

EPISTEMIC PETRIFICATION AND THE RESTORATION OF EPISTEMIC TRUST: A NEW CONCEPTUALIZATION OF BORDERLINE PERSONALITY DISORDER AND ITS PSYCHOSOCIAL TREATMENT

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A new developmental model of borderline personality disorder (BPD) and its treatment is advanced based on evolutionary considerations concerning the role of attachment, mentalizing, and epistemic trust in the development of psychopathology. We propose that vulnerability to psychopathology in general is related to impairments in epistemic trust, leading to disruptions in the process of salutogenesis, the positive effects associated with the capacity to benefit from the social environment. BPD is perhaps the disorder par excellence that illustrates this view. We argue that this conceptualization makes sense of the presence of both marked rigidity and instability in BPD, and has far-reaching implications for intervention.

There is growing consensus among researchers that adequate understanding of personality disorders cannot be achieved without the incorporation of a developmental perspective (Cicchetti, 2014; Cicchetti & Crick, 2009; Shiner, 2009; Tackett, Balsis, Oltmanns, & Krueger, 2009; Tackett & Sharp, 2014; Widiger, De Clercq, & De Fruyt, 2009). To this end, recent personality disorder research has focused on developmental issues with relevance for multiple personality disorder constructs, including reward processing (White et al., 2014), stress responses (Tackett et al., 2014), emotion regulation (Gratz et al., 2014), and social cognition (Sharp & Vanwoerden, 2014). Over recent years there has been increasing interest in the emergence of borderline personality disorder (BPD; Arens et al., 2013; Bornovalova, Hicks, Iacono, & McGue, 2013; Chanen & McCutcheon, 2013; Stepp, Olino, Klein, Seeley, & Lewinsohn, 2013), and evidence to suggest that the disorder may have roots in early development is accumulating (Goodman, Patel, Oakes, Matho, & Triebwasser, 2013; Lopez-Castroman et al., 2013; Perroud et al., 2013; Siever, 2008). In this paper, building on earlier work on the significance of attachment and mentalization for the development of BPD (see Allen, Fonagy,

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& Bateman, 2008; Fonagy & Luyten, 2009; Fonagy & Luyten, in press; Fonagy, Luyten, & Strathearn, 2011), we propose a developmental framework that conceptualizes BPD in terms of a specific underlying vulnerability to psychopathology. We define this vulnerability as the impairment of epistemic trust. Our framework is proposed as a heuristic rather than an etiological model, but a heuristic with, we hope, significant clinical implications.

Our starting point is the remarkable and paradoxical combination of marked *rigidity* and *instability* in BPD. Clinicians are often struck by the rigidity in the BPD patient's behavioral repertoire, which, unsurprisingly, has become a key feature of many extant theories of BPD, as we will discuss below. Yet BPD is also notable for its instability—in symptoms, coping strategies, and relationships, but also in the course of the disorder (Skodol et al., 2006; Zanarini, Lauder, Frankenburg, Wedig, & Fitzmaurice, 2013). Instability, it has been noted, is what is stable in BPD (Schmideberg, 1959).

RIGIDITY AND THEORIES ON BORDERLINE PERSONALITY DISORDER

Rigidity is at the heart of many theories about BPD and has been most often related to personality. The rigidity characteristic of BPD is undoubtedly from one perspective a personality trait. It is a common human experience that we encounter individuals without the flexibility to adopt alternative positions from the ones they find themselves occupying at a particular time point. It is most closely related to high and maladaptive levels of conscientiousness and low levels of openness to experience (Widiger, Lynam, Miller, & Oltmanns, 2012). While we find the notion of personality traits helpful, we are also mindful of the risk of reification of such constructs (Luyten, 2015). In our view, personality should be seen as a set of interacting capacities underpinned by a neural system. Temperament (the Five Factor Model and its extensions) is undoubtedly part of the process of such interactions, but neither defines it nor necessarily predicts meaningfully individual outcome when many more categories of events enter the fray.

We favor a developmental perspective in which personality is seen as a dynamic construct; dynamic in the sense that it is *the result of historical, biological and social processes interacting at every moment across the lifespan*. Rigidity, in this context, is a developmental meta-construct. It refers to personality functioning. Rigidity is that which must be absent if the individual is to progress fluidly, flexibly, and adaptively across the phases of individual development.

Of course this is a very old idea, originally affirmed within the domain of personality theories by Carl Rogers (Rogers, 1961; Rogers & Dymond, 1954), but anticipated by phenomenological and existential philosophy (Sartre, 1946; Snygg & Combs, 1949). Rogers described a fully functioning personality as being characterized by openness to experience, flexibility, adaptability, and spontaneity, and an absence of rigidity.

A similar theme emerges in Beck's landmark cognitive model of personality disorder (Beck, Freeman, & Davis, 2004). Flexibility of cognitive-

affective schemas is a key feature of the structural qualities of schemas besides their breadth and density in Beck's framework. The loss of the capacity for change (i.e., rigidity) is indicative of the malfunctioning of cognitive-affective schemas. Perhaps most specifically relevant to us in the interpersonal context we are focusing on is Beck's assertion that all personality pathology is characterized by the expectation that "others" are untrustworthy.

In object relations models of personality disorder, rigidity re-emerges as a descriptor. In Nancy McWilliams' theory (McWilliams, 2011), rigidity is a central feature of personality pathology, whereby individuals tend to give the same response irrespective of the situation or interpersonal context in which they find themselves. In Kernberg's model (Caligor, Kernberg, & Clarkin, 2007; Kernberg, 1984), rigidity is a response style that is activated inflexibly regardless of context. It is operationalizable and measurable in instruments such as the Structured Interview of Personality Organization (STIPO) (Clarkin, Caligor, Stern, & Kernberg, 2007).

Perhaps closest to the current model is Blatt's two-polarities theory of personality development. This model essentially proposes that adaptive personality development is characterized by the capacity constantly to re-evaluate issues of self-definition and relatedness in the course of development. Shifts inevitably occur along this vector depending on experience (Luyten & Blatt, 2011). Adaptive personality development involves a dialectic synergistic interaction between these polarities. The sense of self emerges at increasingly mature levels of interpersonal relatedness, which in turn facilitates further differentiation and integration in the development of the self, and vice versa. The basic requirement for adaptive personality development thus is the capacity to move flexibly back and forth. By contrast, rigidity in this model consists of an exaggerated insistence on either polarity, conceptualized in terms of personality pathology.

Closely allied with Blatt's frame of reference are ideas from interpersonal psychology and attachment theory (Mikulincer & Shaver, 2007). Within attachment theory, attachment anxiety and attachment avoidance are defined as the critical vectors underlying attachment, which in combination yield an overlapping definition of personality (Bartholomew & Horowitz, 1991; Mikulincer, Shaver, & Pereg, 2003). Secure attachment is defined by low to moderate levels of avoidance of others (relatedness) and attachment anxiety (anxiety about separateness). These individuals can thus move freely and are able to function independently while accepting their need for others, because they feel confident on the basis of their unique history that distress would be met by comforting, without having the need for constant reassurance that this will be the case. Thus, within this version of adult attachment security, the absence of personality pathology is defined as a continual process of restoring equilibrium. Personality pathology, once again, is defined as the absence of this capacity to restore equilibrium, reflected in the use of insecure attachment strategies when faced with distress. The lack of fluidity is perhaps greatest in individuals who show both a high level of avoidance and intense attachment anxiety, traditionally seen as the hallmark of disorganized at-

tachment. This is easy to understand given the “catch-22” that this configuration creates. If the need for others cannot be satisfied even in the presence of the attachment figure because the individual feels deeply suspicious of the attachment figure’s motives, while the intense need for separateness is consistently undermined by the intense desire to seek reassurance, the individual faces an insoluble interpersonal dilemma. His/her experiences will inevitably validate his/her preconceptions, and the potential for change in the light of “new data” is minimal. Thus, while security is assured by flexibility, which derives from refusing to consider closeness and autonomy as antagonistic and irreconcilable goals, insecurity and (partial) rigidity arise when individuals are unable to relocate on the closeness–distance dimension without fearing either a permanent loss of autonomy or the loss of affection of their attachment figure. The key here is the invalidation of interpersonal information arising from any encounter, regardless of the nature of such information. Even a positive response from the attachment figure will be discounted by assumptions about his/her motives. But dismissal or closing of the flow of information is unsustainable because of the overriding need for reassurance.

It is beyond the scope of this article to try to define personality, but heuristically we think of personality as the hypothetical construct that bridges the interface between the individual and his/her social environment. Thus, across a number of models, we have seen that flexibility and rigidity represent a meta-construct describing the way an individual makes use of the mechanisms assumed to underpin personality, whether these are cognitive schemas, internal object relationships, interpersonal expectations, or intersubjective concerns. This seems to capture something of the essence of how we should conceptualize personality disorder—as a failure of appropriate responsiveness to information within a system at the interface of the person and his/her social environment. In the next section, we propose an evolutionary theory to understand the origins of this epistemic petrification drawing on recently emerging evolutionary views and data.

THE INTERGENERATIONAL TRANSMISSION OF KNOWLEDGE

The high genetic loading of personality disorder (Bornovalova, Hicks, Iacono, & McGue, 2009; Distel et al., 2008; Kendler et al., 2008; Torgersen et al., 2000) suggests that its etiology may be embedded in human evolution and species-specific adaptation. The evolution of social cognition in *Homo sapiens* has been a lively focus of inquiry over the past two decades (Caporael, 1997; Dean, Kendal, Schapiro, Thierry, & Laland, 2012; Herrmann, Call, Hernandez-Lloreda, Hare, & Tomasello, 2007; Miller et al., 2012; van Schaik & Burkart, 2011). The emergence of the ability to appreciate others’ subjective dispositional and motivational states, that is, the capacity for social cognition or mentalizing, is now increasingly believed to underpin the remarkable human capacity to tolerate and benefit from meaningful interactions within very large social groups that are inconceivable in nonhuman species, including nonhuman primates. The size of the social group, for instance, correlates with the size of the neocortex (prefrontal and temporo-

parietal areas that support the large-scale social interaction characteristic of *Homo sapiens*) (Dunbar & Shultz, 2007; Kanai, Bahrami, Roylance, & Rees, 2012; Sallet et al., 2011).

Comparisons of the skulls of Neanderthals with those of *Homo sapiens* carbon dated to roughly the same historical epoch when they coexisted in Europe have shown that the Neanderthals had relatively larger eyes, which implies the possession of much larger visual processing areas—an adaptation to the long dark nights of European winters (Pearce, Stringer, & Dunbar, 2013). By contrast, *Homo sapiens*, which evolved originally in Africa, specialized less on vision and body control and more on problem solving and social networking. The capacity to communicate is likely to have evolved more rapidly and effectively when less brain capacity was taken up with vision and body control, and ultimately gave a massive evolutionary advantage to *Homo sapiens* in Europe and elsewhere. In particular, Neanderthals may have had less social networking over wide geographical terrains, which may have given *Homo sapiens* an essential advantage as the Ice Age descended on Europe. Concurrently, Smith and colleagues (2010) proposed that the period of immaturity (childhood) became more prolonged for *Homo sapiens* relative to Neanderthals, based at least on the maturation of teeth (later loss of deciduous teeth). These observations indicate the growing importance of the transgenerational transmission of knowledge within human culture (Wilson, 2013; Wilson, Hayes, Biglan, & Embry, 2014; Wilson & Wilson, 2007). While Neanderthals and *Homo sapiens* may have descended from a common ancestor (*Homo heidelbergensis*), *Homo sapiens* emerged out of Africa as a superior adaptation—not in terms of physical strength or visual acuity, but in terms of the capacity for symbolic thinking and the transmission of knowledge. These enabled our species to begin to collaborate in larger numbers.

THE HUMAN INSTINCT(S) AND PSYCHODYNAMIC MODELS OF PERSONALITY DISORDER

So how are these findings and assumptions relevant for models of personality disorder? Modern psychodynamic thinking has invoked three human instincts in causal accounts of personality disorder (Gergely & Jacob, 2012). First, following Freud, psychosexual development and aggression have been placed at center stage in earlier psychoanalytic accounts (Cohen, 1991). An alternative account, emerging in the second half of the last century, rooted personality disorder in the distortions of the instinct for attachment. Originating in the work of John Bowlby and the research of Mary Ainsworth, a generation of scholarship was devoted to the identification of early mother (caregiver)–infant relationship patterns likely to be associated with personality disorder (Gunderson, 1996; Gunderson & Lyons-Ruth, 2008). Yet, the complexity of evidence linking the early child-rearing environment to later adaptation, the limited power of long-term prediction that the observation of early attachment quality offers (Fearon, Bakermans-Kranenburg, van IJzendoorn, Lapsley, & Roisman, 2010; Groh, Roisman, van IJzendoorn, Bakermans-Kranenburg, & Fearon, 2012; van IJzendoorn & Bakermans-

Kranenburg, 2008; van IJzendoorn, Scheungel, & Bakermans-Kranenburg, 1999), and new evidence concerning the potential role of genetics in predictions from attachment classification (Fearon, Shmueli-Goetz, Viding, Fonagy, & Plomin, 2014; Fearon et al., 2010; Groh et al., 2012) have all led commentators to voice increasing skepticism concerning models of anomalous personality development and the attachment construct (Harris, 2013). Even if significant, the weakness of prediction from early attachment suggests that it is unlikely to constitute the final common pathway for personality dysfunction. We and others have sought to address this concern by arguing that the capacity to mentalize, that is, to understand ourselves and others in terms of mental states, which is largely acquired in the context of attachment relationships, may be more important than attachment per se (Fonagy, 1998; Fonagy & Bateman, 2008; Fonagy, Target, Gergely, Allen, & Bateman, 2003). But an emphasis on mentalizing in and of itself may suffer from the same limitations as an exclusive emphasis on sexuality, aggression, and attachment: that is, insufficient power to account for the complexity to provide a probable final common pathway. This brings us to the importance of a third human instinct: communication.

Whether unique to *Homo sapiens* or shared with Neanderthals, communication is undoubtedly the instinct that drives the transmission of knowledge and culture that made our African ancestors unique in evolutionary history. Culture stands in opposition to that which is inherited and denotes behaviors that are acquired and can characterize a social group (Adamson Hoebel, 1966). However, if culture is defined as *any learned behavior*, it clearly applies to animals as well as humans. It certainly describes all primate species that have highly evolved capacities for cognitive mapping, object characterization, creative problem solving, and so on. In fact, shared social skills also characterize primates, including the recognition of third-party social relationships and the prediction of future behavior (Tomasello & Call, 1997). However, critically, according to Tomasello (2014, p. 105), while certain primates have shown an ability to learn some form of human-like communication, some key elements of human communication are missing, namely, “all of those aspects of human grammar that conceptually structure constructions for others and their knowledge, expectations, and perspective.” Tomasello (2014) stresses that all aspects of thinking that are unique to humans are fundamentally socially constituted.

Tomasello and Call (1997) suggest that the evolution of human as distinct from nonhuman culture consisted of three parallel threads: (1) the creation and use of conventional symbols, which includes the use of spoken and written forms of language, and other forms of symbolization, such as music; (2) the creation of complex implements (tools) and their application in increasingly sophisticated technology; and (3) the creation of complex social systems, structures, and organizations to facilitate social interaction. The weaving together of these threads yields the intergenerational transfer of knowledge which replaced DNA to become the hallmark of human evolution about 300 millennia ago (Wilson, 2013) and constitutes culture that we rely on as the shared and generalizable store of knowledge defining individual and group adaptation. Tomasello (1999) argues that the emergence

of culture is based on the “ratchet effect,” whereby social learning for which evolution has prepared us allows knowledge to be accumulated and retained within a social group until a better solution to the same problem comes along.

EMULATIVE AND IMITATIVE LEARNING

In Tomasello’s model, knowledge transmission depends on the combination of an imitative component and a symbolic representation of experience. In nonhuman primates, learning focuses on environmental events that have coalesced to produce a desirable change. This is termed *emulative learning*. Emulative learning does not include reproducing an instrumental act *understood intentionally*. This latter feature makes genuine *imitative learning* distinct. When a human infant learns to look not only at an object but at the adult caregiver’s direction of gaze, the infant prepares *to act on an object* in the way the adult is observed to be acting on it. Tomasello and others (e.g., Moore & Dunham, 1995) suggest that such *joint attention* is a clear indication of the infant’s growing recognition of others as intentional agents who are not victims of circumstance but rather can be expected to have the capacity to regulate and direct their behavior.

Tomasello suggests that the key feature of cultural (imitative) learning is the understanding that others act for internal reasons and, like oneself, have a perspective on the world that may be understood and shared. By taking intention as the primary determinant of knowledge transmission, imitative learning focuses the learner on the objective rather than the physical context. By contrast, primate emulative learning is determined by what is most efficient in a particular environment (Nagell, Olguin, & Tomasello, 1993). Thus, the essence of culture, as embodied in imitative learning, is its capacity to liberate from immediate exigencies and achieve independence from the physical environment. Its selective advantage is inherently bound up with change. In a stable physical environment, we may expect the chimpanzee to outperform the human, but the human imitation model enables adaptation to a far wider range of physical environments via the complex social system that accumulates knowledge and preserves creativity.

THE USE OF TOOLS

The key distinguishing feature of human adaptation is the acquisition of knowledge that is transmitted to us by our social group. Gergely and Jacob (2012) suggest this to be necessary because of the *learnability problem* created by the increasing use of tools. Human beings’ extensive use of epistemically opaque tools (“opaque” in the sense that their proper use and the procedure for their creation are not clear from their structure) presents the infant with a learning challenge. The infant must rapidly develop knowledge of the properties and use of tools that integrates both procedural and semantic information that is freed from (not restricted to) any particular environmental context in which he/she may have observed the tool being used. The capacity for acquiring and retaining this information depends on the ability

to generalize knowledge related to the tool across contexts. If the infant is to carry forward (or “ratchet,” to use Tomasello’s term) intelligence in relation to that object, knowledge about how it can be used in other contexts needs to be transmitted. Although in the case of simple tools it is not impossible to learn about their use by observation, in the case of more complex tools (e.g., those that are used to create other desired tools) neither their purpose nor the intention of the user is transparent, so the need for communication becomes paramount. The capacity for communication—both emitting and receiving—provides an overwhelming selective advantage in relation to the appropriate and fully functional use of (multipurpose) instruments (Engels, 1876; Gergely & Jacob, 2012).

So how is knowledge transferred between the generations? In order to benefit from communication, individuals must remain vigilant about the truth value of information they receive. Without such *epistemic vigilance* (Sperber et al., 2010), they run the risk of being misinformed, either accidentally or intentionally, because as soon as the direct correspondence with situation and context is abandoned, “anything goes”; there can be no directly observable evidence of truth. From an evolutionary perspective, this gives a substantial selection advantage to the individual with the skill to misinform competitors but, more importantly, to those with the ability to discern and act on accurate information (Sperber et al., 2010).

EPISTEMIC TRUST AND CULTURALLY TRANSMITTED BELIEFS

There are two ways that individuals accept culturally transmitted beliefs into their own personal reservoir of knowledge: either because of their content (deductively) or because of the authority of their source (Sperber et al., 2010; Wilson & Sperber, 2012). For example, believing in witches no longer corresponds to the other beliefs we hold about the material character of the natural world. Grasping these deductive relations is a mostly unconscious process and is linked with the ready acquisition of knowledge that is consistent with expectations. Perhaps more effort may be involved in testing content through examining and exploring inductive relations to the evidence. This has to be in accordance with principles of theoretical rationality of the agent who is the subject of imitation.

Both these forms of computation require relatively high-level reasoning capacity and may be less efficient than simply accepting an account on the basis of authority. We are clearly at an advantage if, rather than having to “work it out,” we can simply “assume it to be so” because the source of the information is known to us, and is recalled and assessed as a reliable and trustworthy originator of knowledge in general or in this context specifically. Such “deferentially transmitted” (Recanati, 1997) knowledge is taken to be shared common knowledge among members of one’s community because of certain characteristic features of the communication, which lift the barrier of epistemic vigilance and encourage the human learner to incorporate that form of knowledge as known and shared by everyone belonging to their group (Gergely & Jacob, 2012).

NATURAL PEDAGOGY, OSTENSIVE CUES, AND THE “EPISTEMIC SUPERHIGHWAY”

Why is one piece of information acquired in this way embraced as part of one's social inheritance while another is rejected, or rather treated as situationally pertinent knowledge and not generalized beyond the current physical situation?

The theory of natural pedagogy (ToNP) (Csibra & Gergely, 2009) posits a human-specific, cue-driven social cognitive adaptation of mutual design dedicated to ensure the most effective and efficient transfer of culturally relevant knowledge. Following Tomasello (Tomasello, 2008), Csibra and Gergely argue that humans have evolved to *learn*, but, corresponding to this, also to *teach*. Human communication is the evolutionary product of the requirement to transmit cognitively opaque cultural knowledge—generic knowledge that is robust to interference, is kind generalizable, and becomes experienced as shared in the sense that it immediately generates an expectation that others belonging to the same social group possess this knowledge.

Bertrand Russell (1940) pointed to the process of *ostentiation* in communication. Csibra and Gergely use this idea (also discussed by Sperber and Wilson 1995), suggesting that certain signals are used by an agent to alert the addressee that the agent intends to communicate. These signals are a cue to limit epistemic vigilance. *Ostensive cues* alert the recipient of the communication that the subsequent pieces of knowledge will be relevant information and should be incorporated with cultural knowledge. The information can be laid down and used as part of procedural and semantic memory, not uniquely or primarily episodic memory. The distinction between these memory systems is well established in neuroscience (Squire, 2004).

Human infants display a species-specific sensitivity in relation to certain nonverbal ostensive behavioral signals (Csibra & Gergely, 2006, 2009, 2011). They attend preferentially to such signals, and the impact of these signals on their behavior is readily apparent. Ostensive cues include eye contact, turn-taking contingent reactivity, and the use of a special vocal tone, all of which appear to trigger a special mode of learning in the infant. Ostensive communicative cues, such as being called by name, trigger the pedagogic stance. By using ostensive cues—both in childhood and in adulthood—the communicator explicitly recognizes the listener as a person with intentionality. When the listener is paid special attention to and noticed as an agent, he/she adopts an attitude of *epistemic trust* and is thus ready to receive personally relevant knowledge about the social world that goes beyond the specific experience. In this way knowledge that is relevant in many settings is acquired.

Ostensive cues thus trigger *epistemic trust*. They set aside the biological protection to “being misled” provided by epistemic vigilance. They open a channel of information exchange designed by evolution to transmit and assist in receiving knowledge about the social and personally relevant world, going beyond the individual's specific experience. The information is retained and encoded with the authority but not the person of the communicator. Epistemic trust is there to ensure that we can safely change our position and

triggers the opening of an evolutionarily protected “*epistemic highway*” that signals readiness for knowledge acquisition. Csibra and Gergely (2009) summarize several intriguing developmental experiments, which give powerful support to the ToNP. They offer compelling evidence from infancy for the power of this dialogic learning process. For example, in one simple demonstration, 6-month-old infants were shown to follow an agent’s gaze shift selectively to an object only if the gaze shift had been preceded by either eye contact with the infant or infant-directed speech (Senju & Csibra, 2008). Shared attention with an agent is triggered by the infant experiencing the agent’s interest. The interest triggers the infant’s expectation (epistemic trust) that there may be something relevant for the infant to learn.

ATTACHMENT AND EPISTEMIC TRUST

Crucially, learning about culturally transmitted and relevant knowledge thus first takes places in the context of attachment relationships. This brings us back to the study of personality disorders. Studies of attachment have shown that secure attachment is driven by sensitive responsiveness contingent upon an infant’s reaction (Belsky & Fearon, 2008; Marvin & Britner, 2008). But at least equally—and in our opinion perhaps even more—important is that secure attachment is created by a system that is capable of simultaneously generating a sense of epistemic trust. While secure attachment may not be a necessary condition for generating epistemic trust, it may be a sufficient condition, which is the most pervasive in early childhood because it is a highly evolutionarily effective indicator of trustworthiness.

In order to survive, the child needs to overcome the self-preservative barrier created by natural epistemic vigilance and open his/her mind to acquiring the myriad pieces of culturally relevant information he/she will need. Attachment may be seen as part of a mechanism of deferential knowledge transmission that has evolved to create a kind of epistemic connection between learners and teachers who share genetic material (Hamilton, 1964). The biological predisposition of the caregiver to respond contingently to the infant’s at first automatic expressive displays creates the foundation for the infant to acquire further knowledge from that individual. During what we have termed “marked mirroring interactions” (Fonagy, Gergely, Jurist, & Target, 2002; Gergely & Watson, 1996), the attachment figure will “mark” her referential emotion displays to signal the generalizability of knowledge and effectively to instruct the infant about the infant’s subjective experience: “look at me” (marked display/ostensive cue), “this is what you are feeling” (culturally transmitted self-knowledge) (Fonagy, Gergely, & Target, 2007). In other words, “marking” by the caregiver that is part of “good enough” mirroring serves as an ostensive cue to the infant that the concurrent mirroring of affect signals is relevant and generalizable.

MENTAL OPENNESS AND ATTACHMENT SECURITY

Looked at from a distance, micro-analytic (e.g., Beebe et al., 2010) and more global (e.g., DeWolf & van IJzendoorn, 1997; Isabella, Belsky, & von Eye, 1989; Kiser, Bates, Maslin, & Bayles, 1986; Mills-Koonce et al., 2007) manifestations of sensitive caregiving can be seen as in essence acts of recognition of the child's agentic self. It is this recognition that we believe offers the cognitive advantage to secure attachment that has been fairly consistently noted, although not, to our knowledge, commonly studied (e.g., Crandell & Hobson, 1999; Jacobsen & Hofmann, 1997; Moss, Rousseau, Parent, St.-Laurent, & Saintong, 1998). We believe that through the down-regulation of affect triggered by proximity seeking in the distressed infant, attachment establishes not only a lasting bond but also the opening of a channel to transfer knowledge between the generations.

Even in adulthood, insecure attachment remains associated with cognitive disadvantages (Ayoub et al., 2009; Fernald, Weber, Galasso, & Ratsifandrihamanana, 2011; Goodman, Quas, & Ogle, 2010; Rieder & Cicchetti, 1989). Particularly, adult attachment insecurity is likely to be associated with a greater likelihood of cognitive closure, a lower tolerance for ambiguity, and a more pronounced tendency to dogmatic thinking (Mikulincer, 1997). Individuals who are insecure in their attachment are also more likely to save intellectual effort and adopt stereotypes (Mikulincer, 1997). The same predisposition to knowledge inflexibility is revealed by insecure individuals' tendency to make judgments on the basis of early information and to pay insufficient heed to subsequent data even if it is incompatible with the configuration first created (Green-Hennessy & Reis, 1998; Mikulincer, 1997). Insecure individuals, who fear the loss of attachment figures, also anxiously hold on to their initial constructions. They are less likely to revise their knowledge in the face of information that challenges their assumptions (Green-Hennessy & Reis, 1998; Green & Campbell, 2000; Mikulincer, 1997; Mikulincer & Arad, 1999) as if they not only had less confidence in the robustness of their bond to their attachment figure, but also feared the loss of epistemic trust. In sum, we assume that *the epistemic connection provided to us by evolution in order for us to learn from experience appears to be partially closed to those whose attachment to their caregiver is insecure.*

This is not a new perspective. Kruglanski (1989; Kruglanski & Webster, 1996; Pierro & Kruglanski, 2008) proposed the concept of "*epistemic freezing*," characterized by a tendency to defend existing knowledge structures even when they are incorrect or misleading (see also Fiske & Taylor, 1991). A defensive strategy may indeed be adaptive if an individual's self-esteem is vulnerable. Cognitive closure, dogmatism, and conservatism may simply be strategies to safeguard an inadequately individuated self (Bowlby, 1980). Mikulincer (1997) suggested that insecure individuals were more readily threatened by information that challenged their knowledge structures because their sense of self is vulnerable to being emotionally overwhelmed. If emotional

dysregulation is experienced as a real and imminent threat, individuals may opt for knowledge stability as it temporarily serves to down-regulate arousal. Secure individuals' greater confidence that they will be able to recover from dysregulation also enables them to be less defensive in relation to opening their minds to information that may challenge their assumptions.

OSTENSIVE CUES AND MATERNAL MENTALIZING

The concepts of sensitive caregiving and ostensive cues come together in the construct of mentalizing. Mentalizing is the capacity of one individual to understand the actions of another in terms of the thoughts, feelings, wishes, and desires (mental states) of that person (Bateman & Fonagy, 2012; Fonagy et al., 2002; Fonagy & Target, 2006). We suggest that ostensive cues are based on both affect- and cognition-focused nonconscious, automatic indicators to the recipient that the communicator has adopted a mentalizing stance towards them, that is, that their actions will be interpreted in line with their subjective experience of themselves.

There is considerable evidence that the caregiver's capacity to "mentalize" the child predicts secure attachment. A number of ways of operationalizing maternal mentalizing, including prenatal reflective function (Fonagy, Steele, Steele, Moran, & Higgitt, 1991), child-specific reflective function (Slade, Grienemberger, Bernbach, Levy, & Locker, 2005), mind-related comments (Meins, Fernyhough, Fradley, & Tuckey, 2001; Meins et al., 2002), and a diverse range of other measures of the construct (Aber, Slade, Berger, Bresgi, & Kaplan, 1985; Koren-Karie, Oppenheim, Dolev, Sher, & Etzion-Carasso, 2002; Oppenheim & Koren-Karie, 2013; Solomon & George, 1999), have demonstrated that the child's attachment security is predicted by the mother's mentalizing capacity. Further, maternal mentalizing has been shown to protect the infant from the transmission of trauma (Schechter et al., 2006) and disruptive maternal behavior (Slade, 2005). The benefit of mentalizing goes beyond attachment to predicting the general capacity for emotion recognition (Taumoepeau & Ruffman, 2006) and the child's performance in the task of social cognition (Laranjo, Bernier, Meins, & Carlson, 2010; Meins et al., 2002), as well as general social cognitive development (Meins et al., 2003). Schiborr and colleagues (2013) provided a systematic review of studies that have explored child-focused maternal mentalization in the first 3 years of life and identified 15 separate measurement approaches to assessing maternal mentalizing, ranging from assessments of maternal narratives for their reflectivity (Fonagy, Target, Steele, & Steele, 1998; Slade, 2005), insightfulness (Bretherton, Biringen, Ridgeway, Maslin, & Sherman, 1989; Oppenheim & Koren-Karie, 2009), meta-emotional representation (Gottman, Katz, & Hooven, 1996), and the proclivity to attribute meaning to the child indicated by uttering vocal, but meaningless and nonstandard words (Meins, 1998), and observational tools to assess the mother's treating the infant as a mental agent capable of intentional action (Meins et al., 2001), the use of mental state terms (Furrow, Moore, Davidge, & Chiasson,

1992; Ruffman, Slade, & Crowe, 2002), mental state language (Schechter et al., 2006) and mental state references (Slaughter, Peterson, & Carpenter, 2008) in relation to or directly to the child.

At root, these diverse approaches to understanding the quality of the relationship between caregiver and child all attempt to elaborate the notion of sensitivity in the direction of specifying “appropriate responsiveness” in terms of maternal self-awareness in the role of a communicator (teacher) in the transactional process to establish an appropriate pathway for information transmission. This can be operationalized in an interactional context in terms of ostensive cues, such as maternal responsiveness to the infant’s direction of gaze or to the infant’s object-directed actions, imitation of the infant, encouragement of autonomous actions, mind-related comments, and the use of mental state language. Personal predisposition to these actions is reasonably predicted by a range of trait variables discernible in the parent’s narrative. Mind-oriented or “mind-minded” (to use Elizabeth Meins’ term; Meins et al., 2003) narratives and behaviors signal a richness in terms of ostensive cues, which establish a communication pattern characterized by flexibility and receptiveness to new information between adult and child.

Epistemic trust is triggered by ostensive cues, which in turn trigger a special kind of attention. Attachment is just a special condition for generating epistemic trust. Caregiving within the attachment system provokes that special kind of attention, potentially opening the mind of the recipient of information to the possibility that the next set of communications is relevant to them as an individual. In general, any communication that is “marked” (Fonagy et al., 2007) by recognition of the listener as an intentional agent will enhance epistemic trust and increase the likelihood that the communication will subsequently be coded as relevant, generalizable, and to be retained in long-term procedural or semantic memory independent of the autobiographical episode where it was received.

THE DYSFUNCTIONAL USE OF OSTENSIVE CUES AND THE RISK OF BPD

We are all aware of an extensive body of work that shows vulnerability to personality disorder manifested in the marked absence of respect for the recipient of communications as an active agent. There is no space here to review the extensive range of studies that have shown (a) insecure attachment to be associated with personality disorder; (b) insecure and often mindless child–caregiver interactions antedating personality disorder; and, perhaps most pertinent (c) anomalies of early mother–infant communication that predict not only attachment disorganization but, in some carefully conducted longitudinal studies, the likely emergence of personality pathology (see Fonagy & Luyten, *in press*, for a review).

Detailed inquiry into these high-risk anomalies of parent–infant communication suggests the potential misuse of ostensive cueing. By “misuse of ostensive cueing” we mean using cues to lead the infant to anticipate person-

ally relevant generalizable knowledge through a kind of pseudo-sensitivity followed by the transmission of disruptive and even destructive knowledge. The manual for the coding system *Disconnected and Extremely Insensitive Parenting*¹ (Out et al., 2009) (predicting disorganized attachment) is rich in examples of this pattern. Some of these are: anomalous movements and postures; simultaneous contradictions in vocalizations; suddenly stilling and freezing posture, or startling in response to the child's behavior; sudden voice alterations; sudden and inexplicable shifts of mood; and showing fear in relation to aspects of the environment that are not intrinsically frightening. Both "on-line" and "off-line" studies of the mother's capacity to represent the mental state of her child shows that mothers who are better able to read their infant's sense of subjective self (their agentiveness) are most likely to engender a secure attachment relationship.

A longitudinal study by Corriveau and colleagues (2009) indicates the implications of attachment disorganization for the epistemic aspects of the mother-child relationship. In this study, 147 children whose attachment status had been assessed in infancy were tested twice for epistemic attitudes at 50 and 61 months. In each test, the mother and a stranger gave the child conflicting information in three tasks: in naming a novel object, in naming a hybrid animal made up 50% each of two animals, and in naming a hybrid animal made up of 75% of one animal and 25% of another. The proportion of trials in which children chose their mother for information was a function of both infant attachment classification and task. Children who had been securely attached infants were most likely to trust their mothers as long as their claims were reasonably credible, but agreed with the stranger (and their own perception) when the mother named an animal counterintuitively. Thus, secure attachment lays the foundation for an epistemic attitude of confidence in one's own experience and belief (it empowers judgment). Children who had been avoidant as infants tended to mistrust the mother in neutral or ambiguous conditions but showed confidence in their own experience. Those who had been anxiously attached were likely to agree with the attachment figure even when her claims were counterintuitive. Children whose attachment had been disorganized in infancy showed a particularly striking response. They tended to mistrust both information from their own experience and the attachment figure's or the stranger's views. These children seemed to be left with an insoluble dilemma about "whose information can I trust?" This perhaps lays the ground for a potentially interminable epistemic search: seeking others to confirm or deny one's own understanding and yet finding it impossible to trust the information once it has been received. This may generate a state of epistemic hypervigilance where lack of trust is generalized to any communication.

1. The DIP coding system assesses disconnected and extremely insensitive parental behavior. Items from Main and Hesse's (1998) coding instrument, entitled "Frightening, frightened, dissociated, sexualized and disorganized parental behavior: A coding system for parent-infant interactions" are included, as well as items from the system by Bronfman, Parsons, and Lyons-Ruth (1992-2004), entitled "Atypical maternal behavior instrument for assessment and classification" (AMBIANCE).

IMPLICATIONS FOR UNDERSTANDING THE CORE FEATURES OF BORDERLINE PERSONALITY DISORDER

THE INTERPERSONAL TRADITION

Recently, Hopwood and colleagues (Hopwood, Wright, Ansell, & Pincus, 2013), along with Bornstein (2013) and Gunderson and Lyons-Ruth (2008), have made a strong case that personality pathology, which at its core is interpersonal in its manifestations, should be diagnosed and classified in a relational context. They suggest that the core features that define personality pathology play themselves out in both clinical and everyday settings in the field of interpersonal situations. They cite a wide range of scholars whose contributions may be considered to have similar emphases (Beck, Kernberg, Linehan, Rutter, Wiggins, etc.).

Whether contemporary interpersonal theory does or does not provide the best available map for navigating this interpersonal landscape, the core of the argument that it is hard to imagine personality pathology aside from its social context would be hard to contest. Bender (2013), reviewing no fewer than 18 primary studies, suggested that the two common developmental pathways proposed by Luyten and Blatt (2011)—self-definition and interpersonal relatedness—offer a unifying stance across the personality disorder field. We naturally agree, with the significant amendment that it is rigidity (or lack of flexibility) in the person's positioning on these two pathways that requires mapping in personality disorder. It is the lack of flexibility in interpersonal relationships (not merely their distortion) that identifies individuals with personality disorder. We have identified rigidity as a way of conceptualizing interpersonal dysfunction in personality disorder. Taking the perspective of epistemic trust as the mediator of culture and its key underlying engine for progression, we have to see *the destruction of trust in social knowledge as the key mechanism in pathological personality development*.

EPISTEMIC MISTRUST AND THE REASON FOR HEIGHTENED EPISTEMIC VIGILANCE

Early Adversity. Trust may be undermined or destroyed by social adversity, especially attachment trauma (Allen, 2013). Recently, Nicol and colleagues (2013) found that BPD patients judged faces as less trustworthy (and approachable) than controls in line with experiences of childhood trauma, and argued that this may explain why BPD patients struggle to make appropriate social judgments based on others' facial expressions. Maltreatment at a formative stage of development may be the most common reason for mistrust. This is not specific to BPD: we know that such experiences slow response to treatment regardless of primary diagnosis (e.g., Teicher & Samson, 2013). Among individuals with personality disorders, rates of childhood trauma are high (73% report abuse, of which 34% is sexual abuse, and 82% report neglect; Ball & Links, 2009; Chanen & Kaess, 2012). BPD patients are four times more likely than normal controls to have suffered early trauma (Johnson, Cohen, Brown, Smailes, & Bernstein, 1999). BPD is more consistently

associated with childhood maltreatment than are other personality disorder diagnoses (e.g., Baird, Veague, & Rabbitt, 2005; Buchheim et al., 2008).

However, adversity also seems to leave individuals at increased risk for other mental disorders (Paris, 2007). Several systematic reviews support an association between child abuse and psychosis (e.g., Read & Bentall, 2012), bipolar disorder (e.g., Daruy-Filho, Brietzke, Lafer, & Grassi-Oliveira, 2011), and depression (e.g., Nanni, Uher, & Danese, 2012). Of course, not all those with abuse histories go on to develop BPD. In a prospective study of maltreated children (Widom, Czaja, & Paris, 2009), only 14.9% of those who had been abused met criteria for BPD. Some individuals with confirmed BPD do not report childhood abuse, with rates varying between 8% (Kingdon et al., 2010) and 70% (Afifi et al., 2011) depending on the population sampled. Although evidence for specificity is lacking, Ball and Links (2009) concluded from perhaps the most thoughtful review to date that a causal relationship was likely.

We should interpret the relatively high prevalence of maltreatment in individuals with BPD with caution. Do these individuals report the abuse they have experienced accurately (see Battle et al., 2004; Huang et al., 2012; Machizawa-Summers, 2007; Zanarini et al., 2000)? However, much of the criticism is leveled at assertions of sexual or physical abuse. We feel that while epistemic trust may be undermined by the frank brutality of such abuse, neglect and emotional abuse are likely to play a larger role. A recent systematic review (Crombie & Fonagy, 2015) identified 39 studies that reported on neglect and emotional abuse from 33 independent samples, of which eight were prospective studies. Results obtained from longitudinal cohort studies confirmed findings of cross-sectional investigations that emotional neglect and abuse predicted the emergence of BPD symptoms in later life (Carlson, Egeland, & Sroufe, 2009; Crawford, Cohen, Chen, Anglin, & Ehrensaft, 2009; Helgeland & Torgersen, 2004; Johnson et al., 2001; Johnson, Smailes, Cohen, Brown, & Bernstein, 2000; Widom et al., 2009).

The specific significance of neglect and emotional abuse for BPD is emphasized in the studies that failed to find a significant difference in relation to sexual abuse (Bellino et al., 2005; Bierer et al., 2003; Laporte, Paris, Guttman, & Russell, 2011; Widom et al., 2009; Zanarini et al., 2000) or physical abuse (Battle et al., 2004; Widom et al., 2009 (in male patients only); Wingefeld et al., 2011) yet revealed significantly increased BPD prevalence associated with emotional neglect and abuse. In three studies (Gratz, Tull, Baruch, Bornovalova, & Lejuez, 2008; Huang et al., 2012; Machizawa-Summers, 2007), emotional neglect and abuse were significant predictors of BPD symptoms over and above all other types of abuse. In the study of Specht, Chapman, and Cellucci (2009), lack of emotional support was shown to be the only significant predictor of BPD symptoms.

A Genetic Predisposition to Hypermentalize. Beyond trauma, epistemic mistrust may also result from exceptionally high levels of epistemic vigilance associated with the over-interpretation of motives and may be a possible consequence of the hypermentalization that appears to characterize adolescents with BPD (Sharp et al., 2011; Sharp et al., 2013). An enhanced ability

to detect negative emotions (Daros, Uliaszek, & Ruocco, 2014; Scott, Levy, Adams, & Stevenson, 2011) may be explained by the tendency to hypermentalize, which may be a genetic predisposition rather than environmentally triggered. In such instances the addressee assumes that the communicator's intentions are other than those declared, and therefore does not treat the source deferentially. A number of empirical studies have indicated the likelihood of patients with BPD misattributing mental states (Daros et al., 2014; Matzke, Herpertz, Berger, Fleischer, & Domes, 2014; Unoka, Fogd, Fuzy, & Csukly, 2011; van den Heuvel, Derksen, Eling, & van der Staak, 2012). Mostly, findings are consistent with the assumption of common misattribution of intention and seeing the reasons for someone's actions as more likely to be malevolent and therefore—appropriately—treated with epistemic hypervigilance. The most important consequence of this for our argument is that the regular process of modifying stable beliefs about the world (and oneself in relation to others) is unavailable. In the absence of epistemic trust, the loss of the capacity for updating social knowledge generates an apparent rigidity.

Of course, the tendency to misattribute intentions and assume others' communicative intentions are fundamentally malevolent is an aspect of paranoia, which is common across a range of personality disorder diagnoses (Beck et al., 2004; Blatt, 2008). While epistemic vigilance is explicit in paranoia, it is an appropriate and natural stance on all our parts and probably should not be considered the “marked” pole of this vector. Epistemic *trust* is probably the more evolutionarily unusual stance and may require a fair dose of neurochemical facilitation (oxytocin and dopamine) to become active (Bartz, Zaki, Bolger, & Ochsner, 2011). But this is a tangential debate. The fundamental point here is that in some individuals, perhaps due to a biological predisposition to hypermentalize or to adverse learning experiences or both, the primary avenue for modifying stable beliefs about the world has been closed.

Thus, on the basis of extant data we feel that a lack of trust in communication on the part of patients with BPD is understandable and is in accordance with the principles of theoretical rationality. BPD should not then be seen as anything other than a failure of relationships.

Epistemic Mistrust in the Clinical Context. Clinicians ignore epistemic mistrust at their peril. The rigidity is in the eyes of the communicator who, in accordance with the principles of theoretical rationality, expects the person to modify their behavior on the basis of the information they have received and apparently understood. But in the absence of trust the capacity for change is absent. The information presented by the communicator is not used to update the individual's social understanding. In terms of the ToNP, the person has (temporarily) lost the capacity for learning. From a therapist's standpoint, he/she has become “hard to reach” and interpersonally inaccessible.

An individual in a state of epistemic mistrust (or at an extreme, epistemic petrification) cannot change through interpersonal experience. A basic route for acquiring culturally relevant knowledge is functioning in only a limited way. They cannot change because they cannot accept that the information

they receive is from a “trustworthy source” and therefore is not experienced as relevant to them and that it can usefully be generalized to other social contexts. It is received episodically and can be remembered as something that happened as part of the process of autobiographical recall. But it is not incorporated into the procedural and semantic systems that govern an individual’s behavior across social situations. Epistemic mistrust is not a lack of interest. On the contrary, we may anticipate epistemic “hunger” (an urgent need to seek validation of one’s own experience) to be combined with mistrust if an individual experiences uncertainty in relation to his/her personal experience.

BPD, then, is conceived by us as a failure of communication. It is not a failure of the individual patient, but a failure of learning relationships (the patient is not “hard to reach,” but we find it hard to reach him/her). From the patients’ perspective, their situation is associated with an unbearable sense of isolation generated by epistemic mistrust. Our inability to communicate with patients causes frustration in us and a tendency to blame them for our failure to communicate. We, as clinicians, feel they are not listening to us. But it may be more productive for us to think that they find it hard to trust the truth and relevance of what they hear.

To put it bluntly, we are suggesting that BPD is not a disorder of personality, unless “personality” is being used as a synonym for “slow changing.” Rather, BPD describes a state of social inaccessibility. It can be conceived of as a temporary state of incompatibility with a grand evolutionary design of intra-cultural communication in which we all play a part. It describes a state of isolation from communication with one’s partner, one’s therapist, one’s teacher, all created by epistemic mistrust.

IMPLICATIONS FOR TREATMENT

THE THERAPEUTIC ALLIANCE AND MENTALIZING

The arguments advanced above lead us to consider a common factors approach to psychotherapy, at least with individuals with BPD. Eight different therapies for BPD have been shown to be effective in randomized controlled trials (Leichsenring, Leibing, Kruse, New, & Leweke, 2011). We can legitimately ask whether these therapies work for the reasons the developers suggested. An argument has raged for many years as to whether the “Dodo-bird verdict” on the effectiveness of psychological therapies could not be most parsimoniously accounted for by contemplating a limited number of non-specific factors common to all therapies and necessary for bringing about change (e.g., Budd & Hughes, 2009; Mansell, 2011). If there are only a limited number of treatment mechanisms that account for the success of psychological therapies, what are these? In general, researchers have focused on three common factors (Castonguay, 2011; Wampold et al., 2011): (1) the centrality of the therapeutic relationship, including the establishment of a strong working alliance, the therapist’s attitude of caring, and the agreement between patient and therapist on treatment roles; (2) a clear and credible treatment frame that promotes a sense that the therapeutic environment is

safe and structured, and has clear principles for addressing dimensions of personality pathology; and (3) an intervention that increases the patient's sense of competence, agentiveness, and self-efficacy. It is of some interest to note that the paradigmatic common factor, the centrality of the therapeutic relationship, has key components that include the therapist's capacity for understanding, the patient feeling supported and cared about, and the establishment of a commonly adopted set of treatment goals, alongside an idea that the alliance is based on a high-quality working relationship.

Two recent studies have temporarily put paid to the controversy about whether symptomatic improvement is a cause or consequence of a strong therapeutic alliance (Falkenstrom, Granstrom, & Holmqvist, 2013; Tasca & Lampard, 2012). The recurrent objection to ascribing a causal role to the therapeutic relationship in the process of change has been the potential for symptomatic change to improve the treatment alliance (Baldwin, Wampold, & Imel, 2007; Kazdin, 2009). Using session-by-session monitoring, both these studies found evidence that the therapeutic alliance by and large precedes symptomatic improvement.

But why should therapeutic alliance bring symptomatic relief? The treatment alliance literature defines the *location* of part of the change process but fails to specify the *mechanism*. Improvement seems to occur between the end of one session and the beginning of the next. Do patients somehow anticipate that they are going to improve, and feel good about the relationship in anticipation? Does it have something to do with the attachment system, and if so, through what process?

MENTALIZING IN THE MEDIATION OF THE EFFECTIVENESS OF PSYCHOTHERAPY

Mentalizing as a Common Factor in Psychotherapy. We have previously proposed that mentalizing could provide an integrative framework bringing together brain and mind within a singular discourse and that a range of therapeutic modalities could be conceptualized in terms of mentalizing (Bateman & Fonagy, 2004). Goodman (2013) wrote: "Bateman and Fonagy [2004] hypothesize that enhancing mentalization is the common process factor inherent to all treatment models designed to treat BPD patients" (p. 179). To be fair, we have suggested that "the potential effectiveness of all treatments depends not so much on their frame but on their ability to increase a patient's capacity to mentalize" (Bateman & Fonagy, 2004, p. 46).

In an intriguing and unique study, Goldman and Gregory (2010) demonstrated that the therapeutic process of identifying, acknowledging, and sequencing emotional experiences correlated highly with the reduction of BPD symptoms in outpatients. This is in line with Fonagy and Bateman's (Fonagy & Bateman, 2006) suggestion that the crux of the value of psychotherapy with BPD is the experience of another human being having the patient's mind in mind, and that therapy works by reviving the patient's capacity to interpret behavior as motivated by mental states, both in themselves and in others.

In a study using the Psychotherapy Process Q-set (Ablon & Jones, 2002), Goodman (2013) showed that the prototypes for transference-focused psy-

chotherapy (TFP) correlated with the psychodynamic psychotherapy prototype; the prototype for dialectical behavior therapy (DBT) correlated with the CBT prototype, and an MBT (reflective functioning process) prototype loaded on both TFP and DBT prototypes. Notably, the TFP prototype contained mentalizing items focused on the patient's mentalization of the therapist or other relationships, while the mentalizing elements of the DBT prototype focused on the patients' mentalization of themselves, perhaps in line with DBT's use of mindfulness practice. Goodman argues that the reflective functioning process prototype encompasses the assertion that enhancing mentalization is central to therapy with BPD patients and may unify effective approaches.

While reinterpreting and identifying the same mentalizing process in all treatment approaches may bring narcissistic gratification, it brings little or nothing to the therapist's table in terms of genuine food for clinical thought. As with the therapeutic alliance literature, what is needed is greater specificity about the role of mentalizing in bringing about therapeutic change.

Mentalizing as a Way Epistemic Trust Is Established. Mentalizing in therapy must be distinguished from mentalizing in the social world. To "learn" to mentalize in treatment is not in our view an appropriate therapeutic aim. We cannot assume that what we learn about mental states in treatment will somehow generalize to the world outside, allowing us to achieve better interpersonal relationships. Making this claim, even implicitly, as we believe we have been guilty of, omits the actual critical stage in the therapeutic change process.

Mentalizing is a key part of the therapeutic process because it enhances our ability to learn. Mentalizing is a generic way of establishing epistemic trust with the aim of freeing the person from rigidity, so they can begin to learn from experience and achieve change in their understanding of the social relationships they are part of, as well as their own behavior and actions. Having the experience of our subjectivity being understood is the necessary key to open us up to learning—learning that has the potential to change our perception of our social world. Mentalizing is not psychotherapy; it is a key to accessing a biologically laid down method of modifying lasting structures of knowledge about the world. As such, it is part of the central process that underpins information transmission from generation to generation. It enables us to garner knowledge relevant to us and to use it across contexts, independently of the learning experience. Again, to simplify and demystify, the experience of feeling thought about in therapy makes us feel safe enough to think about ourselves in relation to our world.

As we have established already, what we as clinicians see is mostly the product of developmental adversity, whether genetic or environmental in origin. There should be no competition for misfortune. Attempts to attribute hardship in line with etiological ideology are not only misplaced but are downright unethical. However, psychotherapy, and perhaps even the sensitive administration of biological therapies (e.g., Sylvia et al., 2013), is primarily concerned not with the *what* but the *how* of learning. Mentalizing establishes a view of the person as an agent. Seeing the world from the patient's

standpoint opens the patient's mind by establishing epistemic trust in creating a collaboration. The patient becomes able once again to trust *the social world as a learning environment*. But perhaps it is not what we then teach patients in therapy that matters. Perhaps the rekindling of the evolutionarily protected capacity for learning from social situations is what generates most change. Therapeutic interventions are effective because they open the person to social learning experiences, which then feed back (Benish, Quintana, & Wampold, 2011) in a virtuous cycle.

WHY IS PSYCHOTHERAPY EFFECTIVE FOR BORDERLINE PERSONALITY DISORDER?

We propose that in effect three sets of processes, which we will label “systems,” underpin the mechanism of change in the psychosocial treatment of BPD patients. We suggest that the three systems relate to each other cumulatively to make change possible.

COMMUNICATION SYSTEM 1: THE TEACHING AND LEARNING OF CONTENT

All evidence-based treatments of BPD provide a coherent, consistent, and continuous framework that enables the patient to examine the issues deemed to be central according to that particular model (e.g., early schemas, invalidating experiences, object relations, and current attachment experiences) in a safe and low-arousal context. Thus, all evidence-based psychotherapies provide the patient with useful skills or knowledge, such as acquiring strategies to deal with emotional dysregulation or restructuring interpersonal relationship schemata from the past or in the present as part of imparting such content. Perhaps more importantly, however, all evidence-based therapies deliver to the patient a model of mind, of disorder, and a hypothetical process of change *that are convincing and accurate enough to enable the patient to feel recognized as an agent*. The model contains sufficient personally relevant information for the patient to feel markedly mirrored or “understood” and to increase the patient's capacity for understanding, be it a dynamic formulation of internal conflicts, as in TFP, or the offering of essential self-management skills such as DEARMAN² in DBT, or indeed formulations of interpersonal relationships as presented in cognitive analytic therapy. These model-specific interventions help because they relate to the patient's specific needs, for example, their problems with emotion regulation, their inadequate knowledge about themselves, or other specific deficits. It is therefore natural for us to assume that the interventions with specific aims have their impact on the specific capacities they are intended to address. The evidence for such assumptions is, however, not compelling (Forster, Berthollier, & Rawlinson, 2014).

2. The acronym is a mnemonic for the following skills, which comprise an interpersonal effectiveness strategy: Describe, Express, Assert, Reinforce, stay Mindful, Appear confident, Negotiate.

In essence, the impact of these implicit or explicit explanations and suggestions serve ostensive cues; they signal to the patient the relevance of the information that is conveyed by triggering personal recognition in him/her. This process is important because it leads the patient to reduce his/her epistemic hypervigilance as he/she increasingly sees the relevance of the model to his/her own state of mind. Thus, acquiring new skills that had been lacking and learning new (useful) information about oneself have a nonspecific effect of creating openness that makes it easier for the patient to learn the specific content conveyed within the model. A virtuous cycle is created: the patient feels the truth of the evidence-based content conveyed, which creates increasing epistemic openness; this in turn allows the patient to take in further information that naturally also serves to reassure and validate. When the patient feels mentalized by the “felt truth” of the content being communicated, this facilitates further learning.

We know that without a coherent body of knowledge based on a systematically established set of principles, psychological therapy is but an empty shell. It does not meet Wampold and colleagues’ (1997) criteria for a “bona fide” treatment. Even in meta-analyses of large cohort studies, therapies without a credible tight intellectual frame are observed to fail (Benish et al., 2011). However, there are probably more than a thousand different models of psychotherapy (Lambert, 2013), with more being added every day. The fact that there are so many different therapies, using so many different theoretical models that have been found to have some beneficial effect, indicates that the significance of Communication System 1 lies perhaps not in the essential truth of the “wisdom” of the specific approach, to which the patient is increasingly open in the course of his/her treatment, but in the fact that it causes him/her to give some weight to a piece of communication from the social world. This brings us to System 2.

COMMUNICATION SYSTEM 2: THE RE-EMERGENCE OF ROBUST MENTALIZING

Through the process of passing on knowledge and skills, the therapist implicitly recognizes the agentiveness of the patient. The therapist’s presentation of information that is personally relevant to the patient (which we can see as a form of marked mirroring) serves as a form of ostensive cueing that conveys that the therapist is seeking to understand the patient’s perspective. This in turn enables the patient to hear and to listen. In effect, the therapist is modeling how he/she engages in mentalizing in relation to the patient. It is important that in this process both patient and therapist come to see each other more clearly as intentional agents. It is not sufficient for therapists to present their “mentalizing wisdom” to the patient if they are not themselves clearly seen as agentive actors whose actions are predictable, given the principles of theoretical rationality. In the facilitating context of an open and trustworthy social situation, a better understanding of the beliefs, wishes, and desires underpinning the actions of others and of the self can be achieved. This in turn allows for a more trusting and less paranoid interpersonal relationship in the consulting room.

In brief, mentalizing interventions demand collaboration (working together), seeing from the other's perspective, treating the other as a person, recognizing them as an agent, assuming they have things to teach us—since mental states are opaque—and, of course, responding contingently to them, so that, ideally, the patient's feeling of having been sensitively responded to opens a second virtuous cycle in interpersonal communication *in which the patient's own capacity to mentalize is regenerated*.

However, the mentalizing of patients—that is, acting in accordance with their perspective—may be a common factor across psychotherapies, not because patients need to learn about the contents of their minds or those of others, but rather as a generic way of establishing an increased level of epistemic trust and thereby achieving change in mental *function*. We would maintain that the patient's capacity to mentalize improves in all therapies. This serves to increase self-control, reduce the patient's experience of mental pain, and improve their ability to think in the context of intense attachment relationships. This has been a key part of our understanding of the mechanisms of change since the MBT model was first developed (Fonagy & Bateman, 2006). A vital part of this process is the patient's subjectivity being understood. It is also vital to a further function of therapy, which we wish to recognize separately, namely the rekindling of his/her desire to learn about the world, including the social world. In brief, and to simplify what is probably a complex nonlinear process, the insight obtained in therapy, whatever its content, creates or recreates the potential for a learning experience, which in turn makes other similar learning experiences more productive and *enables a stance of learning from experience*.³

We would like to underline a point that may seem initially puzzling given our declared commitment to mentalization-based psychotherapy: *mentalizing in itself is not the objective of therapy*. Instructing the therapist to focus the patient on their own thoughts and feelings, or indeed the thoughts and feelings of those around them, will not achieve change. It will initiate change by changing the mindset of the individual undergoing treatment. However, System 2 can no more assure enduring alteration in the individual than does System 1. Mentalizing is a catalyst to the acceptance of socially transmitted new understandings. Improvement is based on learning from experience beyond therapy.

COMMUNICATION SYSTEM 3: THE RE-EMERGENCE OF SOCIAL LEARNING BEYOND THERAPY

We hypothesize that feeling understood opens a key biological route to information transmission and the possibility of taking in knowledge that is felt to be personally relevant and generalizable. This is what brings about change in previously rigidly held beliefs. In essence, the experience of feeling thought about enables us to learn new things about our social world.

3. We are all too aware that in using this phrase we are leaning heavily on Wilfred Bion's discoveries (Bion, 1962), although the therapeutic implications of what we are proposing are quite different.

The therapeutic situation teaches about sources of knowledge. It provides a clear social illustration of trust, making the therapist a “deferential source” (Wilson & Sperber, 2012) of knowledge with the capacity to undo previously rigidly held beliefs about the self and about others, and to dissolve the patient’s experience of epistemic isolation, which is embodied in the rigidity of his/her subjective experience. A third virtuous cycle is initiated. Improved mentalizing permits improved understanding of social situations, which leads to better understanding of important others in the patient’s life, in turn creating the potential for the patient to notice a sensitive response and feel understood. Reopening the potential to feel sensitively responded to may in itself initiate more trusting, less paranoid interpersonal relationships, and may thus open the person up to new understandings of specific social situations as they arise.

We posit that, as the patient’s state of epistemic hypervigilance relaxes, his/her capacity for trust will increase and he/she will discover new ways of learning about others. This brings with it an increase in the patient’s willingness to modify his/her cognitive structures for interpreting the behavior of others. Social experiences that may have been positive, but were in the past discounted as a result of the patient’s epistemic hypervigilance, now have the potential to have a positive impact. This is the third system of change, which becomes available once System 2 has opened the way to change by enhancing the patient’s capacity to mentalize. As patients begin to experience social interactions in a more benign way and see the social situations they are in more accurately (e.g., not seeing an experience of temporary social disappointment as an outright rejection), they update their knowledge of both themselves and others.

It is the recovery of the capacity for social information exchange that is at the heart of psychotherapies. They impart an ability to modify or benefit from benign social intentions, and to update knowledge about the self and others in social situations. The improved sense of epistemic trust enables learning from social experience; in this way the third virtuous cycle is maintained beyond therapy.

As therapists we often assume that the process in the consulting room is the primary driver of change. Yet change may be primarily brought about by what happens beyond therapy—by the way a person uses their social environment. As noted, empirical evidence from session-by-session monitoring of change suggests that the therapeutic alliance in the previous session foretells change in the next (Falkenstrom et al., 2013; Tasca & Lampard, 2012). This suggests that change occurs in between sessions, as a consequence of changed attitudes to learning engendered by the therapy.

The implication, however, is also that the extent of benefit a patient may derive from treatment may largely depend on what is accessible to the patient in his/her particular social world. We predict that psychotherapy for BPD is much more likely to succeed if the patient’s social environment at the time of treatment is generally benign. Although we do not know of any systematic studies that have explored this moderator, clinical experience suggests that there is likely to be some validity to this assertion. Further, we should not forget the potential role of evocative person–environment correlations here.

Because of a greater openness to social learning, patients may also begin actively influence and even “select” their environment in a more positive way, as is also demonstrated by studies suggesting that the process of “relationship-recruiting” may play a crucial role in explaining resilience and the emergence of so-called broaden-and-build cycles (Fonagy & Luyten, 2009; Hauser, Allen, & Golden, 2006).

This admittedly in part still speculative model offers a way of integrating the specific and nonspecific factors in psychotherapy. Specific factors associated with therapies that work create experiences of truth, which in turn encourage the patient to learn more. In this process, via a nonspecific channel, the patient’s capacity to mentalize is fostered. Both these systems would be expected to lead to symptomatic improvement. Improved mentalizing and reduced symptomatology then enhance the patient’s experiences of social relationships. It is likely that it is these new social experiences, rather than just what happens in therapy, that serve to erode the epistemic hypervigilance that has hitherto prevented benign social interactions from changing an individual’s experience of themselves and of the social world. *Change is, thus, probably due to how a person uses (and changes) their social environment, not to what happens in therapy.*

SIMPLE PRINCIPLES OF PSYCHOLOGICAL THERAPY WITH BPD

What does all this tell us about development of appropriate treatments for BPD? We know that the treatments that work for BPD are focused and semi-manualized, maximizing effective interventions and ingredients while minimizing iatrogenic treatment components. We suggest that a simple set of principles follows from the epistemic model outlined above, around which effective treatments may be brought together, maximizing benefit while minimizing harm. The list, although perhaps not the justification, is consistent with similar recommendations put forward by others (e.g. Schiavone & Links, 2013), but we would like to add a fourth “C” to the traditional set of three “Cs” that purportedly characterize effective treatments for BPD.

The first “C” is *coherence* and the principle of offering a coherent (understandable) approach to illness and cure that provides the patient with hope. The second is *consistency*, denoting the principle of identifying a well-balanced set of interventions based on the theory of disorder and its cure. The third is *continuity*, the principle of adherence to model throughout the treatment, without which the re-establishment of epistemic trust is inconceivable. The fourth is *communication*, which bears most clearly the hallmark of mentalizing, in that no communication is possible without the communicator having in mind the perspective of the receiver. Ultimately, it is the quality of communication that has the greatest influence. It is most directly implicated in pathology within this formulation of BPD as a disorder of communication, and it most directly guides the steps necessary for effective intervention.

To summarize, at its simplest the clinical model we are advancing is as follows: (1) mentalizing in the clinical setting (individual, group, family, or community) engenders a sense of genuine collaboration through the estab-

lishment of an attachment relationship that in turn (2) leads to an increased sense of epistemic trust, which then (3) permits greater general openness to social learning with an increasingly accurate interpretation of others' intentions. This brings with it "cure," in (4) enabling the patient to develop new relationships imbued with epistemic trust or, equally, to rekindle old ones. It is these new (or renewed old) relationships that will ensure further improvement in learning from social experience.

Nothing that we have said calls into question the importance of establishing a clear treatment frame. To the contrary: it is essential for good enough communication that patients enter treatment with a sense that the therapeutic environment is safe and structured. This is essential because signals of safety cannot be heard against a background of noise generated by noncomprehended unpredictable actions. A clear treatment frame makes it easier for the patient to discern the ostensive cues that serve as the key signals of recognition of the patient's agentiveness. From our point of view, this establishes the therapist in the role of a differentially treated source (Recanati, 1997). The re-establishment of normal communication feeds into the virtuous cycle of normal social development from which we all benefit.

A PAINFUL CONCLUSION

And this brings us to the most painful part of this position paper. Are we as clinicians necessary for the patient to achieve recovery? Studies of natural history (Gunderson et al., 2011; Zanarini et al., 2007) suggest that we may not be, although the facts are disputed by those of us whose income depends on seeing professional help as useful. Yet placing the effective component of change outside the consulting room clearly runs the risk of attracting claims of wastefulness at best and charlatanism at worst.

It is by no means clear to us that those with the longest, most arduously acquired training are necessarily in the best position to assist in the re-establishment of normal social communication in patients with BPD. What professional training seems, to us, to deliver is a set of strategies for keeping a channel open in a context where normal human behavior might bring discourse to a dramatic halt and allow action to replace psychological understanding. The basic skills that DBT entails speak forcefully to the need for keeping channels of communication open with the outside world despite a powerful urge to shut down and seek refuge in aggression against the self, the other, or both. The insistent interpretive stance of TFP also maintains communication. MBT provides a scaffolding by means of which even those untrained in dynamic therapy can maintain a conversation with the patient around his/her current experience. Good psychiatric management, as we have seen it practiced, places emphasis on ensuring that the link between the patient and the "outside world" is retained.

More generally, if we place primary emphasis on the need to sustain communication, the broadest use of therapeutic inputs and the most coherent methods for ensuring patient participation in the process can be assured. Respect, validation, empathy, the willingness to modify one's own stance as

a therapist in the light of the patient's changed position, a rigorous and unstinting effort in trying to understand where a patient is coming from, collaborative and joint decision making (where possible), a systematic collection of patient experience data and patient-reported outcome measures that are observed to modify treatment strategies, and millions of other techniques can be adapted to serve the overarching ambition of restoring communication by restoring epistemic trust.

REFERENCES

- Aber, J., Slade, A., Berger, B., Bresgi, I., & Kaplan, M. (1985). *The Parent Development Interview*. Unpublished manuscript. Barnard College, Columbia University, New York, NY.
- Ablon, J. S., & Jones, E. E. (2002). Validity of controlled clinical trials of psychotherapy: Findings from the NIMH Treatment of Depression Collaborative Research Program. *American Journal of Psychiatry*, 159, 775-783.
- Adamson Hoebel, E. (1966). *Anthropology: The study of man*. New York, NY: McGraw-Hill.
- Affi, T. O., Mather, A., Boman, J., Fleisher, W., Enns, M. W., Macmillan, H., & Sareen, J. (2011). Childhood adversity and personality disorders: Results from a nationally representative population-based study. *Journal of Psychiatric Research*, 45, 814-822.
- Allen, J. G. (2013). *Mentalizing in the development and treatment of attachment trauma*. London, UK: Karnac.
- Allen, J. G., Fonagy, P., & Bateman, A. W. (2008). *Mentalizing in clinical practice*. Washington, DC: American Psychiatric Publishing.
- Arens, E. A., Stopsack, M., Spitzer, C., Appel, K., Dudeck, M., Volzke, H., . . . Barnow, S. (2013). Borderline personality disorder in four different age groups: A cross-sectional study of community residents in Germany. *Journal of Personality Disorders*, 27, 196-207.
- Ayoub, C., O'Connor, E., Rappolt-Schlichtmann, G., Vallotton, C., Raikes, H., & Chazan-Cohen, R. (2009). Cognitive skill performance among young children living in poverty: Risk, change, and the promotive effects of Early Head Start. *Early Child Research Quarterly*, 24, 289-305.
- Baird, A. A., Veague, H. B., & Rabbitt, C. E. (2005). Developmental precipitants of borderline personality disorder. *Development and Psychopathology*, 17, 1031-1049.
- Baldwin, S. A., Wampold, B. E., & Imel, Z. E. (2007). Untangling the alliance-outcome correlation: Exploring the relative importance of therapist and patient variability in the alliance. *Journal of Consulting and Clinical Psychology*, 75, 842-852.
- Ball, J. S., & Links, P. S. (2009). Borderline personality disorder and childhood trauma: Evidence for a causal relationship. *Current Psychiatry Reports*, 11, 63-68.
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology*, 61, 226-244.
- Bartz, J. A., Zaki, J., Bolger, N., & Ochsner, K. N. (2011). Social effects of oxytocin in humans: Context and person matter. *Trends in Cognitive Science*, 15, 301-309.
- Bateman, A. W., & Fonagy, P. (2004). Mentalization-based treatment of BPD. *Journal of Personality Disorders*, 18, 36-51.
- Bateman, A. W., & Fonagy, P. (Eds.). (2012). *Handbook of mentalizing in mental health practice*. Washington, DC: American Psychiatric Publishing.
- Battle, C. L., Shea, M. T., Johnson, D. M., Yen, S., Zlotnick, C., Zanarini, M. C., . . . Morey, L. C. (2004). Childhood maltreatment associated with adult personality disorders: Findings from the Collaborative Longitudinal Personality Disorders Study. *Journal of Personality Disorders*, 18, 193-211.
- Beck, A. T., Freeman, A., & Davis, D. D. (2004). *Cognitive therapy of personality disorders*. New York, NY: Guilford.
- Beebe, B., Jaffe, J., Markese, S., Buck, K., Chen, H., Cohen, P., . . . Feldstein, S. (2010). The origins of 12-month attachment: A micro-analysis of 4-month mother-infant interaction. *Attachment and Human Development*, 12, 3-141.
- Bellino, S., Patria, L., Paradiso, E., Di Lorenzo, R., Zanon, C., Zizza, M., & Bogetto, F. (2005). Major depression in patients with borderline personality disorder: A clinical investigation. *Canadian Journal of Psychiatry*, 50, 234-238.
- Belsky, J., & Fearon, P. R. M. (2008). Precursors of attachment security. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment*

- theory and research* (2nd ed., pp. 295-316). New York, NY: Guilford.
- Bender, D. S. (2013). An ecumenical approach to conceptualizing and studying the core of personality psychopathology: A commentary on Hopwood et al. *Journal of Personality Disorders*, 27, 311-319.
- Benish, S. G., Quintana, S., & Wampold, B. E. (2011). Culturally adapted psychotherapy and the legitimacy of myth: A direct-comparison meta-analysis. *Journal of Counseling Psychology*, 58, 279-289.
- Bierer, L. M., Yehuda, R., Schmeidler, J., Mitropoulou, V., New, A. S., Silverman, J. M., & Siever, L. J. (2003). Abuse and neglect in childhood: Relationship to personality disorder diagnoses. *CNS Spectrums*, 8, 737-754.
- Bion, W. R. (1962). *Learning from experience*. London, UK: Heinemann.
- Blatt, S. J. (2008). *Polarities of experience: Relatedness and self definition in personality development, psychopathology, and the therapeutic process*. Washington, DC: American Psychological Association.
- Bornovalova, M. A., Hicks, B. M., Iacono, W. G., & McGue, M. (2009). Stability, change, and heritability of borderline personality disorder traits from adolescence to adulthood: A longitudinal twin study. *Development and Psychopathology*, 21, 1335-1353.
- Bornovalova, M. A., Hicks, B. M., Iacono, W. G., & McGue, M. (2013). Longitudinal twin study of borderline personality disorder traits and substance use in adolescence: Developmental change, reciprocal effects, and genetic and environmental influences. *Personality Disorders*, 4, 23-32.
- Bornstein, R. F. (2013). Combining interpersonal and intrapersonal perspectives on personality pathology: A commentary on Hopwood et al. *Journal of Personality Disorders*, 27, 296-302.
- Bowlby, J. (1980). *Attachment and loss, Vol. 3: Loss: Sadness and depression*. London, UK: Hogarth Press and Institute of Psychoanalysis.
- Bretherton, I., Biringen, Z., Ridgeway, D., Maslin, C., & Sherman, M. (1989). Attachment: The parental perspective. *Infant Mental Health Journal*, 10, 203-221.
- Bronfman, E., Parsons, E., & Lyons-Ruth, K. (1992-2004). *Atypical Maternal Behavior Instrument for Assessment and Classification (AMBIANCE): Manual for coding disrupted affective communication, version 2*. Unpublished manuscript. Harvard Medical School.
- Buchheim, A., Erk, S., George, C., Kachele, H., Kircher, T., Martius, P., . . . Walter, H. (2008). Neural correlates of attachment trauma in borderline personality disorder: A functional magnetic resonance imaging study. *Psychiatry Research*, 163, 223-235.
- Budd, R., & Hughes, I. (2009). The Dodo Bird Verdict—Controversial, inevitable and important: A commentary on 30 years of meta-analyses. *Clinical Psychology and Psychotherapy*, 16, 510-522.
- Caligor, E., Kernberg, O. F., & Clarkin, J. F. (2007). *Handbook of dynamic psychotherapy for higher level personality pathology*. Washington, DC: American Psychiatric Press.
- Caporael, L. R. (1997). The evolution of truly social cognition: The core configurations model. *Personality and Social Psychology Review*, 1, 276-298.
- Carlson, E. A., Egeland, B., & Sroufe, L. A. (2009). A prospective investigation of the development of borderline personality symptoms. *Development and Psychopathology*, 21, 1311-1334.
- Castonguay, L. G. (2011). Psychotherapy, psychopathology, research and practice: Pathways of connections and integration. *Psychotherapy Research*, 21, 125-140.
- Chanen, A. M., & Kaess, M. (2012). Developmental pathways to borderline personality disorder. *Current Psychiatry Reports*, 14, 45-53.
- Chanen, A. M., & McCutcheon, L. (2013). Prevention and early intervention for borderline personality disorder: Current status and recent evidence. *British Journal of Psychiatry. Supplement*, 54, s24-s29.
- Cicchetti, D. (2014). Illustrative developmental psychopathology perspectives on precursors and pathways to personality disorder: Commentary on the special issue. *Journal of Personality Disorders*, 28, 172-179.
- Cicchetti, D., & Crick, N. R. (2009). Precursors and diverse pathways to personality disorder in children and adolescents. *Development and Psychopathology*, 21, 683-685.
- Clarkin, J. F., Caligor, E., Stern, B., & Kernberg, O. F. (2007). *Structured Interview of Personality Organization (STIPO)*. White Plains, NY: Cornell University Personality Disorders Institute.
- Cohen, Y. (1991). Grandiosity in children with narcissistic and borderline disorders. A comparative analysis. *Psychoanalytic Study of the Child*, 46, 307-324.
- Corriveau, K. H., Harris, P. L., Meins, E., Fernyhough, C., Arnott, B., Elliott, L., . . . de Rosnay, M. (2009). Young children's trust in their mother's claims: Longitudinal links with attachment security in infancy. *Child Development*, 80, 750-761.
- Crandell, L. E., & Hobson, R. P. (1999). Individual differences in young children's IQ: A social-developmental perspective. *Journal of Child Psychology and Psychiatry*, 40, 455-464.

- Crawford, T. N., Cohen, P. R., Chen, H., Anglin, D. M., & Ehrensaft, M. (2009). Early maternal separation and the trajectory of borderline personality disorder symptoms. *Development and Psychopathology*, 21, 1013-1030.
- Crombie, T., & Fonagy, P. (2015). *A systematic literature review into the relationship between childhood emotional abuse and emotional neglect and borderline personality disorder*. Manuscript in preparation.
- Csibra, G., & Gergely, G. (2006). Social learning and social cognition: The case for pedagogy. In M. H. Johnson & Y. Munakata (Eds.), *Processes of change in brain and cognitive development. Attention and Performance XXI* (pp. 249-274). Oxford, UK: Oxford University Press.
- Csibra, G., & Gergely, G. (2009). Natural pedagogy. *Trends in Cognitive Sciences*, 13, 148-153.
- Csibra, G., & Gergely, G. (2011). Natural pedagogy as evolutionary adaptation. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences*, 366, 1149-1157.
- Daros, A. R., Uliaszek, A. A., & Ruocco, A. C. (2014). Perceptual biases in facial emotion recognition in borderline personality disorder. *Personality Disorders*, 5, 79-87.
- Daruy-Filho, L., Brietzke, E., Lafer, B., & Grassi-Oliveira, R. (2011). Childhood maltreatment and clinical outcomes of bipolar disorder. *Acta Psychiatrica Scandinavica*, 124, 427-434.
- Dean, L. G., Kendal, R. L., Schapiro, S. J., Thierry, B., & Laland, K. N. (2012). Identification of the social and cognitive processes underlying human cumulative culture. *Science*, 335, 1114-1118.
- DeWolf, M. S., & van IJzendoorn, M. H. (1997). Sensitivity and attachment: A meta-analysis on parental antecedents of infant attachment. *Journal of Marriage and the Family*, 68, 571-591.
- Distel, M. A., Trull, T. J., Derom, C. A., Thiery, E. W., Grimmer, M. A., Martin, N. G., . . . Boomsma, D. I. (2008). Heritability of borderline personality disorder features is similar across three countries. *Psychological Medicine*, 38, 1219-1229.
- Dunbar, R. I. M., & Shultz, S. (2007). Evolution in the social brain. *Science*, 317, 1344-1347.
- Engels, F. (1876). The part played by labour in the transition from ape to man. In *Dialectics of nature*. Retrieved from https://www.marxists.org/archive/marx/works/download/EngelsDialectics_of_Nature_part.pdf
- Falkenström, F., Granström, F., & Holmqvist, R. (2013). Therapeutic alliance predicts symptomatic improvement session by session. *Journal of Counseling Psychology*, 60, 317-328.
- Fearon, P., Shmueli-Goetz, Y., Viding, E., Fonagy, P., & Plomin, R. (2014). Genetic and environmental influences on adolescent attachment. *Journal of Child Psychology and Psychiatry*, 55, 1033-1041. doi:10.1111/jcpp.12171
- Fearon, R. P., Bakermans-Kranenburg, M. J., van IJzendoorn, M. H., Lapsley, A. M., & Roisman, G. I. (2010). The significance of insecure attachment and disorganization in the development of children's externalizing behavior: A meta-analytic study. *Child Development*, 81, 435-456.
- Fernald, L. C., Weber, A., Galasso, E., & Ratsifandrihamanana, L. (2011). Socioeconomic gradients and child development in a very low income population: Evidence from Madagascar. *Developmental Science*, 14, 832-847.
- Fiske, S. T., & Taylor, S. E. (1991). *Social cognition* (2nd ed.). New York, NY: McGraw-Hill.
- Fonagy, P. (1998). An attachment theory approach to treatment of the difficult patient. *Bulletin of the Menninger Clinic*, 62, 147-169.
- Fonagy, P., & Bateman, A. (2008). The development of borderline personality disorder: A mentalizing model. *Journal of Personality Disorders*, 22, 4-21.
- Fonagy, P., & Bateman, A. W. (2006). Mechanisms of change in mentalization-based treatment of BPD. *Journal of Clinical Psychology*, 62, 411-430.
- Fonagy, P., Gergely, G., Jurist, E., & Target, M. (2002). *Affect regulation, mentalization, and the development of the self*. New York, NY: Other Press.
- Fonagy, P., Gergely, G., & Target, M. (2007). The parent-infant dyad and the construction of the subjective self. *Journal of Child Psychology and Psychiatry*, 48, 288-328.
- Fonagy, P., & Luyten, P. (2009). A developmental, mentalization-based approach to the understanding and treatment of borderline personality disorder. *Development and Psychopathology*, 21, 1355-1381.
- Fonagy, P., & Luyten, P. (in press). A multilevel perspective on the development of borderline personality disorder. In D. Cicchetti (Ed.), *Development and psychopathology* (3rd ed.). New York: Wiley.
- Fonagy, P., Luyten, P., & Strathearn, L. (2011). Mentalization and the roots of borderline personality disorder in infancy. In H. E. Fitzgerald, K. Puura, M. Tomlinson & P. Campbell (Eds.), *International perspectives on children and mental health* (Vol. 1, pp. 129-153). Santa Barbara, CA: ABC-CLIO.
- Fonagy, P., Steele, M., Steele, H., Moran, G. S., & Higgitt, A. C. (1991). The capacity for understanding mental states: The reflective

- self in parent and child and its significance for security of attachment. *Infant Mental Health Journal*, 12, 201-218.
- Fonagy, P., & Target, M. (2006). The mentalization-focused approach to self pathology. *Journal of Personality Disorders*, 20, 544-576.
- Fonagy, P., Target, M., Gergely, G., Allen, J. G., & Bateman, A. (2003). The developmental roots of borderline personality disorder in early attachment relationships: A theory and some evidence. *Psychoanalytic Inquiry*, 23, 412-459.
- Fonagy, P., Target, M., Steele, H., & Steele, M. (1998). *Reflective-functioning manual, version 5, for application to Adult Attachment Interviews*. Unpublished manuscript. University College London.
- Forster, C., Berthollier, N., & Rawlinson, D. (2014). A systematic review of potential mechanisms of change in psychotherapeutic interventions for personality disorder. *Journal of Psychology and Psychotherapy*, 4. doi:10.4172/2161-0487.1000133
- Furrow, D., Moore, C., Davidge, J., & Chiasson, L. (1992). Mental terms in mothers' and children's speech: similarities and relationships. *Journal of Child Language*, 19, 617-631.
- Gergely, G., & Jacob, P. (2012). Reasoning about instrumental and communicative agency in human infancy. In J. B. Benson, F. Xu, & T. Kushnir (Eds.), *Advances in child development and behavior*, vol. 43: *Rational constructivism in cognitive development* (pp. 59-94). Waltham, MA: Academic Press/Elsevier.
- Gergely, G., & Watson, J. S. (1996). The social biofeedback theory of parental affect-mirroring: The development of emotional self-awareness and self-control in infancy. *International Journal of Psycho-Analysis*, 77(Pt. 6), 1181-1212.
- Goldman, G. A., & Gregory, R. J. (2010). Relationships between techniques and outcomes for borderline personality disorder. *American Journal of Psychotherapy*, 64, 359-371.
- Goodman, G. (2013). Is mentalization a common process factor in transference-focused psychotherapy and dialectical behavior therapy sessions? *Journal of Psychotherapy Integration*, 23, 179-192.
- Goodman, G. S., Quas, J. A., & Ogle, C. M. (2010). Child maltreatment and memory. *Annual Review of Psychology*, 61, 325-351.
- Goodman, M., Patel, U., Oakes, A., Matho, A., & Triebwasser, J. (2013). Developmental trajectories to male borderline personality disorder. *Journal of Personality Disorders*, 27, 764-782.
- Gottman, J. M., Katz, L. F., & Hooven, C. (1996). Parental meta-emotion philosophy and the emotional life of families: Theoretical models and preliminary data. *Journal of Family Psychology*, 10, 243-268.
- Gratz, K. L., Kiel, E. J., Latzman, R. D., Elkin, T. D., Moore, S. A., & Tull, M. T. (2014). Emotion: Empirical contribution. Maternal borderline personality pathology and infant emotion regulation: Examining the influence of maternal emotion-related difficulties and infant attachment. *Journal of Personality Disorders*, 28, 52-69.
- Gratz, K. L., Tull, M. T., Baruch, D. E., Bornoalova, M. A., & Lejuez, C. W. (2008). Factors associated with co-occurring borderline personality disorder among inner-city substance users: The roles of childhood maltreatment, negative affect intensity/reactivity, and emotion dysregulation. *Comprehensive Psychiatry*, 49, 603-615.
- Green-Hennessy, S., & Reis, H. T. (1998). Openness in processing social information among attachment types. *Personal Relationships*, 5, 449-466.
- Green, J. D., & Campbell, W. K. (2000). Attachment and exploration in adults: Chronic and contextual accessibility. *Personality and Social Psychology Bulletin*, 26, 452-461.
- Groh, A. M., Roisman, G. I., van IJzendoorn, M. H., Bakermans-Kranenburg, M. J., & Fearon, R. P. (2012). The significance of insecure and disorganized attachment for children's internalizing symptoms: A meta-analytic study. *Child Development*, 83, 591-610.
- Gunderson, J. G. (1996). The borderline patient's intolerance of aloneness: Insecure attachments and therapist availability. *American Journal of Psychiatry*, 153, 752-758.
- Gunderson, J. G., & Lyons-Ruth, K. (2008). BPD's interpersonal hypersensitivity phenotype: A gene-environment-developmental model. *Journal of Personality Disorders*, 22, 22-41.
- Gunderson, J. G., Stout, R. L., McGlashan, T. H., Shea, M. T., Morey, L. C., Grilo, C. M., . . . Skodol, A. E. (2011). Ten-year course of borderline personality disorder: Psychopathology and function from the Collaborative Longitudinal Personality Disorders study. *Archives of General Psychiatry*, 68, 827-837.
- Hamilton, W. D. (1964). The genetic evolution of social behaviour. *Journal of Theoretical Biology*, 7, 1-52.
- Harris, B. (2013). Mother, love [Review of the book *The nature and nurture of love: From imprinting to attachment in Cold War America*]. *Science*, 340, 926.
- Hauser, S. T., Allen, J. P., & Golden, E. (2006). *Out of the woods. Tales of resilient teens*. Cambridge, MA: Harvard University Press.

- Helgeland, M. I., & Torgersen, S. (2004). Developmental antecedents of borderline personality disorder. *Comprehensive Psychiatry*, 45, 138-147.
- Herrmann, E., Call, J., Hernandez-Lloreda, M. V., Hare, B., & Tomasello, M. (2007). Humans have evolved specialized skills of social cognition: The cultural intelligence hypothesis. *Science*, 317, 1360-1366.
- Hopwood, C. J., Wright, A. G., Ansell, E. B., & Pincus, A. L. (2013). The interpersonal core of personality pathology. *Journal of Personality Disorders*, 27, 270-295.
- Huang, J., Yang, Y., Wu, J., Napolitano, L. A., Xi, Y., & Cui, Y. (2012). Childhood abuse in Chinese patients with borderline personality disorder. *Journal of Personality Disorders*, 26, 238-254.
- Isabella, R. A., Belsky, J., & von Eye, A. (1989). Origins of infant-mother attachment: An examination of interactional synchrony during the infant's first year. *Developmental Psychology*, 25, 12-21.
- Jacobsen, T., & Hofmann, V. (1997). Children's attachment representations: Longitudinal relations to school behavior and academic competency in middle childhood and adolescence. *Developmental Psychology*, 33, 703-710.
- Johnson, J. G., Cohen, P., Brown, J., Smailes, E. M., & Bernstein, D. P. (1999). Childhood maltreatment increases risk for personality disorders during early adulthood. *Archives of General Psychiatry*, 56, 600-605.
- Johnson, J. G., Cohen, P., Smailes, E. M., Skodol, A. E., Brown, J., & Oldham, J. M. (2001). Childhood verbal abuse and risk for personality disorders during adolescence and early adulthood. *Comprehensive Psychiatry*, 42, 16-23.
- Johnson, J. G., Smailes, E. M., Cohen, P., Brown, J., & Bernstein, D. P. (2000). Associations between four types of childhood neglect and personality disorder symptoms during adolescence and early adulthood: Findings of a community-based longitudinal study. *Journal of Personality Disorders*, 14, 171-187.
- Kanai, R., Bahrami, B., Roylance, R., & Rees, G. (2012). Online social network size is reflected in human brain structure. *Proceedings of the Royal Society B: Biological Sciences*, 279, 1327-1334.
- Kazdin, A. E. (2009). Understanding how and why psychotherapy leads to change. *Psychotherapy Research*, 19, 418-428.
- Kendler, K. S., Aggen, S. H., Czajkowski, N., Roysamb, E., Tambs, K., Torgersen, S., . . . Reichborn-Kjennerud, T. (2008). The structure of genetic and environmental risk factors for DSM-IV personality disorders: A multivariate twin study. *Archives of General Psychiatry*, 65, 1438-1446.
- Kernberg, O. F. (1984). *Severe personality disorders: Psychotherapeutic strategies*. New Haven, CT: Yale University Press.
- Kingdon, D. G., Ashcroft, K., Bhandari, B., Gleeson, S., Warikoo, N., Symons, M., . . . Mehra, R. (2010). Schizophrenia and borderline personality disorder: Similarities and differences in the experience of auditory hallucinations, paranoia, and childhood trauma. *Journal of Nervous and Mental Disease*, 198, 399-403.
- Kiser, L. J., Bates, J. E., Maslin, C. A., & Bayles, K. (1986). Mother-infant play at six months as a predictor of attachment security of thirteen months. *Journal of the American Academy of Child Psychiatry*, 25, 68-75.
- Koren-Karie, N., Oppenheim, D., Dolev, S., Sher, E., & Etzion-Carasso, A. (2002). Mothers' insightfulness regarding their infants' internal experience: Relations with maternal sensitivity and infant attachment. *Developmental Psychology*, 38, 534-542.
- Kruglanski, A. W. (1989). *Lay epistemics and human knowledge: Cognitive and motivational bases*. New York, NY: Plenum.
- Kruglanski, A. W., & Webster, D. M. (1996). Motivated closing of the mind: "Seizing" and "freezing." *Psychological Review*, 103, 263-283.
- Lambert, M. (2013). The efficacy and effectiveness of psychotherapy. In M. Lambert (Ed.), *Bergin and Garfield's handbook of psychotherapy and behavior change* (6th ed., pp. 169-218). Hoboken, NJ: Wiley.
- Laporte, L., Paris, J., Guttman, H., & Russell, J. (2011). Psychopathology, childhood trauma, and personality traits in patients with borderline personality disorder and their sisters. *Journal of Personality Disorders*, 25, 448-462.
- Laranjo, J., Bernier, A., Meins, E., & Carlson, S. M. (2010). Early manifestations of children's theory of mind: The roles of maternal mind-mindedness and infant security of attachment. *Infancy*, 15, 300-323.
- Leichsenring, F., Leibing, E., Kruse, J., New, A. S., & Leweke, F. (2011). Borderline personality disorder. *Lancet*, 377, 74-84.
- Lopez-Castroman, J., Melhem, N., Birmaher, B., Greenhill, L., Kolko, D., Stanley, B., . . . Oquendo, M. A. (2013). Early childhood sexual abuse increases suicidal intent. *World Psychiatry*, 12, 149-154.
- Luyten, P. (2015). Unholy questions about five central tenets of psychoanalysis that need to be empirically verified. *Psychoanalytic Inquiry*, 35, 5-23.
- Luyten, P., & Blatt, S. J. (2011). Integrating theory-driven and empirically derived models of personality development and psychopathol-

- ogy: A proposal for DSM-V. *Clinical Psychology Review*, 31, 52-68.
- Machizawa-Summers, S. (2007). Childhood trauma and parental bonding among Japanese female patients with borderline personality disorder. *International Journal of Psychology*, 42, 265-273.
- Main, M., & Hesse, E. (1998). *Frightening, frightened, dissociated, deferential, sexualized and disorganized parental behavior: A coding system for parent-infant interactions* (6th ed.). Unpublished manual. University of California at Berkeley.
- Mansell, W. (2011). Core processes of psychopathology and recovery: "Does the Dodo bird effect have wings?" *Clinical Psychology Review*, 31, 189-192.
- Marvin, R. S., & Britner, P. A. (2008). Normal development: The ontogeny of attachment. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment theory and research* (2nd ed., pp. 269-294). New York, NY: Guilford.
- Matzke, B., Herpertz, S. C., Berger, C., Fleischer, M., & Domes, G. (2014). Facial reactions during emotion recognition in borderline personality disorder: A facial electromyography study. *Psychopathology*, 47, 101-110.
- McWilliams, N. (2011). *Psychoanalytic diagnosis: Understanding personality structure in the clinical process* (2nd ed.). New York, NY: Guilford.
- Meins, E. (1998). The effects of security of attachment and maternal attribution of meaning on children's linguistic acquisitional style. *Infant Behavior & Development*, 21, 237-252.
- Meins, E., Fernyhough, C., Fradley, E., & Tuckey, M. (2001). Rethinking maternal sensitivity: Mothers' comments on infants' mental processes predict security of attachment at 12 months. *Journal of Child Psychology and Psychiatry*, 42, 637-648.
- Meins, E., Fernyhough, C., Wainwright, R., Clark-Carter, D., Das Gupta, M., Fradley, E., & Tuckey, M. (2003). Pathways to understanding mind: Construct validity and predictive validity of maternal mind-mindedness. *Child Development Perspectives*, 74, 1194-1211.
- Meins, E., Fernyhough, C., Wainwright, R., Das Gupta, M., Fradley, E., & Tuckey, M. (2002). Maternal mind-mindedness and attachment security as predictors of theory of mind understanding. *Child Development*, 73, 1715-1726.
- Mikulincer, M. (1997). Adult attachment style and information processing: Individual differences in curiosity and cognitive closure. *Journal of Personality and Social Psychology*, 72, 1217-1230.
- Mikulincer, M., & Arad, D. (1999). Attachment working models and cognitive openness in close relationships: A test of chronic and temporary accessibility effects. *Journal of Personality and Social Psychology*, 77, 710-725.
- Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York, NY: Guilford.
- Mikulincer, M., Shaver, P. R., & Pereg, D. (2003). Attachment theory and affect regulation: The dynamics, development, and cognitive consequences of attachment-related strategies. *Motivation and Emotion*, 27, 77-102.
- Miller, D. J., Duka, T., Stimpson, C. D., Schapiro, S. J., Baze, W. B., McArthur, M. J., . . . Sherwood, C. C. (2012). Prolonged myelination in human neocortical evolution. *Proceedings of the National Academy of Sciences of the United States of America*, 109, 16480-16485.
- Mills-Koonce, W. R., Gariepy, J. L., Propper, C., Sutton, K., Calkins, S., Moore, G., & Cox, M. (2007). Infant and parent factors associated with early maternal sensitivity: A caregiver-attachment systems approach. *Infant Behavior & Development*, 30, 114-126.
- Moore, C., & Dunham, P. J. (1995). *Joint attention: Its origins and role in development*. Hillsdale, NJ: Erlbaum.
- Moss, E., Rousseau, D., Parent, S., St-Laurent, D., & Saintong, J. (1998). Correlates of attachment at school-age: Maternal reported stress, mother-child interaction and behavior problems. *Child Development*, 69, 1390-1405.
- Nagell, K., Olguin, R. S., & Tomasello, M. (1993). Processes of social learning in the tool use of chimpanzees (*Pan troglodytes*) and human children (*Homo sapiens*). *Journal of Comparative Psychology*, 107, 174-186.
- Nanni, V., Uher, R., & Danese, A. (2012). Childhood maltreatment predicts unfavorable course of illness and treatment outcome in depression: A meta-analysis. *American Journal of Psychiatry*, 169, 141-151.
- Nicol, K., Pope, M., Sprengelmeyer, R., Young, A. W., & Hall, J. (2013). Social judgement in borderline personality disorder. *PLoS One*, 8, e73440. doi: 10.1371/journal.pone.0073440
- Oppenheim, D., & Koren-Karie, N. (2009). Infant-parent relationship assessment: Parents' insightfulness regarding their young children's internal worlds. In C. H. Zeanah (Ed.), *Handbook of infant mental health* (3rd ed.). New York, NY: Guilford.
- Oppenheim, D., & Koren-Karie, N. (2013). The insightfulness assessment: Measuring the internal processes underlying maternal sensitivity. *Attachment and Human Development*, 15, 545-561.

- Out, D., Cyr, C., Pijlman, F. T. A., Beijersbergen, M. D., Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (2009). *Disconnected and Extremely Insensitive Parenting (DIP), Version 3*. Leiden, The Netherlands: Centre for Child and Family Studies, Leiden University.
- Paris, J. (2007). The nature of borderline personality disorder: Multiple dimensions, multiple symptoms, but one category. *Journal of Personality Disorders*, 21, 457-473.
- Pearce, E., Stringer, C., & Dunbar, R. I. (2013). New insights into differences in brain organization between Neanderthals and anatomically modern humans. *Proceedings of the Royal Society B: Biological Sciences*, 280, 20130168.
- Perroud, N., Salzmann, A., Prada, P., Nicastro, R., Hoeppli, M. E., Furrer, S., . . . Malafosse, A. (2013). Response to psychotherapy in borderline personality disorder and methylation status of the BDNF gene. *Translational Psychiatry*, 3, e207. doi:10.1038/tp.2012.140
- Pierro, A., & Kruglanski, A. W. (2008). "Seizing and freezing" on a significant-person schema: Need for closure and the transference effect in social judgment. *Personality and Social Psychology Bulletin*, 34, 1492-1503.
- Read, J., & Bentall, R. P. (2012). Negative childhood experiences and mental health: Theoretical, clinical and primary prevention implications. *British Journal of Psychiatry*, 200, 89-91.
- Recanati, F. (1997). Can we believe what we do not understand? *Mind & Language*, 12, 84-100.
- Rieder, C., & Cicchetti, D. (1989). Organizational perspective on cognitive control functioning and cognitive-affective balance in maltreated children. *Developmental Psychology*, 25, 382-393.
- Rogers, C. R. (1961). *On becoming a person: A therapist's view of psychotherapy*. London, UK: Constable.
- Rogers, C. R., & Dymond, R. F. (1954). *Psychotherapy and personality change: Coordinated research studies in the client-centered approach*. Chicago, IL: University of Chicago Press.
- Ruffman, T., Slade, L., & Crowe, E. (2002). The relation between children's and mothers' mental state language and theory-of-mind understanding. *Child Development*, 73, 734-751.
- Russell, B. (1940). *An inquiry into meaning and truth*. London, UK: Allen & Unwin.
- Sallet, J., Mars, R. B., Noonan, M. P., Andersson, J. L., O'Reilly, J. X., Jbabdi, S., . . . Rushworth, M. F. (2011). Social network size affects neural circuits in macaques. *Science*, 334, 697-700.
- Sartre, J.-P. (1946). *L'existentialisme est un humanisme*. Paris, France: Editions Nagel.
- Schechter, D. S., Myers, M. M., Brunelli, S. A., Coates, S. W., Zeanah, C. H., Davies, M., . . . Liebowitz, M. R. (2006). Traumatized mothers can change their minds about their toddlers: Understanding how a novel use of videofeedback supports positive change of maternal attributions. *Infant Mental Health Journal*, 27, 429-447.
- Schiavone, F. L., & Links, P. S. (2013). Common elements for the psychotherapeutic management of patients with self injurious behavior. *Child Abuse and Neglect*, 37, 133-138.
- Schiborr, J., Lotzin, A., Romer, G., Schulte-Markwort, M., & Ramsauer, B. (2013). Child-focused maternal mentalization: A systematic review of measurement tools from birth to three. *Measurement*, 46, 2492-2509.
- Schmideberg, M. (1959). The borderline patient. In S. Arieti (Ed.), *American handbook of psychiatry* (pp. 398-416). New York, NY: Basic Books.
- Scott, L. N., Levy, K. N., Adams, R. B., Jr., & Stevenson, M. T. (2011). Mental state decoding abilities in young adults with borderline personality disorder traits. *Personality Disorders*, 2, 98-112.
- Senju, A., & Csibra, G. (2008). Gaze following in human infants depends on communicative signals. *Current Biology*, 18, 668-671.
- Sharp, C., Ha, C., Carbone, C., Kim, S., Perry, K., Williams, L., & Fonagy, P. (2013). Hypermentalizing in adolescent inpatients: Treatment effects and association with borderline traits. *Journal of Personality Disorders*, 27, 3-18.
- Sharp, C., Pane, H., Ha, C., Venta, A., Patel, A. B., Sturek, J., & Fonagy, P. (2011). Theory of mind and emotion regulation difficulties in adolescents with borderline traits. *Journal of the American Academy of Child and Adolescent Psychiatry*, 50, 563-573.
- Sharp, C., & Vanwoerden, S. (2014). Social cognition: Empirical contribution. The developmental building blocks of psychopathic traits: Revisiting the role of theory of mind. *Journal of Personality Disorders*, 28, 78-95.
- Shiner, R. L. (2009). The development of personality disorders: Perspectives from normal personality development in childhood and adolescence. *Development and Psychopathology*, 21, 715-734.
- Siever, L. J. (2008). Neurobiology of aggression and violence. *American Journal of Psychiatry*, 165, 429-442.
- Skodol, A. E., Gunderson, J., Shea, M. T., McGlashan, T., Morey, L. C., Sanislow, C., . . . Stout, R. L. (2006). The Collaborative Longitudinal Personality Disorders Study

- (CLPS): Overview and implications. *Journal of Personality Disorders*, 19, 487-504.
- Slade, A. (2005). Parental reflective functioning: An introduction. *Attachment and Human Development*, 7, 269-281.
- Slade, A., Grienemberger, J., Bernbach, E., Levy, D., & Locker, A. (2005). Maternal reflective functioning, attachment, and the transmission gap: A preliminary study. *Attachment and Human Development*, 7, 283-298.
- Slaughter, V., Peterson, C. C., & Carpenter, M. (2008). Maternal talk about mental states and the emergence of joint visual attention. *Infancy*, 13, 640-659.
- Smith, T. M., Tafforeau, P., Reid, D. J., Pouech, J., Lazzari, V., Zermeno, J. P., . . . Hublin, J. J. (2010). Dental evidence for ontogenetic differences between modern humans and Neanderthals. *Proceedings of the National Academy of Sciences of the United States of America*, 107, 20923-20928.
- Snygg, D., & Combs, A. W. (1949). *Individual behavior: A new frame of reference for psychology*. New York, NY: Harper & Brothers.
- Solomon, J., & George, C. (1999). The caregiving system in mothers of infants: A comparison of divorcing and married mothers. *Attachment and Human Development*, 1, 171-190.
- Specht, M. W., Chapman, A., & Cellucci, T. (2009). Schemas and borderline personality disorder symptoms in incarcerated women. *Journal of Behavior Therapy and Experimental Psychiatry*, 40, 256-264.
- Sperber, D., Clement, F., Heintz, C., Mascaro, O., Mercier, H., Origgi, G., & Wilson, D. (2010). Epistemic vigilance. *Mind & Language*, 25, 359-393.
- Sperber, D., & Wilson, D. (1995). *Relevance: Communication and cognition* (2nd ed.). Malden, MA: Blackwell.
- Squire, L. R. (2004). Memory systems of the brain: A brief history and current perspective. *Neurobiology of Learning and Memory*, 82, 171-177.
- Stepp, S. D., Olino, T. M., Klein, D. N., Seeley, J. R., & Lewinsohn, P. M. (2013). Unique influences of adolescent antecedents on adult borderline personality disorder features. *Personality Disorders*, 4, 223-229.
- Sylvia, L. G., Hay, A., Ostacher, M. J., Miklowitz, D. J., Nierenberg, A. A., Thase, M. E., . . . Perlis, R. H. (2013). Association between therapeutic alliance, care satisfaction, and pharmacological adherence in bipolar disorder. *Journal of Clinical Psychopharmacology*, 33, 343-350.
- Tackett, J. L., Balsis, S., Oltmanns, T. F., & Krueger, R. F. (2009). A unifying perspective on personality pathology across the life span: Developmental considerations for the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders*. *Development and Psychopathology*, 21, 687-713.
- Tackett, J. L., Kushner, S. C., Josephs, R. A., Harden, K. P., Page-Gould, E., & Tucker-Drob, E. M. (2014). Hormones: Empirical contribution. Cortisol reactivity and recovery in the context of adolescent personality disorder. *Journal of Personality Disorders*, 28, 25-39.
- Tackett, J. L., & Sharp, C. (2014). A developmental psychopathology perspective on personality disorder: Introduction to the special issue. *Journal of Personality Disorders*, 28, 1-4.
- Tasca, G. A., & Lampard, A. M. (2012). Reciprocal influence of alliance to the group and outcome in day treatment for eating disorders. *Journal of Counseling Psychology*, 59, 507-517.
- Taumoepeau, M., & Ruffman, T. (2006). Mother and infant talk about mental states relates to desire language and emotion understanding. *Child Development*, 77, 465-481.
- Teicher, M. H., & Samson, J. A. (2013). Childhood maltreatment and psychopathology: A case for ecophenotypic variants as clinically and neurobiologically distinct subtypes. *American Journal of Psychiatry*, 170, 1114-1133.
- Tomasello, M. (1999). *The cultural origins of human cognition*. Cambridge, MA: Harvard University Press.
- Tomasello, M. (2008). *Origins of human communication*. Cambridge, MA: MIT Press.
- Tomasello, M. (2014). *A natural history of human thinking*. Cambridge, MA: Harvard University Press.
- Tomasello, M., & Call, J. (1997). *Primate cognition*. Oxford, UK: Oxford University Press.
- Torgersen, S., Lygren, S., Oien, P. A., Skre, I., Onstad, S., Edvardsen, J., . . . Kringlen, E. (2000). A twin study of personality disorders. *Comprehensive Psychiatry*, 41, 416-425.
- Unoka, Z., Fogd, D., Fuzy, M., & Csukly, G. (2011). Misreading the facial signs: Specific impairments and error patterns in recognition of facial emotions with negative valence in borderline personality disorder. *Psychiatry Research*, 189, 419-425.
- van den Heuvel, T. J., Derksen, J. J., Eling, P. A., & van der Staak, C. P. (2012). An investigation of different aspects of overgeneralization in patients with major depressive disorder and borderline personality disorder. *British Journal of Clinical Psychology*, 51, 376-395.
- van IJzendoorn, M. H., & Bakermans-Kranenburg, M. J. (2008). The distribution of adult attachment representations in clinical groups: A meta-analytic search for patterns of attachment in 105 AAI studies. In H.

- Steele & M. Steele (Eds.), *Clinical applications of the Adult Attachment Interview* (pp. 69-96). New York, NY: Guilford.
- van IJzendoorn, M. H., Scheungel, C., & Bakermans-Kranenburg, M. J. (1999). Disorganized attachment in early childhood: Meta-analysis of precursors, concomitants and sequelae. *Development and Psychopathology*, 22, 225-249.
- van Schaik, C. P., & Burkart, J. M. (2011). Social learning and evolution: The cultural intelligence hypothesis. *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences*, 366, 1008-1016.
- Wampold, B. E., Budge, S. L., Laska, K. M., Del Re, A. C., Baardseth, T. P., Fluckiger, C., . . . Gunn, W. (2011). Evidence-based treatments for depression and anxiety versus treatment-as-usual: A meta-analysis of direct comparisons. *Clinical Psychology Review*, 31, 1304-1312.
- Wampold, B. E., Mondin, G. W., Moody, M., Stich, F., Benson, K., & Ahn, H. N. (1997). A meta-analysis of outcome studies comparing bona fide psychotherapies: Empirically, "all must have prizes." *Psychological Bulletin*, 122, 203-215.
- White, S. F., Clanton, R., Brislin, S. J., Meffert, H., Hwang, S., Sinclair, S., & Blair, R. J. (2014). Reward: Empirical contribution. Temporal discounting and conduct disorder in adolescents. *Journal of Personality Disorders*, 28, 5-18.
- Widiger, T. A., De Clercq, B., & De Fruyt, F. (2009). Childhood antecedents of personality disorder: An alternative perspective. *Development and Psychopathology*, 21, 771-791.
- Widiger, T. A., Lynam, D. R., Miller, J. D., & Oltmanns, T. F. (2012). Measures to assess maladaptive variants of the five-factor model. *Journal of Personality Assessment*, 94, 450-455.
- Widom, C. S., Czaja, S. J., & Paris, J. (2009). A prospective investigation of borderline personality disorder in abused and neglected children followed up into adulthood. *Journal of Personality Disorders*, 23, 433-446.
- Wilson, D., & Sperber, D. (2012). *Meaning and relevance*. Cambridge, UK: Cambridge University Press.
- Wilson, D. S. (2013). Human cultures are primarily adaptive at the group level. *Cliodynamics*, 4, 102-138.
- Wilson, D. S., Hayes, S. C., Biglan, A., & Embry, D. D. (2014). Evolving the future: Toward a science of intentional change. *Behavioral and Brain Sciences*, 37, 395-460.
- Wilson, D. S., & Wilson, E. O. (2007). Rethinking the theoretical foundation of sociobiology. *Quarterly Review of Biology*, 82, 327-348.
- Wingenfeld, K., Schaffrath, C., Rullkoetter, N., Mensebach, C., Schlosser, N., Beblo, T., . . . Meyer, B. (2011). Associations of childhood trauma, trauma in adulthood and previous-year stress with psychopathology in patients with major depression and borderline personality disorder. *Child Abuse & Neglect*, 35, 647-654.
- Zanarini, M. C., Frankenburg, F. R., Reich, D. B., Marino, M. F., Lewis, R. E., Williams, A. A., & Khera, G. S. (2000). Biparental failure in the childhood experiences of borderline patients. *Journal of Personality Disorders*, 14, 264-273.
- Zanarini, M. C., Frankenburg, F. R., Reich, D. B., Silk, K. R., Hudson, J. I., & McSweeney, L. B. (2007). The subsyndromal phenomenology of borderline personality disorder: A 10-year follow-up study. *American Journal of Psychiatry*, 164, 929-935.
- Zanarini, M. C., Laudate, C. S., Frankenburg, F. R., Wedig, M. M., & Fitzmaurice, G. (2013). Reasons for self-mutilation reported by borderline patients over 16 years of prospective follow-up. *Journal of Personality Disorders*, 27, 783-794.