Behavioral and affective correlates of Borderline Personality Organization in wife assaulters. *International Journal of Law and Psychiatry*, **17**, 265–277.
- English, T., & Chen, S. (2007). Culture and self-concept stability: Consistency across and within contexts among asian americans and european Americans. *Journal of Personality and Social Psychology*, **93**, 478–490.
- Feldman, S., & Downey, G. (1994). Rejection sensitivity as a mediator of the impact of childhood exposure to family violence on adult attachment behavior. *Development and Psychopathology*, **6**, 231–247.
- Fleeson, W. (2001). Toward a structure- and process-integrated view of personality: Traits as density distributions of states. *Journal of Personality and Social Psychology*, **80**, 1011–1027.
- Fournier, M. A., Moskowitz, D. S., & Zuroff, D. C. (2008). Integrating dispositions, signatures, and the interpersonal domain. *Journal of Personality and Social Psychology*, **94**, 531–545.
- Gyurak, A., & Ayduk, O. (2007). Defensive physiological reactions to rejection: The effect of self-esteem and attention control on startle responses. *Psychological Science*, **18**, 886–892.
- Gyurak, A., & Ayduk, O. (in press). Resting respiratory sinus arrhythmia buffers against rejection sensitivity via emotion control. *Emotion*.
- Higgins, E. T. (1996). The 'self digest': Self-knowledge serving self-regulatory functions. *Journal of Personality and Social Psychology*, **71**, 1062–1083.
- Horney, K. (1937/1994). *The Neurotic Personality of Our Time*. New York, NY: Norton.
- Kunda, Z. (1990). The case for motivated reasoning. *Psychological Bulletin*, **108**, 480–498.
- Lang, P. J., Bradley, M. M., & Cuthbert, B. N. (1990). Emotion, attention, and the startle reflex. *Psychological Review*, **97**, 377–395.
- McClelland, J. L., & Rumelhart, D. E. (1985). Distributed memory and the representation of general and specific information. *Journal of Experimental Psychology: General*, **114**, 159–188.
- Mendoza-Denton, R., & Mischel, W. (2007). *Integrating System Approaches to Culture and Personality: The Cultural Cognitive-affective Processing System*. New York, NY: Guilford Press.
- Mischel, W. (1973). Toward a cognitive social learning reconceptualization of personality. *Psychological Review*, **80**, 252–283.
- Mischel, W., & Ayduk, O. (2004). Willpower in a cognitive-affective processing system: The dynamics of delay of gratification. In R. Baumeister & K. Vohs (Eds.), *Handbook of Self-Regulation: Research, Theory, and Applications* (pp. 99–129). New York, NY: Guilford.
- Mischel, W., & Shoda, Y. (1995). A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure. *Psychological Review*, **10**, 246–268.
- Mischel, W., & Shoda, Y. (1998). Reconciling processing dynamics and personality dispositions. *Annual Review of Psychology*, **49**, 229–258.
- Mischel, W., & Shoda, Y. (2008). Toward a unified theory of personality: Integrating dispositions and processing dynamics within the cognitive-affective processing system. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of Personality* (3rd edn). New York, NY: Guilford Press.
- Mischel, W., Shoda, Y., & Rodriguez, M. L. (1989). Delay of gratification in children. *Science*, **244**, 933–938.
- Mischel, W., Shoda, Y., & Ayduk, O. (2007). *Introduction to Personality: Toward and Integrative Science of the Person* (8th edn). Hoboken, NJ: John Wiley & Sons.
- Morf, C. C. (2006). Personality reflected in a coherent idiosyncratic interplay of intra- and interpersonal self-regulatory processes. *Journal of Personality*, **74**, 1527–1556.
- Öhman, A., Flykt, A., & Esteves, F. (2001). Emotion drives attention: Detecting the snake in the grass. *Journal of Experimental Psychology*, **130**, 466–478.

- Olsson, A., Carmona, S., Downey, G., & Ochsner, K. (2008). *Perceiving threat and learning to fear: A processing account of rejection sensitivity*. Manuscript submitted for publication.
- Porges, S. W. (1995). Cardiac vagal tone: A physiological index of stress. *Neuroscience and Biobehavioral Reviews*, **19**, 225–233.
- Purdie, V., & Downey, G. (2000). Rejection sensitivity and adolescent girls' vulnerability to relationship-centered difficulties. *Child Maltreatment*, **5**, 338–349.
- Read, S. J., & Miller, L. C. (Eds.). (1998). *Connectionist Models of Social Reasoning and Social Behavior Mahwah*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Rhodewalt, F., & Morf, C. C. (2005). *Reflections in Troubled Waters: Narcissism and the Vicissitudes of an Interpersonally Contextualized Self*. New York, NY: Psychology Press.
- Romero-Canyas, R., Downey, G., Cavanaugh, T. J., & Pelayo, R. (2008). *Paying to Belong: Who tries excessively to gain acceptance following rejection? The link between ingratiation and harsh rejection among rejection sensitive people*. Manuscript submitted for publication.
- Shoda, Y., & Mischel, W. (1996). Toward a unified, intra-individual dynamic conception of personality. *Journal of Research in Personality. Special Issue: The Future of Personality*, **30**, 414–428.
- Shoda, Y., & Mischel, W. (2000). Reconciling contextualism with the core assumptions of personality psychology. *European Journal of Personality. Special Issue: Personality and Cognition*, **14**, 407–428.
- Shoda, Y., Mischel, W., & Wright, J. C. (1993). Links between personality judgments and contextualized behavior patterns: Situation-behavior profiles of personality prototypes. *Social Cognition*, **11**, 399–429.
- Shoda, Y., Mischel, W., & Wright, J. C. (1994). Intraindividual stability in the organization and patterning of behavior: Incorporating psychological situations into the idiographic analysis of personality. *Journal of Personality and Social Psychology*, **67**, 674–687.
- Shoda, Y., Lee Tiernan, S., & Mischel, W. (2002). Personality as a dynamical system: Emergence of stability and distinctiveness from intra- and interpersonal interactions. *Personality and Social Psychology Review*, **6**, 316–325.
- Thayer, J. F., & Lane, R. D. (2000). A model of neurovisceral integration in emotion regulation and dysregulation. *Journal of Affective Disorders*, **61**, 201–216.
- Vansteelandt, K., & Van Mechelen, I. (2006). Individual differences in anger and sadness: In pursuit of active situational features and psychological processes. *Journal of Personality*, **74**, 871–909.
- Zayas, V., Shoda, Y., & Ayduk, O. (2002). Personality in context: An interpersonal systems perspective. *Journal of Personality*, **70**, 851–900.