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Original Article

Social Defense: An Evolutionary-Developmental Model of Children's Strategies for Coping with Threat in the Peer Group

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Abstract: Navigating the ubiquitous conflict, competition, and complex group dynamics of the peer group is a pivotal developmental task of childhood. Difficulty negotiating these challenges represents a substantial source of risk for psychopathology. Evolutionary developmental psychology offers a unique perspective with the potential to reorganize the way we think about the role of peer relationships in shaping how children cope with the everyday challenges of establishing a social niche. To address this gap, we utilize the ethological reformulation of the emotional security theory as a guide to developing an evolutionary framework for advancing an understanding of the defense strategies children use to manage antagonistic peer relationships and protect themselves from interpersonal threat (Davies and Sturge-Apple, 2007). In this way, we hope to illustrate the value of an evolutionary developmental lens in generating unique theoretical insight and novel research directions into the role of peer relationships in the development of psychopathology.

Keywords: evolution, peer relationships, security, development

Introduction

Childhood is ripe with social threat as well as opportunity. Establishing a position in the social hierarchy of peers and forming supportive social alliances represent key developmental tasks during this period. In meeting these challenges, children are commonly confronted with conflict, competition, and expressions of anger, hostility, rejection, and aggression (Rubin, Bukowski, and Laursen, 2009). Exposure to interpersonal conflict in some form is virtually universal, but a substantial proportion of youth also experience more pervasive and intense threats, including bullying, physical assault, or wide-spread peer rejection (Bierman, 2004; Nansel et al., 2001). These peer relationship problems have been implicated in the development of a wide range of psychopathology symptoms, including internalizing and externalizing problems, poor academic achievement,

substance use, and even suicide (Parker, Rubin, Erath, Wojslawowicz, and Buskirk, 2006). Public recognition of the mental health risk posed by peer relationship problems is evident in the ubiquity of programs aimed at reducing bullying, victimization, and violence in today's schools (Ttofi and Farrington, 2011).

However, a disproportionate amount of theoretical and empirical effort has been directed towards identifying characteristics of the broader social context (e.g., rejection, victimization) as precursors to adjustment problems, resulting in a significant gap in our understanding of the ways in which children contend with these challenges. The strategies children use to protect themselves when faced with peer threat may elucidate why and how these agonic peer climates contribute to psychopathology, helping to increase the specificity with which we can identify the children at greatest risk and develop more efficient and effective intervention strategies.

In the following paper, we attempt to address this gap by outlining our working translation of the evolutionary developmental reformulation of emotional security theory (EST-R; Davies and Sturge-Apple, 2007) to the study of peer relationships. Our model is designed to build on the tremendous progress made in studying peer relationships and psychopathology. Developmental researchers have made great strides in identifying the constitutional and interpersonal origins of problematic social behavior (e.g., aggression, withdrawal) and in advancing an understanding of the ways children contribute to their own social experiences (Beirman, 2004; Little, Henrich, Jones, and Hawley, 2003; Parker et al., 2006; Rubin, Coplan, and Bowker, 2009; Rudolph, Abaied, Flynn, Sugimura, and Agoston, 2011). Despite these advances, conceptual and empirical progress has frequently been restricted to relatively narrow subsets of behavior or phenomena. Without a common language and guiding framework, focusing on limited substantive areas or subsamples of the population runs the risk of generating isolated, disparate findings that offer little basis for comparison. Accordingly, a significant gap in the literature is the paucity of mid-level theories that serve as potentially useful frameworks for organizing research on children's coping with peer threat. Although our conceptual application to peer relationships is still in its early stages, our goal is to use EST-R as a base for developing a mid-level theory in evolutionary developmental psychology that generates precise hypotheses and research directions in the study of peer relationships and psychopathology.

We draw on EST-R, in part, because it offers a complementary alternative to prevailing methods that emphasize form (morphology) over function in determining the developmental meaning and consequences of behavior. These approaches rely on the implicit, top-down assignment of behavioral forms as either "healthy" or "pathological" based on intuitive experience and common wisdom (Stump, Ratliff, Wu, and Hawley, 2009). Efforts to delineate the origins and correlates of these "healthy" and "pathological" forms of behavior then become myopically focused on pre-existing lexicons of inherently positive and negative contributing factors. Within the peer literature, this is exemplified by early designations of aggressive behavior as "socially incompetent," followed by a history of searching for its "adverse" precursors and "pathological" sequelae.

In contrast, a theoretical approach balancing both form and function accepts that the same behavior may serve different functions within different contexts (Stump et al., 2009). For example, contemporary developmental conceptualizations now distinguish between aggressive behavior that serves to increase access to and control over resources in the peer group (i.e., proactive) (Little et al., 2003). Integrating function stimulated new questions

and resulted in the identification of a significant subgroup of children and teens who are both highly aggressive and evidencing above-average social and psychological adjustment (Hawley, 2011; Hawley, Little, and Rodkin, 2007). By drawing on the principles of evolutionary developmental psychology (EDP; Bjorklund and Pellegrini, 2002), EST-R provides a unique opportunity to move beyond standard models linking "incompetent" interpersonal experiences and "pathological" behavior towards a broader understanding of the processes that serve to sustain these associations within the population despite the substantial consequences for the mental health of children.

The evolutionary-developmental foundations of EST-R

Consistent with the principles of evolutionary developmental psychology, EST-R is predicated on the assumption that the brains and bodies of contemporary humans were shaped by natural selection. Accordingly, accurately predicting the developmental precursors and sequelae associated with a particular pattern of behavior requires taking into account its phylogenetic origin and adaptive function, as well as its proximate cause and ontogenetic history (Hawley, 2011). Elucidating developmental processes is also prioritized in evolutionary developmental psychology based on the assumption that stage-specific adaptations are commonly designed to provide a fitness advantage within the unique social ecology of a particular development period (Bjorklund and Pellegrini, 2011).

In advancing the objectives of this overarching perspective, our model relies heavily on the conceptualization of behavioral systems for achieving an understanding of the evolved psychobiological structures and implicit algorithms that direct the behavioral strategies humans use in meeting developmental challenges (e.g., Mikulincer and Shaver, 2006). In accordance with this approach, much of human behavior is posited to be organized by a limited set of primitive, species-typical, and goal-directed behavioral systems (Bowlby, 1969; Novak and Peláez, 2004). Each system consists of an integrated set of affective, psychological, and physiological processes. Together, these form unique psychobiological modules, each with a distinct ultimate function, proximate organizing goal, and repertoire of behavioral strategies (see Table 1; Davies and Sturge-Apple, 2007). *Ultimate function* refers to the broad adaptive advantage the system conferred in promoting survival and reproduction throughout our history as a species. The *proximate function* (*or proximate organizing goal*) describes the objective of the module in regulating the organism-environment relationship to support the ultimate function. *Behavioral strategies* refer to the systems' response set, or specific action tendencies that can be flexibly used to achieve the proximate function.

According to behavioral systems conceptualizations, the relative influence of these systems as organizers of organismic functioning varies over time based on the salience of specific, proximate functions. Thus, organisms are constantly managing the allocation of limited time, energy, and biological resources towards various fitness goals (Del Giudice and Belsky, 2011). Decisions to allocate resources towards a particular behavioral system and its proximate goal are driven by automatic, evolved algorithms for calculating the net fitness gain of prioritizing the function of one system relative to the others. Consistent with evolutionary emotion theories, emotions are proposed to play a central, adaptive role in this process by highlighting fitness-relevant stimuli in the environment and motivating psychological and behavioral responses (Nesse, 1990; Panskepp, 1998). Current ecological conditions, ontogenetic history, developmental stage, and inherited dispositions may all

influence the cost/benefit ratio of adopting a particular strategy.

In examining the behavioral systems in Table 1, a primary premise of our conceptualization is that children's coping with agonic peer relationships is largely organized around the social defense system (SDS). Thus, in the next section, we describe the basic operation of the SDS within EST-R before proceeding into the novel implications of the theory for understanding individual differences in how children cope with peer threat.

Table 1. Descriptions of the adaptive functions, observed goals, and common strategies of some of the salient behavioral systems in childhood (adapted from Davies and Sturge-Apple, 2007)

Control System	Proximate Function or Observed Goal	Common Behavioral Strategies	Broad Ultimate Function
Social Defense	Defuse or avoid threats and aggression by conspecifics	Fear; distress, vigilance; freezing; flight; fight; cut off behavior (e.g., covering eyes); camouflaging behaviors (e.g., inhibiting verbal and overt emotional expressions; concealing face); heightened perceptual-cognitive sensitivity to environmental signs of danger; long-term demobilization (i.e., dysphoria, vegetative state, fatigue, inferiority, hopelessness, and helplessness), social de-escalation strategies (e.g., gaze avoidance, coy behavior)	Protection from harm
Exploratory	Familiarization with physical world	Approach novel objects and settings; systematic observation and manipulation of object world	Access to basic survival materials
Affiliation	Increase access to and control of material resources; Initiate and sustain cooperative interaction	Social interest and approach; joint attention; smiling, warmth expressions; initiation and maintenance of interpersonal ties (e.g., sharing, gifting, play)	Access to basic survival materials (including social skills) and mates
Caregiving	Proximity to the dependent and relief of dependent distress	Monitoring of dependent, sensitivity to dependent distress signals, and responsiveness to dependent needs	Protection of dependents
Dominance	Increase access to and control of material resources, Intimidate and eliminate adversaries	Anger; aggression; attention seeking; direct gaze	Acquisition of basic survival materials and mates

The Social Defense System

The ethological reformulation of emotional security theory (EST-R) was initially developed to explain individual differences in children's responses to interpersonal threat in the family. In emotion-laden and stressful interpersonal contexts, preserving a sense of safety and security is posited to be a primary psychological goal for all children (Davies and Sturge-Apple, 2007). The central tenet of EST-R is that this goal is served, in large part, by the social defense system (SDS). Consistent with early ethological descriptions of the "fear/wariness system" (e.g., Bowlby, 1969; Harlow and Harlow, 1965), the SDS is posited to have evolved due to the high cost of intragroup conflict and competition. Phenotypic responses to interpersonal hostility were adaptive if they served to reduce the likelihood of both physical harm and damage to one's social status. Over time, natural selection sculpted the SDS into a system capable of organizing complex, integrated patterns of emotion, information processing, and behavior to efficiently defuse and avoid conspecific threat (Gilbert, 1993).

Upon interpreting environmental cues as signaling the likelihood of impending interpersonal threat, the SDS elicits fear, vigilance, and arousal. Fearful emotion serves to motivate and manage the selection of a relevant behavioral response from among a large repertoire of defense tactics designed to defuse interpersonal threat. These include fight/flight, social de-escalation, appeasing, camouflaging, and defeat (Davies, Cicchetti, and Martin, 2012; Gilbert, 1993, 2000; Öhman, 2005). Across development, continuity in the functioning of the SDS is proposed to be reflected in the propensity of individuals to: (a) develop increasingly efficient and elaborated psychological and behavioral strategies for coping with threat based on their experiential history, and (b) draw on existing strategies as guides for interpreting and responding to subsequent interpersonal events (Davies and Sturge-Apple, 2007). Thus, EST-R predicts that the SDS will evidence modest to moderate functional stability over time.

What constitutes threat?

Direct physical or psychological attacks, loss of social standing, defection of allies, and group exclusion represent particularly potent threats to individual fitness (Sloman and Gilbert, 2000). According to EST-R, the SDS is exclusively attuned to environmental stimuli signaling the potential for physical or psychological harm, restrictions on the individual's access to resources (i.e., toys, materials, food, privileged play space; affiliative interactions), or attempts to undermine their social standing (Davies, Martin, and Cicchetti, 2012). These include expressions of anger and hostility (e.g., facial expressions, loud angry noises/yelling, fast approach or quick movements, looming, dominant posturing, verbal aggression) and social exclusion (e.g., turning away, ignoring, supplanting, relational aggression) (Davies and Sturge-Apple, 2007; Öhman and Mineka, 2001). In applying EST-R to the peer group, we expect the SDS to be salient in contexts of (a) overt expressions of peer hostility, physical, verbal, or relational aggression, anger, and frustration, (b) non-verbal supplanting (i.e., taking over a privileged play space, blocking access to privileged space or toy), and (c) rejection (i.e., ignoring a play bid, refusing to allow the target child to join the group). Hostility and rejection may be expressed through facial expressions, dominant posture or gestures, acts (e.g., hitting, pushing, forcefully taking object), facial expressions of disgust or disdain (e.g., eye rolling; exasperated sighs), or physically turning

away.

The importance of threat and its psychological meaning for the child will vary as a function of the threat signal's proximity, valence, intensity, and whether cues signal direct or peripheral threat (Nesse, 2005). Therefore, the SDS should, on average, have the greatest influence on a child's behavior when the potential for threat is imminent and unambiguous, such as when an angry peer is standing over the child with an arm raised as if to hit him/her. In contrast, witnessing a heated exchange between two peers on the other side of the room may result in a modest social defense response (perhaps momentary arousal or unease), but is unlikely to outweigh the strength of the affiliative system to the point of distracting the child from the pleasure and communion of an ongoing game with friends. The degree of reactivity a child expresses relative to the intensity of threat cues in the environment represents an important clue as to the salience and sensitivity of the SDS in organizing their behavior.

Individual differences in social defense

EST-R asserts that preserving a sense of safety and security is a fundamental human motivation across contexts (Davies and Sturge-Apple, 2007). Throughout our history as a species, a substantial proportion of the human population has and continues to develop within dangerous, hostile, and unpredictable social environments (Crittenden, 1999). When faced with frequent interpersonal hostility and failure in intra-group competition for resources, the long-term adaptive benefits of retaining privileged status and alliances within the social group may be regularly outweighed by concerns for immediate physical or psychological danger. In these contexts, adaptive advantage is gained by individuals who are able to minimize the costs of conflict and defeat by adopting a "better-safe-than-sorry" strategy of investing substantial psychobiological resources in recognizing, monitoring, and managing potential threats (Davies, Sturge-Apple, and Martin, 2013; Woody and Szechtman, 2011). These hypersensitive, or "insecure," forms of social defense functioning are proposed to share in common several core features, including heightened vigilance and arousal in response to perceptions of threat, a tendency to attribute hostile intent, and biased expectations of danger from the social world (Davies and Sturge-Apple, 2007).

Consistent with evolutionary developmental models (e.g., Bjorklund and Pelligrini, 2011), we propose that recurring ecological niches characterized by specific profiles of social threat and opportunity put selective pressure on the evolution of a limited number of prototypical social defense strategies, or specialized social defense phenotypes, that could be flexibly adopted depending on salient characteristics of the social environment during ontogenetic development. Drawing on EST-R, we specifically propose that these patterns can be parsimoniously captured by four prototypic strategies: Secure, Mobilizing-insecure, Dominant-insecure, and Demobilizing-insecure. Each strategy is distinguished by its unique proximate function in defusing and avoiding conspecific threat within a particular social ecological niche. In the following section, we apply this model to children's responses to threat in the peer group, outlining, in detail, each strategy's (a) distinct affective and behavioral profile, (b) the social-ecological niche to which it is adaptive, (c) temperamental precursors that serve as dispositional biases towards its particular niche, and (d) its long-term developmental costs and advantages (see Table 2) (Davies and Sturge-Apple, 2007; Davies and Martin, in press).

Table 2. An outline of the proposed Social Defense System strategies for coping with threat within the peer group and the proposed emotional, psychological, and behavioral responses that are proposed to generally cohere for each strategy

	SECURE	MOBILIZING	DOMINANT	DEMOBILIZING
Functional Strategy Within Proximate Social Context	• Encapsulate SDS salience to instances of clear, direct threat • Maintain a balanced attention to both threats and opportunities, under expectations of safety • Efficient and flexible operation of the SDS	•Maintain heightened attention to and wariness of threat, but still sustaining an orientation to the group • Escape and avoid threats through active fight/flight	• Maintain heightened attention to and wariness of threat • Defeat threats through aggression and intimidation • Reduce overt signs of vulnerability to support an elaborated fight response	• Maintain heightened attention to and wariness of threat • Defuse threats through submission and appeasement • "Lay low" and avoid the attention to hostile group members
Common Response Patterns				
Emotional Patterns	• Mild to moderate negative emotion (e.g., anger, fear, sadness), but generally well-regulated following reduced threat signals	• Overt, dysregulated distress and arousal, particularly intense fear and anxiety • Difficulty calming down	• Overt, dysregulated distress and arousal, particularly intense anger • Suppression of expression of vulnerable emotions (i.e., fear, sadness, empathy); blunted, "analgesic" affect	• High subjective distress and arousal, particularly anxiety and sadness • Suppressed anger • Attempts to mask or inhibit overt emotional expressions
Psychological Processes	• Open, Flexible attention to social environment • Generally positive representations of peer relationships • Orientation towards social group, including desire for interaction and importance of social guidelines	• Hypervigilance; sustained arousal and alert to threat •Expectations of continued threat; moderately negative peer representations • High concern with and desire for interpersonal relationships • Self-conscious	• Hypervigilance; alert to threat • Low tolerance for frustration • Downplay significance of interpersonal relationships through: (a) hostile representations; (b) reactivity to authority; (c) little sensitivity to or regard for others' well-being • Inflated self-focus	• Hypervigilance; alert to threat • Negative, hostile representations • Helpless, hopeless ideations that serve to inhibit social approach • Negative self-appraisals • Tendency to ruminate
Typical Behavioral Repertoire	•May use any strategy, but typically modulates behavior within social guidelines for appropriate response (e.g., yelling as opposed to physical aggression) • Assertive control or appeal to group guidelines • Attempts at problem-solving or compromise • Social de-escalation, appeasing behavior (e.g., coy, ingratiating)	•Flight behaviors (e.g., escape, running away) •Avoidance (e.g., hiding, distancing) • Disorganized movement around peer group (i.e., hovering); wary approach-avoidance pattern • Reflexively seeking adult comfort (e.g., clinging to the teacher) • Some fight behaviors (e.g., reactive, uncontrolled aggression)	•Dominant posture (e.g., make self bigger, looming, direct gaze, facial tension) •Threatening gestures (e.g., pointing, fist clench) •Uncontrolled, reactive forms of aggression (e.g., yelling, hitting, slapping, kicking, belittling, throwing things)	•Freezing •Cut-Off (e.g., covering eyes) •Submission (e.g., postural slumping, downward gaze, make self small) •Demobilizing (e.g., dysphoria, anhedonia, lethargy) •Camouflaging (e.g., masking overt expressions of emotion, concealing face, become quiet) •Social de-escalation (e.g., coy, ingratiating, appeasing)

In highlighting the utility of the conceptualization, we focus, for illustrative purposes, on the operation of the SDS during the juvenile period of development. Although managing interpersonal threat remains an important goal throughout the life span, juvenility is regarded as a sensitive period due to its significance in establishing harmonious peer relationships and social standing in extrafamilial hierarchies (Del Giudice, Angeleri, and Manera, 2009; Rubin et al., 2009).

The Structure and Functional Utility of the Social Defense Profiles

Secure

In accordance with EST-R, the external goal of the SDS in defusing threat is adaptive for all individuals faced with conflict and hostility. Thus, rather than reflecting the absence of SDS responding altogether, a *secure* profile is characterized by a fully operational SDS that, on average, assumes low saliency relative to other behavioral systems. This is manifested in well-regulated and fluid defensive responses to direct social threats. Fluidity is reflected in a balanced appraisal of the social environment and the flexible use of defense strategies to match proximate contextual cues (Davies and Sturge-Apple, 2007). Security has been described as an overarching "safety" orientation, reflecting a relative balance between security (inhibitory) and other (approach) goals in the expectation that social threats are limited and manageable (Gilbert, 1993). The secure strategy functions to maintain an open orientation towards opportunities in the environment by restricting social defense saliency to instances of clear and direct threat. When threats do inevitably arise, secure children are still expected to experience mild-to-moderate negative affect and arousal.

The identification of a secure profile does not rely on or preclude the use of any specific SDS behavior. Accordingly, secure children may exhibit some aggression, withdrawal, immaturity, or other behaviors traditionally considered "socially incompetent." However, these should be integrated within a broader profile characterized by (a) a relatively high threshold for threat detection, (b) circumscribed operation of the SDS as an organizer of behavior in contexts of imminent and unambiguous threats, (c) a relatively quick return to normal activities following resolution of the threat, and (d) an over-arching prioritization of behavioral systems organizing approach and resource-control (e.g., exploratory, affiliation, dominance) (see Table 1).

The secure profile represents an optimally adaptive social defense strategy within resource-rich, predictable, and benign ecological niches (Davies and Martin, 2013). Thus, security is proposed to emerge within contexts that provide consistent psychological and emotional support, predictable rules for accessing resources, and relatively harmonious relationships. Translated to peer relationships, security should co-occur with general acceptance by the larger peer network and opportunities to access resources within peer interactions (e.g., friendships, preferred play partners). Any experiences as targets or victims of hostility are further postulated to be limited in frequency and restricted to specific contexts or individuals (e.g., a bully or "enemy"). Likewise, high effortful control, low impulsivity, and a high threshold of sensitivity to discomfort are temperamental characteristics that may bias the individual towards adopting a secure strategy. For example, effortful control and low impulsivity reflect the early-emerging ability to regulate behaviors in an organized, planful way, limiting the primacy of reflexive, automatic

responses. This temperamental profile helps to guide the expression of SDS responses towards forms that generally stay within the guidelines of social norms for "appropriate behavior." In addition, temperamental tendencies to withstand and weather discomfort may translate into a higher tolerance for uncomfortable peer situations.

The behavioral manifestations of SDS security (e.g., well-regulated affect, open attention to social cues, low expectancies of future threat) tend to be attractive to peers (Bierman, 2004). Thus, we predict that security will be associated with more prosocial behavior and play bids from peers relative to children adopting insecure SDS strategies. Moreover, under expectations that immediate survival and access to resources are predictably ensured, adopting a secure profile frees up limited psychobiological resources to be allocated towards other adaptive goals. In this way, security influences children's broader psychological adjustment indirectly, by allowing for the elaboration of the behavioral systems that organize problem-solving (e.g., exploration), social skills, cooperation (e.g., affiliation), empathy, and prosocial orientations towards others in need (e.g., caregiving) (Davies et al., 2013; Davies and Martin, in press). These skills, then, are proposed to mediate associations between SDS security and individuals' adjustment (e.g., social status, popularity, acceptance) (Bierman, 2004; Rubin et al., 2009). Over time, these factors are likely to support relatively low levels of psychopathology and adjustment difficulties. However, because any selective allocation of resources towards a particular goal produces a fitness trade-off (Bjorklund and Pelligrini, 2011; Hawley, 2011), greater security is proposed to confer some developmental costs. By minimizing distribution of resources towards elaborating the SDS, secure children are proposed to be relatively poor at detecting emerging threats and malevolent intent in others. The rosy view of interpersonal relationships developed within benign, harmonious environments may manifest in naivety and gullibility when secure children are faced with more stressful contexts.

Moreover, adopting a secure SDS strategy does not preclude children from adopting what would be regarded as an "undesirable" behavioral profile from a public health perspective. Each behavioral system is likely to have evolved alternative phenotypic variants, all of which come with a unique balance of developmental costs and benefits. For example, we propose that a significant subgroup of secure children will differentially allocate reserve psychobiological resources towards prioritizing dominance goals. The dominance system functions to increase status and access to resources by eliminating and intimidating adversaries (see Table 1). Therefore, individuals with highly salient and developed dominance systems are proposed to evidence certain core characteristics to support this resource-control function (i.e., heightened sensitivity to status threats and reward, insensitivity to punishment, suppressed vulnerable affect, high rates of aggression, boldness), but lack the vigilance to threat, reactivity, and hostile attribution biases characteristic of a hypersensitive SDS (Davies and Martin, in press; Dixon, 1998). This distinction between dominant-secure (i.e., high-dominance system salience, low SDS salience) and dominant-insecure (i.e., high-dominance, high-SDS) is supported, in part, by the distinction in the developmental literature between proactive and reactive aggressors (e.g., Little et al., 2003; Vitaro, Brendgen, and Tremblay, 2002). Thus, security should not be misconstrued as a catch-all or blanket category for "competence" or "benevolence," but rather a more precisely defined relative paucity of alarm, apprehension, and fear.

Mobilizing-insecure

In contrast to the SDS's relatively low salience in the secure profile, a *mobilizing-insecure* strategy is characterized by hyperactivation of the SDS, as reflected in comprehensive mobilization of psychobiological resources towards monitoring and defending against threat. The function of mobilization is to defuse or avoid threat in a manner that sustains heightened arousal and attention to *both* threat and opportunity within the environment. This serves to maximize the individual's access to resources (e.g., cooperative interaction opportunities, play materials) in the social network over time (Gilbert, 1993; Jensen et al., 1997).

From an evolutionary standpoint, the mobilizing pattern utilizes a strategy of "dutiful subordination" that permits avoidance of direct harm and social exclusion while also maintaining proximity to dominant group members (Trower, Gilbert, and Sherling, 1990). Although mobilizing patterns may be manifested in a variety of tactics, including flight (e.g., running away), avoidance (e.g., warily watching dominant group members, hovering around play groups), and aggressive-fight behaviors, common trademark signs of mobilization consist of exaggerated displays of vulnerability, blatant and unvarnished forms of distress and fear, and immaturity. Thus, their active fight/flight behaviors may be frequently interspersed with affected expressions (e.g., loud sighs, dramatic whining, emphasizing their plight) and exaggerated coy or ingratiating behaviors (e.g., reassurance-seeking; overly bright smiles) (Davies et al., 2013; Gilbert, 2001). Together, this pattern serves to de-escalate heightened interpersonal tensions by calming or appeasing dominant-status individuals while also fostering continued attention and focus from social group members (Davies and Martin, in press).

The prolonged, widespread pattern of heightened arousal and reactivity reflected in a mobilizing-insecure profile is proposed to emerge from a history of contending with recurrent hostile threats interspersed with experiences that serve to maintain children's emotional and psychological involvement in the group (Davies and Sturge-Apple, 2007). Translated to the peer setting, interpersonal threat is likely to be evidenced by repeated rejection, exclusion, hostility, and/or victimization from a number of peers. Although these agonic peer experiences may naturally engender withdrawal from the social network, specific interpersonal and intrapersonal conditions counteract this tendency and serve to collectively immerse children in threatening social networks.

At the interpersonal level, mobilizers' persistent investment in the social group and attraction to dominant-status individuals are posited to develop when children (a) are able to garner some degree of support and resources within limited subsystems of the peer social hierarchy (e.g., a friend) or (b) experience blurred relationship boundaries characterized by volatile bouts of hostility (e.g., relational aggression, psychological control) that are irregularly or conditionally punctuated with some peer support (e.g., maintaining a "toady" relationship with a higher-status peer). At the intrapersonal level, mobilizing is supported by a mix of dispositional characteristics. On the one hand, high perceptual sensitivity, low tolerance for discomfort, and poor effortful control are likely to increase aversive responding to conflict with peers. On the other hand, traditionally "positive" characteristics, such as a high sensitivity to rewards and pleasure, serve to incentivize mobilizers' immersion in the social group despite the hostile climate (Davies and Martin, 2013).

In contrast to a secure profile, the hypersensitivity and prolonged activation of the SDS system characterizing the mobilizing-insecure strategy reflects a substantial

investment in defense that is likely to deplete resources that could potentially be devoted to other behavioral systems. Consequently, mobilizers are predicted to exhibit some degree of impairment in social skills, problem-solving, and prosocial orientations relative to the secure profile. Furthermore, although acute awareness of signs of threat, preoccupation with the analysis of one's own behavior in social contexts, and the reflexive adoption of vulnerable, submissive, and appeasing behaviors are adaptive in reducing harm within contexts of interpersonal threat, they also increase the risk for long-term difficulties characterized by anxiety problems, attention difficulties, and borderline personality symptoms (e.g., unstable sense of self, interpersonal dependency, emotional lability) (Gilbert, 2001; Jensen et al., 1997). However, in spite of its developmental disadvantages, a mobilizing-insecure profile is also proposed to confer a unique portfolio of relative strengths. We specifically hypothesize that their relatively strong motivation to participate in interpersonal relationships will engender a broader personality profile characterized by moderate levels of communion, social interest, proclivity towards empathic responding, and openness to intimacy.

Dominant-insecure

Dominant-insecure tendencies consist of efforts to directly defeat threat through aggressive and intimidating "fight" patterns (Dixon, 1998; Hilburn-Cobb, 2004). Although the dominant profile of social defense utilizes psychobiological pathways shared with the dominance system (see Table 1), dominant-insecure behaviors are still primarily organized by the SDS, and thus characterized by heightened distress, wariness, and arousal in response to perceived threats. Nevertheless, these are substantially outweighed by displays of overt, dysregulated anger and aggression, hostility, and loss of control as the child attempts to minimize the appearance of vulnerability and susceptibility to defeat through reactively attacking and intimidating peers. Evolutionary models of defensive aggression suggest that this insecure fight pattern is supported by an underlying affective and cognitive strategy characterized by downplaying the meaning of interpersonal relationships (e.g., hostile representations, high self-regard) and minimizing the subjective experience of "vulnerable" emotions (e.g., fear, sadness, empathy) to allow the individual to overcome fear-based flight instincts and to focus anger and arousal towards enacting aggression (e.g., Davies and Sturge-Apple, 2007; Hilburn-Cobb, 2004).

The dominant-insecure profile is posited to develop within social niches characterized by experiences with interpersonal antagonism, high social detachment, and inconsistent or indistinct power hierarchies. Histories of exposure to interpersonal threat are likely to breed vigilance and anxiety in subsequent social contexts, whereas disengagement and an ill-defined social structure serve to limit internal and external guidelines for accessing group resources and reduce the deleterious consequences for violating rules of conduct (Hawley et al., 2007). These ecological features are proposed to engender trademark features of dominance, including (a) "analgesic" responses to stress characterized by attempts to reduce the experience and appearance of anxiety in response to threat, (b) efforts to downplay the significance of social relationships, and (c) direct, aggressive behavior. Therefore, chaotic environments exhibiting a pattern of blurred social structures and roles in the peer group, peer hostility and aggression, unclear rules for accessing resources, interpersonal indifference, and inconsistent discipline for behavioral infractions are proposed to be particularly potent precursors to dominant profiles.

Furthermore, a temperamental configuration of high sensitivity to pleasure, low sensitivity to punishment, and impulsivity may increase the likelihood of success in blunting vulnerable affect (i.e., fear, sadness, empathy) and enacting bold, domineering strategies (Korte, Koolhaas, Wingfield, and McEwen, 2005). Indirect evidence from the primate literature lends some support for these associations. For example, instability in the social hierarchy of non-human primates predicts increased levels of intra-group aggressive behavior, with subordinate individuals more likely to aggress against dominant-status individuals (Honess and Marin, 2006).

The tendency of dominant-insecure children to blunt the experience of vulnerable emotions and devalue close relationships is particularly likely to take a toll on the operation of the affiliative and caregiving systems. Phenotypical products of disruption in these two behavioral systems are likely to include hostile views of the social world, interpersonal disenfranchisement, lack of sympathy, and rigid, reflexive use of aggressive behaviors. As the dominant-insecure strategy coalesces into a hallmark personality profile of hostility and callousness, we hypothesize that these children will be at greatest risk for developing conduct problems, delinquency, and antisocial symptomatology (Davies and Martin, 2013; Davies et al., 2013).

Failure to elaborate and master affiliative and caregiving strategies may also reduce dominant-insecure children's opportunities to affiliate with peers. Thus, over longer periods, dominant-insecure children may also evidence a high risk for atypical depression characterized by high levels of fatigue, sleepiness, and lethargy (Korte et al., 2005). This hypothesis is supported, in part, by evidence that reactive forms of aggression often precede both peer rejection and depression (Bierman, 2004; Vitaro et al., 2002). Nevertheless, the developmental landscape is not uniformly bleak for children with dominant-insecure profiles. Dominant strategies can also serve to foster self-regard, confidence, agency, and a bold readiness to experience novelty and challenge (Korte et al., 2005; Sih, Bell, and Johnson, 2004).

Demobilizing-insecure

The final SDS pattern is conceptualized as a "last resort" or "involuntary defeat" strategy that emerges from the chronic hyperactivation of the SDS when alternative strategies to reduce the experience of interpersonal threat have repeatedly failed (Sloman and Gilbert, 2000). This *demobilizing-insecure* profile is characterized by patterns of submissive (e.g., downward gaze, postural slumping, lethargy, anhedonia), appeasing (e.g., coy, ingratiating behavior), and camouflaging (e.g., freezing, subtle withdrawal, silence) behaviors (Bracha, 2004; Davies and Sturge-Apple, 2007).

Although conventional mental health models commonly view the distress, impairment, and dampened motivation accompanying demobilization as broadly maladaptive, this "lay-low' strategy is functional within highly oppressive social networks by reducing the child's salience as a target of interpersonal aggression and signaling to hostile conspecifics that they pose no threat to the existing hierarchy and distribution of resources (Gilbert, 2001). Particularly when conditions signal a scarcity of resources and no opportunities to escape, the benefits of gaining resources, forming alliances, or achieving greater standing are far outweighed by the immediate risk of evoking the ire and hostility of aggressive dominants (Bracha, 2004). In support of its functional utility, research has observed a similar pattern of demobilization exhibited by nonhuman primates who faced

intense conspecific hostility and subordinate status (Honess and Marin, 2006).

The lay-low function of demobilization is proposed to be commonly expressed in one of two primary forms: one characterized primarily by camouflaging behaviors and the other by dysphoria and defeat (Davies and Sturge-Apple, 2007). Both forms share an underlying vigilance and sensitivity to threat, heightened anxiety and arousal, and inhibition of fight and flight inclinations (Davies and Martin, in press). In its camouflaging form, the proximate function of concealment from hostile or high-status peers is achieved through behaviors that inhibit external expressions of distress. Although this strategy tends to be successful in hiding distress from adults and peers in natural settings, trained observers recognize camouflaging by their postural tension, freezing, subtle withdrawal (e.g., getting quiet, avoiding eye contact), reflexive and wooden affirmations, reduced play and exploration, and retreat to an internal locus of attention. The alternative form of demobilization is expressed in a more widespread dampening of social and mastery motivations, resulting in a behavioral pattern characterized by dysphoria, fatigue, anhedonia, downtrodden behaviors, sulking, and unoccupied behavior (e.g., staring blankly; wandering with no specific purpose) (Davies and Martin, in press; Gilbert, 1993; Sloman and Gilbert, 2000). Following from its function in avoiding notice, children adopting either form of demobilization are expected to evidence high levels of social disengagement, withdrawal, and submissive forms of appeasing behavior (i.e., standing with head down).

As a last resort strategy, the demobilizing profile is proposed to emerge from a protracted history of contending with recurrent hostile threats without ample opportunity to psychologically disengage or escape (Sloman, Price, Gilbert, and Gardner, 2004). Translated to the peer group, demobilization is likely associated with widespread exclusion, victimization, and rejection from peers coupled with a "lack of opportunities for solace" manifested in extremely limited experiences with prosocial and cooperative interactions, little or no social support, and minimal friendships that are highly unstable and poor in quality (e.g., hostile, controlling). Moreover, a constitutional profile of high sensitivity to punishment, wariness of novelty, and low sensitivity to pleasure is likely to support the trademark forms of demobilization, including disengagement, inhibition of exploration, and dysphoria. Likewise, the skillful ability to down-regulate overt expressions of distress is proposed to be rooted in relatively intact or even exceptional capacities for effortful control (Davies et al., 2013; Sih et al., 2004).

Children adopting a demobilizing-insecure strategy are predicted to bear the most significant long-term mental and physical health burdens of any of SDS strategy. Given its striking resemblance to diagnostic criteria for depression and anxiety disorders, demobilizing is a likely risk factor for internalizing symptoms. Significant reductions in motivation in conjunction with rumination, anxiety, and dysphoria are also likely to substantially tax the functioning of affiliation, exploratory, and caregiving systems. As a result, we propose that demobilizing tendencies should be associated with serious impairments in social skills, prosocial behavior, agency, and problem-solving abilities (Davies and Sturge-Apple, 2007; Sloman and Gilbert, 2000). By the same token, it is important to note that demobilizing patterns may confer some developmental advantages beyond its proximate function in reducing threat. Minimizing escalation of conflict and aggression in the peer group may serve as a protective factor for the development of disruptive, risky, and oppositional behavior problems. Moreover, in its milder forms, the

underlying dispositional components of a demobilizing profile may have persisted across evolution by promoting a sensitive, receptive, and reflective orientation toward the environment, greater inhibitory control, and adaptability to change (Sih et al., 2004; Sloman et al., 2004; Wolf, van Doorn, Leimar, and Weissing, 2007). Thus, even demobilizing is proposed to be associated with a complex combination of developmental costs and benefits.

Future Directions

As a first foray into translating EST-R to peer relationships, several major areas remain in need of further elaboration. In the next section, we highlight what we consider to be critical next steps in fine-tuning a theory of social defense in contests of peer adversity. We follow this with an overview of the methodological and conceptual tools required to test the predictions we've outlined in this manuscript.

Substantive research directions

Sex differences in SDS functioning. Although sex differences in SDS functioning have yet to receive systematic attention, there are strong reasons to expect sex to influence the ways in which children defend against peer threat. Research has identified consistent sex differences in children's peer relationships and social behavior (Rose and Rudolph, 2006), many of which appear to emerge and become stable during the juvenile period (Del Giudice et al., 2009). Males and females may be uniquely sensitive to particular contextual cues for threat. For example, male juveniles have been shown to demonstrate more concern for social dominance and group-level competition, whereas females appear to be more sensitive to perturbations in group cohesion, stability, and the formation of reciprocal alliances (Tamashiro, Nguyen, and Sakai, 2005).

Sex may also influence the SDS at a neuroendocrine level, contributing to sex-typed differences in the likelihood of adopting a particular social defense strategy (Crick and Zahn-Waxler, 2003). For example, when faced with pervasive interpersonal threat, males' higher testosterone levels may support reactive, aggressive tendencies that contribute to a dominant-insecure strategy. Conversely, females with higher levels of the hormone oxytocin may be more likely to develop behavioral strategies that allow them to maintain social ties in the face of threat, potentially increasing their likelihood of exhibiting a mobilizing-insecure profile.

External social pressures may also contribute to the predicted population differences in the proportion of males and females adopting each SDS strategy. According to the "gender intensification hypothesis," biologically-organized differences in the physical attributes of boys and girls precipitate socialization pressures to conform to traditional sex roles characterized by greater agentic traits for males and more communal traits by females (Davies and Lindsay, 2004). Thus, research on sex differences in children's social behavior collectively highlights the possibility of sex serving not only as a predictor of social defense functioning, but also as a moderator of both the precursors and sequelae of children's social defense patterns.

SDS functioning in developmental context. Although we focus on the juvenile period here, understanding how maturational processes may alter the operation of the SDS across development remains an important research direction. Within evolutionary

developmental psychology frameworks (Bjorklund and Pellegrini, 2011; Del Giudice, Ellis, and Shirtcliff, 2011; West-Eberhardt, 2003), heightened neurobiological plasticity and changes in cognitive and regulatory skills within specific developmental periods are posited to serve an adaptive function in allowing individuals to recalibrate behavioral systems according to changes in local environmental cues and conditions. Consequently, we propose that developmental windows within early childhood and adolescence, characterized by heightened sensitivity and responsivity to configurations of interpersonal threat, will evidence significant changes in the adoption of SDS strategies. For example, the preschool period in early childhood includes the emergence of social perspective-taking abilities that may support increasingly complex recognition and interpretation of social interactions and motivations (Konner, 2010). As children begin to utilize these newfound skills in interacting with non-familial peers for the first time, discontinuity in adopting a particular social defense strategy may be especially prevalent.

Corresponding biological changes during these periods are also proposed to contribute to changes in the functioning of multiple behavioral systems. For example, with the onset of puberty and reproductive maturity in adolescence, increasing prominence of the sexual system may magnify the sex differences in SDS functioning expected to emerge in juvenility (Ellis et al., 2012; Hawley, 2011). Puberty is specifically associated with increases in the enactment of social dominance and physical risk-taking behaviors as ways of displaying competency and maturity (Ellis et al., 2012). The resulting valuation of accentuating bold behaviors while minimizing signs of weakness may increase the likelihood of boys transitioning from the exaggerated displays of vulnerability evident in a mobilizing pattern of defense towards a risky dominant strategy for contending with peer threat.

SDS functioning and histories of interpersonal experience. The temporal patterning of children's exposure to interpersonal adversity is likely to have a significant impact on the adoption of SDS profiles in peer settings. Prolonged and pervasive exposure to threat is proposed to increase children's tendencies to adopt a highly stable and specialized strategy for defending against threat. EST-R proposes that early experiences in the family may serve as the first developmental crucible for catalyzing stable patterns of social defense.

This premise is supported, in part, by anthropological and archeological evidence that early human societies consisted of small, highly interdependent clans (e.g., Davis and Daly, 1997). Within this tightly knit social environment, early family experiences provided a dependable source of information about contemporaneous and future conditions, threats, and opportunities within the broader social group. Thus, the evolution of sensitive periods to early conditions in the family are likely to have served a selective advantage as a training ground for meeting adaptive challenges within the broader clan or social network. Given the resulting tendency for children to utilize sensorimotor patterns of processing and responding to threat in the family as a guide to contending with subsequent challenges in the peer group, modest to moderate continuity in SDS patterns across time and context is expected (Davies et al., 2013).

However, it is unlikely that each SDS pattern will evidence similar degrees of temporal and contextual stability. For example, demobilizing strategies are proposed to develop from prolonged histories of intense interpersonal adversity and threat without respite or opportunity for escape. Because the substantial resources necessary to maintain a highly plastic SDS that is sensitive to both threats and rewards in the environment is

increasingly unnecessary in highly agonic contexts, the repeated sampling of threatening cues in the environment is proposed to trigger a shift in resources toward a more intractable defensive approach of threat avoidance. As a result, children who have committed to the last resort demobilizing strategy are expected to experience particularly pronounced difficulties in reclaiming any prior plasticity in their social defense strategies, even in the context of subsequent environmental changes toward more balanced exposure to rewards and threats.

Conversely, other SDS strategies may evidence significantly greater plasticity, especially during social transitions and upheavals (Davies and Martin, 2013). For example, the transition to preschool may be a particularly challenging time in early childhood, as children seek to negotiate relationships with unfamiliar peers while conforming to new classroom rules and regulations. Faced with this novel environment, mobilizing-insecure strategies may offer children an opportunity to adapt to subsequent changes in the balance of reward and risk by insuring that they remain vigilant to both social threat and opportunity.

Methodological and conceptual tools for facilitating future research

Tests of our model of peer threat will require a fundamental shift away from prevailing approaches for conceptualizing and assessing children's coping in the context of peer relationships. Variable-based methods for differentiating groups of children based on general physical or social attributes cannot capture the organization of multiple behaviors that are designed to fulfill specific proximate functions. Although existing assessments of social behavior and peer status have significantly advanced the literature (Bierman, 2004; Rubin et al., 2009), commonly used procedures that aim to capture functioning collectively over a wide array of situations fail to capture (a) children's nuanced profiles of behavior within the well-defined contexts of peer threat and challenge, (b) the specific functional utility of behavioral patterns in negotiating the organism-environment relationship resulting in fitness advantages (e.g., laying low to reduce salience as targets of hostility), or (c) the configuration of developmental costs and benefits of coping patterns. Therefore, as outlined in the remaining sections, our social defense model will require a relatively novel set of conceptual and methodological approaches for generating and testing research questions.

The context of assessment. Because the SDS is uniquely designed to process and respond to threat, assessing social defense profiles will require careful, direct observation of children's behavior within well-defined contexts of peer threat. Based on organizational approaches to ethological assessment (Bowlby, 1969), deciphering a child's SDS strategy depends, in part, on the form and nature of their patterns of responding relative to fluctuations in the strength and intensity of threats within the local environment. Whereas all children are expected to respond to direct, intense threats with wariness, distress, and defensive behavior, children adopting one of the three insecure (i.e., hyperactivated) social defense strategies are expected to respond with an incommensurate degree of reactivity even in the context of modest, indirect, and ambiguous threat signals. Accordingly, maximizing validity of the assessment of social defense profiles will require the use of trained observers who are capable of carefully evaluating children's reactions to a broad sampling of both direct (aimed at the target child) and indirect (not aimed at the target child) experiences with interpersonal threat of varying intensity.

While observing on-going fluctuations in the strength and intensity of threatening

events, observers should execute caution in interpreting children's reactions to direct, intense threats (e.g., direct physical aggression), as even entrained patterns of social defense may break down under conditions of severe distress. Instead, coders should more heavily weight children's behaviors during and directly following modest-to-moderate levels of threat in the environment (e.g., two peers have a heated argument near, but not involving, the target child; a peer takes the target child's toy without asking). Moreover, because our theory is designed to examine how children defend against interpersonal threat and conflict, children's behavior under benign or harmonious peer conditions should be largely ignored.

A person-based approach. Existing approaches for assessing peer functioning commonly rely on frequency counts or ratings of the overt form (i.e., morphology) of children's behaviors, either in isolation or as broader aggregates based on correlations between ratings in the sample as a whole. In contrast, our evolutionary approach specifically proposes that each SDS profile is defined by a unique pattern of interrelationships between behaviors that cannot be captured by either a myopic focus on single, discrete behaviors or by a sample-wide composite of multiple behaviors. For example, whereas aggression and expressions of vulnerability are predicted to be strongly positively correlated for mobilizing children, dominant-insecure children are theorized to evidence relatively low levels of vulnerability in the context of high levels of aggression.

Considering the four patterns of social defense in relation to sociometric peer status (e.g., Bierman, 2004; Newcomb, Bukowski, and Pattee, 1993) provides another illustrative example of the uniqueness of EST-R in relation to existing constructs in the peer literature. A cursory comparison of the approaches might raise the possibility that insecure profiles are simply markers for rejected status, whereas secure children will be disproportionately overrepresented in the "popular" category. Although we propose that there will be lawful interrelationships between children's social defense profiles and their peer standing, a more systematic analysis of the two classes of constructs demonstrates that they are distinct.

We maintain that many insecure children will not fall within the "rejected" category, and a substantial proportion of children assigned to categories of social standing considered to be "negative" (e.g., controversial, neglected) may be secure. For example, although mobilizers tend to exhibit qualities that might reduce their attractiveness as play partners (e.g., dysregulation, immaturity), they also exhibit characteristics that may garner positive attention from others (e.g., dutiful subordination, social interest). Therefore, although mobilizing children may be at risk for experiencing lower social standing in the peer group, we predict that they exhibit considerable heterogeneity in status across the average, controversial, and rejected status groups.

Likewise, secure children may be disproportionately less likely to be labeled as rejected, given predictions that security tends to emerge from relatively benign and harmonious interpersonal histories. However, the value of security in garnering peer liking nominations is proposed to be relatively constrained to conditions of threat. We expect secure children to be just as likely to be assigned to traditionally "positive" (i.e., average, popular) and "negative" (i.e., controversial, neglected) status groups depending on the strategies they adopt to meet non-defensive goals (e.g., resource-control). For example, maintaining composure in the face of threat may allow children to enlist the dominance system and enact bold, aggressive, and competitive strategies in contexts of resource control (see Table 1). Depending on the degree to which children are able to achieve goals

in the affiliative system, these children may fall within popular or controversial status categories (Davies and Martin, in press; Hawley et al., 2007). Consequently, although the ways children cope with peer threat may have important links with their peer standing, there is not predicted to be a one-to-one correspondence between social defense profiles and status in the peer network.

Consistent with a person-based approach, our evolutionary model of social defense requires a switch to assessing how variables relate to one another *within* a person (Magnusson, 1998). From this perspective, individual differences are based on the degree to which children's profiles of behavior resemble prototypical patterns of social defense. Existing person-based methodological (e.g., q-sort methodologies, higher-order patterns of coding) and analytic (e.g., latent class analysis) strategies will likely continue to be valuable tools for capturing social defense behaviors. Likewise, we are in the early stages of devising and testing the viability of training observers to evaluate the degree to which children's functionally organized responses to peer threats capture each of the four SDS profiles (Davies and Martin, 2013).

A balanced analysis of developmental costs and benefits. Consistent with the evolutionary-developmental perspective (Ellis and Bjorklund, 2012), our framework is designed to move beyond the traditional "mental-health model" for evaluating behavior based on social norms for "desirable" and "undesirable" forms. Evolutionary frameworks specifically eschew the approach of drawing on widely shared ideas about what is "good" or "bad" for development in determining whether a particular outcome reflects a "deficit" or "impairment" (Ellis and Bjorklund, 2012). Rather than focusing exclusively on the form of behavior, our model relies on both form and function to determine whether the behaviors organized to meet a specific proximate goal confer a fitness advantage. As a consequence, evolutionary frameworks offer a more balanced consideration of both the costs and benefits of adopting a particular SDS strategy (Hawley, 2011). Although it may be tempting, based on psychological tradition, to predict maladaptive consequences for insecure strategies and beneficial implications for security, a comparable priority should be given to identifying the adaptive advantages gained by adopting specific insecure profiles and the long-term costs associated with being secure.

In magnifying the significance of these research directions, the objective of identifying distinctive portfolios of strengths and weaknesses associated with specific SDS profiles may prove to be very useful in advancing clinical practice and public policy initiatives. For example, children with mobilizing tendencies are proposed to exhibit a unique assortment of advantages and disadvantages characterized by high levels of communion and interest in social connection, but relatively poor social skills, difficulty regulating affect, and limited friendship networks. Therefore, they may disproportionately benefit from an intervention program with a relatively heavy emphasis on social skills exercises, emotion regulation training, and pairing with a competent peer. Conversely, children exhibiting a dominant-insecure profile are proposed to benefit from their bold and agentic approach to the world, but also exhibit a tendency towards callousness, downplaying interpersonal relationships, and blunting vulnerable affect. In this context, dominant-insecure children are unlikely to benefit from treatment programs designed to increase empathy or punish antisocial behaviors. Rather, an approach providing privileges or physical rewards for displaying prosocial behavior may be especially useful. Although the clinical and policy implications of the SDS framework are ultimately predicated on

obtaining additional empirical support for our hypotheses, the balanced analysis of developmental capacities within the evolutionary developmental perspective has the potential to inform new directions for reducing mental health problems.

Conclusion

Only time will tell whether our predictions and interpretations of EST-R will prove to be an adequate representation of children's adaptations to peer threat. Nevertheless, even as a conceptual first step, we believe EST-R has a lot to offer in fostering novel research directions and redefining how we think about children's behavior within peer contexts. Given the importance of peer relationships for mental health and adjustment, we hope that researchers are excited by the potential of evolutionary developmental psychology to move the field forward. Understanding how natural selection has shaped human development better equips us all to manage the contexts in which we raise, teach, and socialize children in ways that work with, rather than against, our adaptive goals and towards developing more efficient, effective, and sensitive policies to reduce the costs of child psychopathology.

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