

An Evolutionary and Developmental Science Framework for Integrating Attachment,
Mentalization, and Mindfulness: Implications for Religious Practice and Moral Development

By

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Bonding is very important. Mentally, the method of bonding is not very clear. But physically, it is simple: babies receive bodily touching from their mothers. Physical touch is a very crucial factor for healthy development, including the development of brain cells in the first few weeks. In that moment of bodily touch, if something is negative, it is very harmful and damaging to the development of the brain. It has nothing to do with religion. It is simply that, as human beings, our physical condition requires touch to develop fully.

The Dalai Lama, 1997, 109¹

INTRODUCTION

In this dissertation, I present evolutionary and developmental science models that integrate attachment theory and mentalization theory with mindfulness meditation. In recent decades, there has been an explosion of clinical, scientific, and popular interest in the Buddhist practice of mindfulness meditation. Mindfulness meditation has been examined as a tool for reducing stress and pain in health psychology (Kabat-Zinn, 1990), for treating anxiety, depression, and somatic disorders in clinical psychology (Linehan, 1993; Segal, Williams, and Teasdale, 2013), and for exploring brain functioning and consciousness in neuroscience (e.g., Lutz et al., 2007; Tang et al., 2015).

Mindfulness has reached critical mass in the American popular consciousness, too. In 2014, *Time Magazine* asserted that America was in the midst of a “Mindfulness Revolution” (Pickert, 2014). Almost 25 million Americans engaged in some form of meditation or contemplative practice in 2012 (Clarke et al., 2015). University courses exploring mindfulness practices and Buddhist philosophy have sprung up on campuses across America and Europe, and

¹ In Anne Hubbell Maiden and Edie Farwell, *The Tibetan Art of Parenting: From Before Conception Through Early Childhood* (Boston, MA: Wisdom Publications, 1997), 109; cited in Aronson, 2004, 184.

major university research centers and international institutes have been established. Mindfulness authors grace the covers of major popular magazines like *Time* and sit on the couches of major television personalities like Oprah Winfrey.²

While many psychology researchers have investigated mindfulness meditation's utility as a stand-alone or adjunct treatment for anxiety or depression, fewer have addressed how mindful awareness, the capacity cultivated within meditative practices, arises within human development and is affected by the quality of early parent-infant attachment bonds. Nor have many theorists examined how mindful awareness is related to other early psychological capacities, such as "mentalization," the ability to reflect upon the thoughts and feelings of ourselves and others. To date, few Buddhist studies scholars have placed Buddhist doctrines and practices within contemporary religious studies models of neurobiological and cultural evolution. Finally, only a few researchers have examined how early attachment bonds affect later moral development and ethical decision-making over the lifespan.

In this dissertation I aim to help fill this void. I have three central premises. First, Buddhist meditative practices can be located within and integrated with developmental and evolutionary models of human functioning. Mindful awareness relies on basic neurobiological mechanisms and psychological capacities that are shaped by the quality of the parent-infant attachment bond. Deficits in these mechanisms and capacities can account for problems encountered in meditation. Second, I contend that Buddhism, like all other human religions, builds upon attachment-related processes that have evolved over millions of years. Buddhist philosophies, rituals, and practices are suffused with attachment-related themes and mechanisms.

² <http://time.com/1556/the-mindful-revolution/> ;<http://www.oprah.com/own-super-soul-sunday/What-It-Means-to-Be-Mindful-Video>.

Third, early human attachment bonds have a profound effect on individuals' moral development and ethical decision-making. Buddhist meditative practices have an important role to play in our globalized, interdependent world in helping to extend empathy to others.

To demonstrate these theses, in the main body of this dissertation, I will explicate and then integrate three psychological models: John Bowlby's attachment theory about developmental psychology; Peter Fonagy's mentalization-based therapy derived from psychoanalysis and developmental science; and Buddhist mindfulness meditation theories. In the final chapter and the Conclusion, I will situate these three psychological models within evolutionary neuroscience, moral philosophy and psychology, and sociology and religious studies models. I draw on Paul MacLean's triune brain model from evolutionary neuroscience; Darcia Narvaez's Triune Ethics model of moral development from moral psychology; Robert Bellah's religion in human evolution model from the sociology of religion; and Martha Nussbaum's analysis of cosmopolitanism from moral and political philosophy.

Statement of the Problem: Puzzles in the Psychotherapeutic Outcome Literature

My initial interest in these topics came from noticing an intriguing puzzle in the recent research literature concerning the precise relations between psychoanalysis and psychotherapy and the new mindfulness-based therapies. Psychoanalysis and psychotherapy, on the one hand, and mindfulness therapies, on the other, appear to be based on very different, even antithetical, conceptions of how therapeutic change occurs and how best to facilitate that change. Yet surprisingly, recent outcome research appears to show that both styles of therapy can successfully treat a range of clinical and health disorders (e.g., Ruth and Fonagy, 2005; Didonna, 2009; Shedler, 2010).

This puzzle has been most conspicuous in the recent debates between so-called “second” and “third wave” cognitive behavioral therapies (CBT) (see Hofmann et al., 2010; Herbert and Forman, 2011). Traditional second wave CBT theorists focus on changing *mental content*. CBT emphasizes the primacy of cognition in mediating psychological disorder (Beck, 2005). According to this school, negative emotions and destructive behaviors are the product of maladaptive beliefs and cognitive distortions. Through a collaborative process, the CBT therapist and client identify dysfunctional thoughts of the client, test their accuracy against reality through rational analysis, and then revise or restructure the patient’s cognitive content. CBT theorists presume that more accurate and realistic beliefs about the self, the world, and the future lead to increased coping and resiliency and decreased emotional distress and reactivity (Butler, Chapman, Forman, and Beck, 2006; Hofmann, Asmundson, and Beck, 2013).

In contrast, “third wave” mindfulness meditation therapies focus on changing *mental processes*. Mindfulness therapies like Mindfulness-Based Stress Reduction (Kabat-Zinn, 1990) and Mindfulness-Based Cognitive Therapy (Segal, Williams, and Teasdale, 2013) combine Western psychology with Buddhist philosophy and meditative techniques. Change, according to this school, is said to come not from changing negative thoughts about the self and world, but by “changing our relationship” with our mind. Through nonjudgmentally attending to and accepting our present, immediate experience in meditation, mindfulness therapy practitioners decrease depression and anxiety by moving toward and decentering or dis-identifying with painful thoughts and emotions, rather than confronting them or pushing them away (Segal, Williams, and Teasdale, 2013). These “metacognitive awareness” processes mediate therapeutic changes hypothesized to occur in attentional control and affective regulation (Hölzel et al., 2011). Finally, more advanced stages of meta-awareness are said to facilitate the dissolution of the experience of

the self as a static substance, leading to inner freedom, compassion, and equanimity (Kornfield, 1993; Engler, 2003).

Muddying this picture even more are the focuses in psychoanalysis and psychodynamic psychotherapy on *insight into the unconscious*, on *early development*, and on the *therapeutic relation*. Freud (1912) and his successors have maintained that human maturation and lasting psychological change requires verbal articulations and reconstructions of unconscious, unelaborated, and immature yearnings and narratives about the self, such as wishes, desires, “pathogenic” beliefs, or personal myths (Kris, 1956; Weiss and Sampson, 1986). These unconscious fantasies derive from constitutional factors and social interactions with our primary caregivers, and serve as “stereotype plates” for our behavior in interpersonal relations with others today, repeating again and again (Freud 1912, 97). The “transference enactment” in the analytic relationship evokes these unconscious yearnings and myths, as the analysand projects early templates onto the analyst and perceives the unfolding of the analytic relationship in these terms. Analysis offers the chance to gain insight into the operation of unconscious myths and to “put words” to and revise them through interpretation and creative reconstruction. For psychoanalysts, it is the insight into and the working through of transference material within the analytic relationship that provides maturity, personal freedom, and lasting change (Gabbard and Westen, 2003; Shedler, 2010).

Thus, there appear to be contradictions between the approaches, philosophies, and techniques of these three models. Second wave CBT and third wave mindfulness therapies have a basic and fundamental disagreement on the nature of therapeutic action and change: CBT changes mental content, while mindfulness therapies change mental processes. Psychodynamic psychotherapies and mindfulness therapies appear to have an even broader range of fundamental

differences. Psychodynamic psychotherapies, on the one hand, appear to be relational, intersubjective, grounded in development, conscious- and unconscious-oriented, reflective, elaborative, verbally and narratively articulated, and past/present/future-oriented. Mindfulness therapies, on the other hand, appear intrapersonal, non-developmental, conscious-oriented, non-reflective, un-elaborative, non-conceptual/non-linguistic, bodily- as well and mentally-focused, and present-oriented.

However, empirical research appears to support the efficacy of all three approaches for many of the same affective, anxiety, and somatic psychological disorders (e.g., Butler, Chapman, Forman, and Beck, 2006; Shedler, 2010; Chiesa and Serretti, 2010). Moreover, growing neuroscientific research suggests that both psychotherapy and mindfulness approaches effect physical changes in the brain, sometimes in the same but sometimes in different neural structures and networks (Fotopoulou, Pfaff, and Conway, 2012; Hölzel, et al., 2011). Genuine conceptual, clinical, and neurobiological differences thus exist between the three models in how therapeutic change is conceived to occur.

How might we understand and integrate all the conceptual, clinical, and neuroscientific disparities and contradictions we see in the research literatures?

Attachment and Mentalization

I answer by appealing to contemporary accounts of the neurobiological and psychological evolution of the human being and brain. The disparities and contradictions in the psychological research literatures disappear when viewed through the lenses of human phylogeny and ontogeny. We see disagreement on the nature of therapeutic action and change and disparities in the therapeutic and neuroscientific literatures because psychotherapy and mindfulness meditation

engage with *different* neural structures and have invoked *different* mechanisms in the brain. These different neural mechanisms have evolved in *different* periods of mammalian and human phylogenetic history. Therefore, in order to understand disparities in therapeutic action and outcomes, we need to better understand two chronological lines: the evolution of the human being over the last two million years, and the neurobiological and psychological development of human children over the first six years of life.

Two psychological models of human development and psychotherapy, one old and one new, can help us gain this broader perspective: John Bowlby's attachment theory and Peter Fonagy's mentalization theory. Both theorists have studied fundamental cognitive and affective processes of human functioning and development, both were (and in Fonagy's case, are) grounded in the empirical and biological literatures, and both have located their theories within the broad sweep of human evolution. Fascinatingly, both models also derive historically from psychoanalysis, and continue to use psychoanalytic models, theories, and techniques.

First, in the 1940s the British psychoanalyst and child psychiatrist, John Bowlby (1907–1990), synthesized his psychoanalytic training with ethology and cognitive psychology to found *attachment theory*, one of the most prolific research models in psychology during the last fifty years (Cassidy and Shaver, 2008). Bowlby believed human beings have a universal need to form close attachment bonds. He conceived attachment as an evolved, bio-behavioral system that protects children from danger by motivating them to seek physical proximity to “stronger and wiser” primary caregivers in times of threat or separation (Bowlby, 1969). A caring attachment figure (usually the mother) acts as both a “safe haven” for the child to return to and a “secure base” from which the child can explore novelties once the child has achieved “felt security” (Sroufe and Waters, 1977). Bowlby hypothesized that interpersonal experiences with the

attachment figure are stored by the child as “internal working models” (IWMs). These are sets of implicit, cognitive-affective schemas about the availability of others and one’s social self-worth. IWMs guide interpersonal behavior throughout life (Bretherton and Munholland, 2008). Empirical support for Bowlby’s theories was provided by his collaborator, Mary Ainsworth. She investigated differences in the quality of interactions between infant and mother, yielding four infant attachment types: secure, avoidant, ambivalent, and disorganized (Ainsworth et al., 1978; Main and Solomon, 1990). Bowlby and subsequent researchers have investigated how attachment influences human functioning “from the cradle to the grave” (Bowlby, 1988; Main, 1991).

Second, *mentalization theory* and *mentalization-based therapy* were created by Peter Fonagy, the Freud Memorial Professor of Psychoanalysis at University College London, and his colleagues. Fonagy synthesized adult attachment research on metacognition with developmental psychology and object relations psychoanalysis. Fonagy defines mentalization as the ability to interpret the behavior of self and others in terms of thoughts, feelings, beliefs, desires, goals, and reasons. Mentalization theory is a relational model, as the capacity to mentalize is a developmental achievement which emerges within secure, emotionally-attuned infant-caregiver relationships (Fonagy, et al., 2002). The parent’s task is to “keep the infant’s mind in mind,” or attune to, reflect upon, and articulate the infant’s inner world back to the infant. Adequate mentalizing of the child’s inner world lays the foundation for the child to understand that our mental experiences of self and others are representations of reality, *not* reality itself. This is a cornerstone for the development of attentional control, affect regulation, language skills, and, by age six, extended autobiographical narratives of self and world. Inadequate parental attunement with the child results in neural and functional deficits in mentalization and the re-emergence of

“pre-mentalization” states like “psychic equivalence” (equating internal and external reality) and “pretend mode” (separating internal and external reality), associated with personality and affective disorders (Bateman and Fonagy, 2012). Mentalization-based therapists seek to increase the client’s mentalization capacity within a secure and emotionally-attuned relationship, recapitulating a secure attachment relation between mother and child (Allen, Fonagy, and Bateman, 2008).

Attachment, Mentalization, and Mindfulness in Human Evolution and Development

My first central thesis derives directly from these three constructs. In the next six chapters and the Conclusion, I will demonstrate that attachment, mentalization, and mindful awareness are psychological capacities that can be located within models of human evolution and human development. Briefly stated, attachment processes came first in mammalian neuroevolution (some 200 million years ago), while mentalization capacities likely developed in our *Homo sapiens* ancestors between 100 to 200,000 years ago (MacLean 1990). I will hypothesize in Chapter VI that the mindful awareness capacities cultivated in Buddhist meditation and other contemplative traditions only fully entered human cultural history with the rise of the so-called “Axial Age” religions in the first millennium B.C.E. (see below) (Bellah, 2011).

Moreover, I will demonstrate in Chapter V that ontogeny follows phylogeny in regards to these psychological capacities. Early attachment relations in the first several years of life have a profound effect on the basic cognitive, affective, and social neuro-development of the child, “all the way down” to the genetic and neurochemical levels. Mentalization capacities rely on higher-level neocortex areas of the brain and develop most fully between the ages of four and six. Early

attachment relations profoundly affect the development of mentalization (Fonagy et al., 2012). I will also hypothesize in Chapter V that mindful awareness relies on high-level attentional and metacognitive capacities that likely only develop in an individual in adolescence. But as with mentalization, early (and present) attachment relations profoundly affect the quality of mindful awareness capacities cultivated in meditation (Hart, 2011). Finally, I will contend in Chapters V and VI that psychotherapy and the various mindfulness meditation practices achieve their results by improving the neural and psychological functioning of the basic attentional, affect regulation, and mentalization processes that developed within the early attachment bond.

Attachment and Religion

A second central issue that I will address in this dissertation is the relation between human attachment and religion. Throughout the last one hundred years, researchers and scholars in psychoanalysis and the academic psychology of religion have explored developmental and attachment-related themes in human religious practice and experience (see Wulff, 1997; Jonte-Pace, 2001). For example, the founder of psychoanalysis, Sigmund Freud, presented several interpretations of the psychogenic roots of religion. These included his account of religion as an illusionary projection of human oedipal longings for an omnipotent and idealized father onto the cosmos (1927); and his interpretation of the “oceanic feeling” experienced in Hindu meditation as a regression to a psychological state of unbounded and omnipotent pre-oedipal fusion with the mother (Freud 1930; Parsons 1999).

In the 1970s the Argentinian-American object relations psychoanalyst, Ana-Maria Rizzuto (1979), examined the role of the “God representation” in human psychodynamic functioning. Rizzuto maintained that children construct an unconscious, living representation of God from their family interactions (including the mother and the entire extended family beyond

just the father). The God representation can serve punitive or compensatory functions in the child's psyche, depending on the child's family dynamics. It continues to evolve and be used as a dynamic construct over the lifespan. Next, since the 1990s, attachment researchers like Pehr Granqvist and Lee Kirkpatrick (Kirkpatrick, 2005; Granqvist and Kirkpatrick, 2008) have conducted empirical research to examine the relations between attachment and religion. In their models, mental representations of the omnipotent and omnipresent God of the Western monotheistic religions serve attachment-related functions for religious devotees. God is a "stronger and wiser" figure that provides devotees with comfort and love during times of stress (safe haven) and with strength and support to deal with life's challenges (secure base).

Finally, Gay and Kreiselmaier (2016) have recently examined the role of attachment themes in religion from a broad perspective of neurobiological, cultural, and religious evolution. In their model, Buddhism is identified as an Axial Age religion (Bellah, 2011). First proposed by the German philosopher Karl Jaspers (1953), the Axial Age (ca. 800 to 200 B.C.E.) is purported to be a "pivotal" period in human history in which many of the "breakthroughs" first occurred in the social, intellectual, scientific, and religious forms of life we recognize today. Much of their chapter is focused on exploring attachment-related themes found in the Western Axial and post-Axial monotheistic religions of Judaism, Christianity, and Islam. These include personal I-Thou relations between individuals and a creator Father God, a Covenant between God and his people, communication with the divine through prayer, rituals, and contemplation, and extending love and empathy to others beyond one's race or religion (Gay and Kreiselmaier, 2016).

What Rizzuto's, Granqvist and Kirkpatrick's, and Gay and Kreiselmaier's analyses have in common is that human religion is attachment-related, "through and through." Religious doctrines, practices, and experiences are suffused with attachment-related themes, constructs,

mechanisms, and dynamics. The cosmologies, narratives, devotions, rituals, and meditative practices of Axial Age (and all other) religions have built upon the foundations of love, attunement, protection, care, and support fostered in human attachment and familial bonds, which have evolved over the eons.

Yet exploring attachment themes in Buddhism does present another interesting puzzle for this dissertation. As is well-known, Buddhist cosmologies and philosophies do not have a Father or Mother God who created the universe and to whom and with whom individuals pray, worship, covenant with, and commune (Gethin, 1998). Moreover, Buddhist philosophies and practices promote “non-attachment” to doctrines, experience, and even a reified sense of self as part of the path to wisdom and liberation (*nirvana*) from the endless cycles of birth and rebirth (*samsara*). It might appear that Buddhism is an outlier to the Western monotheistic religions and even to Ancient Greek and South and East Asian polytheistic religions, who all have some kind of creator God, high gods, or Absolute with whom we commune and seek protection, love, and support.

However, I will contend in this dissertation that Buddhist philosophies and practices are replete with attachment-related themes and experiences, just like all other religions. Buddhism does not have a creator Father God. But traditional Buddhists do “take refuge” in the Buddha, the *Sangha* (religious community), and the *Dharma* (teachings and path). They perform devotional rituals to the Buddha, have attachment relations with their *roshi*/teacher/guru, and practice lovingkindness meditations that extend love to all sentient beings in the universe. Attachment themes also show up in traditional Tibetan child rearing practices and within the staff-children relations in a northern Indian children’s community, which I will present in Chapter V.

Moreover, I will argue in Chapter IV and V that a careful reading of the Buddhist texts indicates that Buddhist “non-attachment” is not the same as “no attachment” or “detachment” in Western psychology (Aronson, 2004). Non-attachment is defined as a quality of “non-clinging” or decentering while in the midst of experience, including within attachment relations. Even for ascetic celibate monks, the emphasis is to non-attach rather than to detach or dissociate from experience.

Yet despite these clarifications, it is still the case that attachment in the psychological sense and non-attachment in the Buddhist sense are not the same (Aronson, 2004). A focus of Chapter V will be to map attachment security, mentalization, and mindfulness metacognitive awareness processes within contemporary developmental science models, and then analyze their dynamic developmental and contextual interactions. In Chapter VI, I will also seek to demonstrate how positive early attachment relations, as well as present communal rituals and relationships in the *Sangha*, can support and lay a foundation for spiritual attainments along the Buddhist path, even for secular mindfulness practitioners.

Attachment and Moral Development

Finally, my third central argument in this dissertation is that religious and Buddhist studies theorists can benefit from an engagement with contemporary models of moral psychology. In Chapter VI, I will describe the moral psychology research model of Darcia Narvaez, which she calls the Triune Ethics Theory (Narvaez, 2014). Her model draws upon the attachment theory, developmental science, and evolutionary neuroscience models that I present in this dissertation. Narvaez’s basic contention is that the quality of early attachment relations affects the development of an individual’s moral sensibilities and the capacity to experience

empathy for others. Positive and loving early caregiving experiences cultivate a prosocial morality and empathy. Neglectful or abusive early caregiving fosters a fearful or protectionist morality and deficits in empathy.

In the Conclusion, I will relate Narvaez's moral psychology model and Buddhist ethical cultivation practices to the necessity of cultivating a cosmopolitan attitude of empathy and respect for others in our globalized, multicultural, and interdependent world (Nussbaum, 1997, 2010, 2012). Buddhist meditative practices have an important role to play in today's perilous political times by helping us to extend empathy to the other of our society and to other races, nations, and religions around the world.

Brief Historical Survey of Psychological, Psychoanalytic, and Pastoral Theological Investigations of Buddhist Meditation

A comparison of this approach with previous investigations of the intersections between psychology and Buddhism will help highlight the benefits that I believe the phylogenetic and ontogenetic approaches of this dissertation will provide. As has been extensively documented, academic psychologists, psychoanalysts, and pastoral theologians have a long and complicated history with Buddhist thought and practice (see Rubin, 1996; Wulff, 1997; Jonte-Pace and Parsons, 2001; Parsons 1999, 2009; Safran, 2003; McNamara, 2006; Gay, 2009a; Harrington and Dunne, 2015).

First, in academic psychology William James examined the psychological processes of South and East Asian meditative practices in his seminal work, *The Varieties of Religious Experience* (1902). James argued against "medical materialists" that attempted to explain away religion as a product of organic disturbance. He also maintained that the essence of religion lay

not in the dogmatic theologies and liturgies of institutional religion, but in the private, individual mystical experiences of a MORE beyond the phenomenal world.

According to Wulff (1996, 29), the field of psychology of religion declined in America in the 1930s to 1950s with the rise of behaviorism in academic psychology, but made a comeback in the 1950s and 1960s. During these decades, researchers conducted psychophysiological investigations (e.g., changes in blood pressure and brain waves) of yoga, Zen, and transcendental meditation practitioners. Harvard researchers also conducted famous experiments on the effects of psychedelic drugs like LSD (Wulff, 1997, 177-185).

The last three decades have seen a dramatic increase in scientific investigations of religious experience, using new technologies in genetics, molecular biology, and cognitive science (Wulff, 1997; McNamara, 2006). For example, cognitive science researchers (Boyer, 2001; Atran, 2002) have attempted to explain religious experience as by-products of cognitive modules “hard-wired” through evolution. Genetics researchers have attempted to locate a “God gene” that predisposes believers toward mystical experiences (Hamer, 2004), and neurologists have sought the same in temporal lobe abnormalities (Persinger, 1987). As discussed above, attachment researchers have conducted empirical research examining the connections between attachment relations and individuals’ God representations and psychological functioning (Granqvist and Kirkpatrick, 2008). Yet as I will discuss below, critics have been less than satisfied with these reductionistic investigations (e.g., Meador, 2006; Brown, 2006; Rizzuto, 2009).

Finally, in the last fifteen years the neuroscientific investigation of Buddhist meditation has exploded in interest. Researchers appear to be converging toward the elucidation of the

major neurocognitive mechanisms that may underlie mindfulness, such as attentional control and emotional regulation processes (Hölzel et al., 2011; Tang, Hölzel, and Posner, 2015). I will discuss this research in detail in Chapter IV.

Second, psychoanalytic theorists also took an early interest in Asian religions and religious experience, beginning with its founder, Sigmund Freud. As mentioned above, Freud (1930) interpreted the “oceanic feeling” of a union with eternity experienced through Hindu meditation by the novelist, Romain Rolland, as a regression to the residues of “primary narcissism.” He defined this as a psychological state of unbounded and omnipotent pre-Oedipal fusion with the mother (Freud 1930; Parsons 1999). Other early psychoanalysts tended to pathologize religious experience. The “paradigmatic” example of this is Franz Alexander’s (1931) depiction of Buddhist meditation as “a regressive movement which ignites stages of pathology (from depression to catatonia), culminating in the nirvanic return to intrauterine existence” (Parsons, 2001, 233).

In the 1950s and 1960s, humanistic psychoanalysts like Erich Fromm and Karen Horney took a sympathetic view of Buddhist meditation and engaged in dialogue with Zen Buddhist scholars, such as D. T. Suzuki (Fromm, 1950; Fromm et al., 1960; Horney, 1945). Fromm explored how Buddhist meditation could facilitate authenticity and freedom in our authoritarian and consumeristic age, while Horney investigated links between Zen “wholeheartedness” and non-judgmental therapeutic listening during psychoanalysis (see Harrington and Dunne, 2015; Helderman, 2015, 2016). In a parallel tradition, the analytical psychologist Carl Jung corresponded with Suzuki and other Buddhist scholars, and even wrote introductions and analyses to translations of several Buddhist texts, such as the *Tibetan Book of the Dead* (Jung, 1927).

As I will discuss in Chapters IV and V, in the last few decades the subfield of psychoanalysis and Buddhism has seen a major resurgence, as the Buddhist and mindfulness traditions have grown in prominence. Numerous books have examined the integration of these fields (e.g., Epstein, 1995; Rubin, 1996; Safran, 2003; Aronson, 2004; Magid, 2005; Jennings, 2010). The works of these scholars often demonstrate a level of sophistication about Buddhist doctrines, languages, and meditative practices not seen in earlier periods (Harrington and Dunne, 2015; Helderman, 2015, 2016).

Third and finally, the field of pastoral theology and counseling has gone through its own changes in relation to its dialogue with psychology and with Buddhism. For the first three decades of the twentieth century, pastoral theology and counseling were informed by psychoanalytic theories, Jungian analytic psychology, and William James' descriptive psychology of religion (Wulff, 1997; Jonte-Pace and Parsons, 2001). In the 1940s and 1950s, the Christian theologian Paul Tillich conducted an intellectual exchange with psychoanalysts, pastoral counselors, and other social scientists. They examined depth psychology approaches to sin, guilt, and transcendence (Tillich, 1952; 1959). Tillich was also one of the first Protestant theologians to engage with Japanese Buddhist scholars, in an early round of interreligious dialogue (Tillich, 1963). Finally, in the 1990s the field of pastoral theology plunged into a "communal-contextual" revolution, during which feminist and liberation theology scholars critiqued an over-reliance on individualistic psychologies. Instead, these scholars ground human functioning in familial, sociocultural, and communal models of care (e.g., Ramsey, 2004; McClure, 2010; Miller-McLemore, 2014).

While most pastoral theologians and counselors in recent years continue to identify as Protestant theologians, a few engage in dialogues with Buddhist traditions or even identify as

Buddhist practitioners. Notable among these are Wendy Farley (2005), as well as Giles and Miller (2012), editors of a volume on Buddhist chaplaincy. Buddhist pastoral theologians can draw on variety of scholars engaged in dialogues between Western and Buddhist themes, such as in religious studies (e.g., Jackson and Makransky, 2001; Loy, 2015), comparative theology (e.g., Knitter, 2009; Thatamanil, 2010), feminist theology (e.g., Brock, 1988; Gross, 1993), and deep ecology (e.g., Macy, 1991). I will return to a discussion of pastoral counseling and theology in the Conclusion.

Critiques of Psychological and Psychoanalytic Approaches to Religion

When examined from a “bird’s eye” view, these attempts to investigate religious experience and meditative practices illustrate many of the perennial questions and tensions that have existed within the fields of religious studies and religion and psychological studies (RPS) since their inception. Many of these tensions relate to the conceptual and methodological differences between psychoanalytic and theological models of human psychological versus spiritual maturation and transformation (Wulff, 1996; Jonte-Pace and Parsons, 2001). Critiques of psychology of religion investigations often hinge on determining the correct “balance” between competing dichotomies: religious versus secular, individual versus communal, biological versus psychological and sociological, unconscious versus conscious, and linguistic versus non-conceptual.³

Over the last century, a variety of scholars have criticized the biological and psychoanalytic investigations of religious experience and meditative practices. As we have seen, William James (1902) was one of the first scholars to lament the “nothing-buttery” of scientific interpretations that reduced religious experience to organic abnormalities and disease. In the

³ See Helderman (2015, 2016) for an analysis and critique of dichotomies in religious studies models.

1920s and 1930s, the religious scholar, Romain Rolland, and the Swiss Lutheran pastor and lay psychoanalyst, Oskar Pfister, enjoined Freud in debate over his psychoanalytic interpretations of the “oceanic experience” and religious ritual (see Freud and Pfister, 1963; Parsons, 1999). In the last twenty years, scholars have critiqued the various biological and cognitive science projects discussed above, which have reduced religious experience to the operation of genetics, neurochemicals, or universal cognitive modules (Meador, 2006; Brown, 2006). Finally, in the last decade Buddhist scholars have critiqued the “cultural imperialism” of late nineteenth and early twentieth century European scholars, who assigned Buddhism to lower levels of Western models of religious and cultural evolution (McMahan, 2008; Lopez, 2005, 2008).

In addition to their reductionism, what many of these critics point to as missing in the scientific investigations is an attention to the “lived experience” of human beings. Humans are “embodied” persons, “embedded” in networks of religious beliefs and in communal rituals and ethical practices. Scientific investigations often miss the qualitative experiences of human personhood, of embeddedness within a religious and cultural group, and of I-Thou relations with God or the gods (Meador, 2006; Brown, 2006; Carette, 2007; Jeeves and Brown, 2009; Smith, 2003, 2010; Gay and Kreiselmaier, 2016). Psychoanalyst Ana-Maria Rizzuto has levelled just this kind of critique at Granqvist’s and Kirkpatrick’s attachment investigations of religion, as well as at their inattention to unconscious dynamic processes (Rizzuto, 2009). Buddhist studies scholars have also aimed similar kinds of communal-contextual critiques against the psychological and neuroscientific investigations of Buddhist meditation. These scholars have lamented the “medicalization” and “psychologization” of traditional Buddhist teachings and practices by science, as well as the stripping of Buddhist meditation from its philosophical and ethical contexts (Sharf, 1995, 2005, 2015; McMahan, 2008; Lopez, 2008; 2012).

Recent Innovations in Evolutionary Theory and Developmental Science

In my integration of attachment, mentalization, and mindfulness processes in this dissertation, I am mindful of these critiques of the scientific investigation of religious experience and meditative practice. I have intentionally chosen contemporary evolutionary and developmental science models that accord with the influential theoretical paradigms of the extended evolutionary synthesis in biology (Jablonka and Lamb, 2005; Pigliucci and Muller, 2010), and of developmental psychopathology in psychology (Beauchaine and Hinshaw, 2013; Cicchetti, 2016). Researchers in these paradigms attempt to investigate human action and agency, *human personhood*, in interdisciplinary and multileveled projects that synthesize genetics, molecular biology, neuroscience, psychology, sociology, and anthropology.

First, the extended evolutionary synthesis refers to a group of new models and perspectives in evolutionary biology that have emerged over the last several decades. These models include epigenetics, developmental plasticity, systems biology, gene-culture coevolution, niche construction, and group or multilevel selection in evolution (see Oyama et al., 2001; Jablonka and Lamb, 2005; Pigliucci and Muller, 2010). All of these new models provide for a “wider” view of inheritance than the Neo-Darwinian emphasis on “randomly generated gene mutations” (Jablonka and Lamb, 2007, 353). When applied to human beings in an extended evolutionary psychology model (Bolhuis, 2011; Stotz, 2014), inheritance also includes the transmission of “non-genetic” information such as sociocultural parenting effects and symbolic cultural systems. Human organisms are “active agents” who alter and influence their social and ecological environments, but are also “embedded in and transformed by their genetic, epigenetic (molecular and cellular), behavioral, ecological, socio-cultural and cognitive-symbolic legacies” (Stotz, 2014, 1).

Second, the developmental psychopathology (DP) paradigm (Beauchaine and Hinshaw, 2013; Cicchetti, 2016) is a venerable interdisciplinary research tradition in developmental psychology that began over forty years ago. According to Hinshaw (2013, 3), DP “is at once a perspective on the origins of mental disorders that begin during childhood and adolescence, a multidisciplinary conceptual approach linking normative development to psychopathology, and a scientific discipline closely tied to clinical child/adolescent psychology and psychiatry.” DP draws on a variety of biological and psychological disciplines, including genetics, molecular biology, embryology, systems biology, neuroscience, and developmental, abnormal, cognitive, affective, and personality psychology. Reflecting the multilevel analyses of these fields, DP seeks to investigate the “dynamic interplay of biology and context, genes and environments, and ‘inner’ versus ‘outer’ influences on the development of healthy and atypical functioning” (Hinshaw, 2013, 3).⁴ Importantly for my dissertation, the attachment theory models of John Bowlby and his successors are integral to the DP paradigm, and Peter Fonagy labels himself as a developmental psychopathology researcher (see Fonagy and Target, 2003).

I contend that the extended evolutionary psychology and developmental psychopathology paradigms address and ameliorate many of the critiques of the evolutionary, biological, and psychoanalytic investigations of religious experience and meditation. The attachment theory,

⁴ Hinshaw (2013, 7) provides this description of developmental psychopathology that illustrates its multileveled and multidisciplinary approach: “...several core points are commonly viewed as central to the DP perspective. These include the necessity of (a) interweaving studies of normal development and pathological functioning into a true synthesis; (b) examining developmental continuities and discontinuities of traits, behavior patterns, emotional responses, and disorders; (c) evaluating evidence across multiple levels of analysis (from genes to cultures, including the intermediate levels of individuals, families, schools, and neighborhoods); (d) incorporating distinct perspectives, including clinical and developmental psychology, child and adolescent psychiatry, genetics, neurology, public health, philosophy of science, and many others, into a truly multidisciplinary effort; (e) exploring both risk and protective factors and their interplay, so that competence, strength, and resilience as well as pathology and impairment can be understood; (f) involving reciprocal, transactional models of influence in the field’s causal models, through which linear patterns of association and causation are replaced by probabilistic, dynamic, nonlinear, and complex conceptual models; and (g) capturing the importance of social and cultural context both in understanding the function and meaning of behavioral and emotional patterns and in interacting with biological predisposition to yield disordered functioning.”

mentalization theory, developmental neuroscience, and biological and cultural evolution models I present in this dissertation provide interdisciplinary and multileveled analyses of human functioning, from genes and neurons “all the way up” to sociological and cultural systems. In my view, they provide a vastly more sophisticated and integrative view of human biological, psychological, and sociocultural functioning than the nineteenth century religious evolution models of the past. Moreover, the extended evolutionary psychology and developmental psychopathology paradigms, which envision human beings as embodied organisms embedded in ecological, sociocultural, and cognitive-symbolic systems, is responsive to the communal-contextual emphasis on “lived human experience” in embodied and embedded beliefs, practices, and rituals.

The extended evolutionary psychology and developmental psychopathology paradigms are also convergent with Gay and Kreiselmaier’s (2016) analysis of attachment-related themes in human religion. Gay and Kreiselmaier place their examination of attachment and religion within the broad scope of contemporary biological, neurobiological, and cultural models of evolution. They also preserve an attention to the lived experience of religious practitioners, drawn from “thick descriptions” of human experience provided by scholars in the clinical sciences, religious studies, and theology (Gay and Kreiselmaier, 2016, 320, 335-336). Several sections of this Introduction, Chapters IV and VI, and the Conclusion are extensions and expansions of some of the sections, as well as the concepts and models, presented in Gay and Kreiselmaier (2016).

Figure 1 and Figure 2, below, give helpful visual representations of the many factors and processes that combine to produce human development, as envisioned in the extended evolutionary psychology and developmental psychopathology approaches.

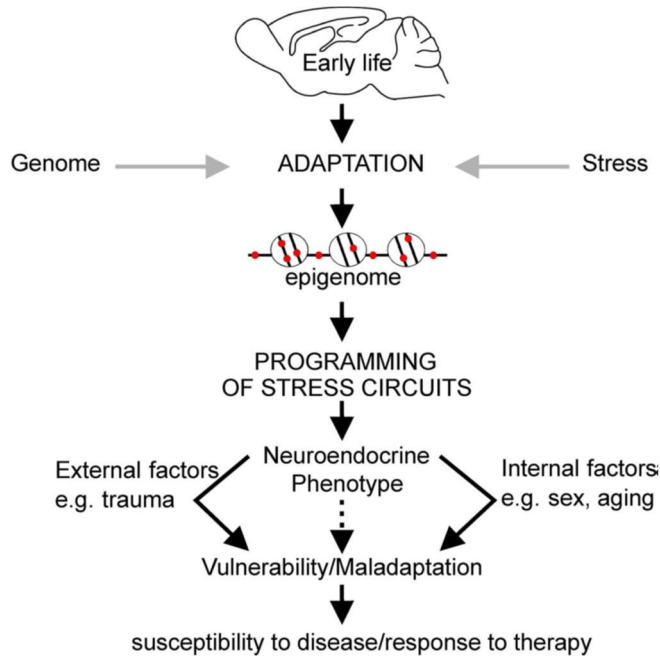


Figure 1. Stress and Epigenetics in Early Childhood Development⁵

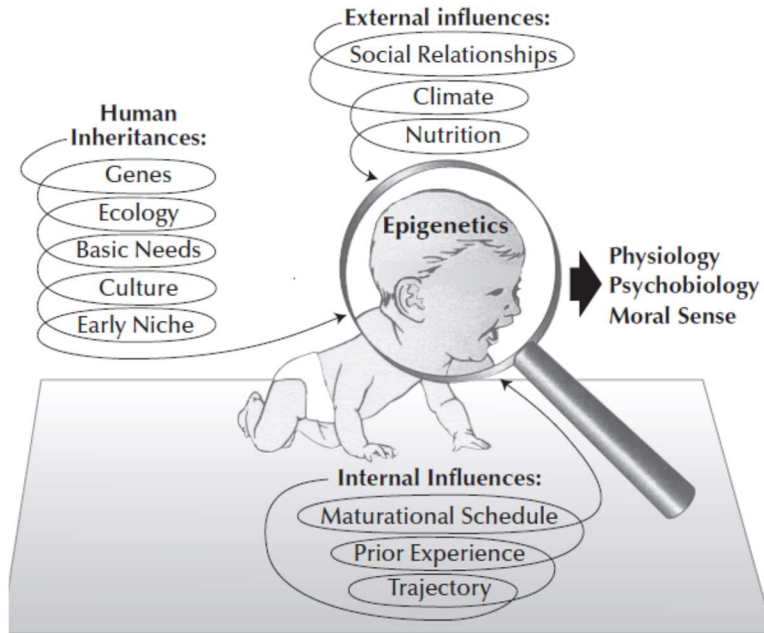


Figure 2. Inheritances and Internal and External Influences in Infant Development⁶

⁵ “Figure 3.” In Chris Murgatroyd and Dietmar Spengler, “Epigenetics of Early Child Development,” *Frontiers in Psychiatry*, 2(16): 1-15; 8. doi: 10.3389/fpsy.2011.00016.

⁶ “Figure 3.3 The Dynamism of the Micro Developmental System.” In Darcia Narvaez, *Neurobiology and the Development of Human Morality: Evolution, Culture, and Wisdom* (New York: Norton, 2014), 43.

The Need for Evolutionary and Developmental Science Models in Buddhist Studies

Throughout the next six chapters and the Conclusion, I will attempt to demonstrate how this dissertation can make a significant contribution to the field of Buddhist studies. These contributions center on the three major premises of this dissertation which I have proposed. First, I contend my integration of attachment, mentalization, and mindfulness within developmental and evolutionary science models can be of significant benefit to Buddhist scholars and practitioners. It is an oft-noted maxim that Buddhist philosophy and psychology do not have a modern model of developmental psychology and psychopathology (Engler, 1986; Rubin, 1996; Aronson, 2004). As I will discuss in Chapter V, traditional Buddhist cultures do have sophisticated *pre-modern* folk models of human development and psychopathology that derive from indigenous religious practices and philosophies, folk medicines, and folk psychologies. A major benefit of this dissertation will be to integrate the Buddhist meditation literatures with a *modern* model of developmental psychology and psychopathology, based in the attachment, mentalization, and developmental science literatures. This will help ground Buddhist developmental theories in ongoing empirical and neuroscientific research projects. It may also help explain common kinds of concentration or avoidance problems encountered in meditation, the decompensation suffered by some meditation practitioners, and even the recent sexual, substance abuse, and financial scandals perpetrated by Buddhist *Sangha* leaders who were considered to be enlightened (Rubin, 1996; Engler, 2003; Schoen, 2013; Oppenheimer, 2013).

Second, I will seek to demonstrate how placing Buddhist philosophies and practices within contemporary religious studies models of neurobiological and cultural evolution can be of benefit to Buddhist scholars. In the models I will present, Buddhism is considered to be an Axial Age religion, with typical Axial Age characteristics like transcendental metaphysics,

universalistic ethics, and individualistic meditative practices. Moreover, despite its lack of a creator God and an emphasis on non-attachment, Buddhist philosophies and practices are suffused with attachment-related themes and processes. Relatively little research in Buddhist studies, or in religious studies in general, has focused on extended evolutionary synthesis models of psychology, on Axial Age models of religious evolution, or on the prominence of attachment-related themes in Buddhist philosophy and practice. Perhaps this dissertation can contribute to an attachment-related, developmental and evolutionary “turn” in Buddhist studies that can complement the “relational turn” recently identified by Gleig (2012, 2016; see Chapter V).

Third and finally, I will seek to show how grounding Buddhist moral philosophies and ethical cultivation practices in contemporary moral psychology research models can be of benefit to Buddhist studies scholars. Recently, several prominent contemporary virtue theorists, moral philosophers, and Christian moral theologians have begun to mine the new models of moral psychology and moral development that are informed by biology, neuroscience, anthropology, and even attachment theory (e.g., MacIntyre, 1999; Flanagan, 2007, 2011; Spezio, 2011, 2013; Narvaez, 2014). To my knowledge, Buddhist ethics scholars have not tapped into these new moral psychology models. Grounding the rich, millennia-old traditions of Buddhist moral philosophies and ethical cultivation practices in contemporary models of moral psychology can make a significant contribution to the field. As I will argue in the Conclusion, it can also help inform the vital role that I believe Buddhist meditation practices can play in helping us to extend empathy and respect to all members of our own society and to all members of other races, nations, and religions in our globalized, interdependent world.

As my study of theory progressed it was gradually borne in upon me that the field I had set out to plough so lightheartedly was no less than the one that Freud had started tilling sixty years earlier, and that it contained all those same rocky excrescences and thorny entanglements that he had encountered and grappled with—love and hate, anxiety and defence, attachment and loss.

John Bowlby, *Attachment and Loss, Vol. I*, 1969/1982, xxvii

CHAPTER I:

JOHN BOWLBY AND ATTACHMENT THEORY

To begin the task of understanding the complex evolutionary and developmental relations between attachment, mentalization, and mindful awareness, in the first two chapters of this dissertation I will present an introduction to attachment theory. Because of the vast literature that has accumulated on attachment theory and research over the decades, it will be helpful to split the attachment theory material into two chapters. In this first chapter, I will provide a summary of the major theoretical formulations and empirical research of John Bowlby's attachment theory.

I will begin by introducing John Bowlby and describing the origins of attachment theory in psychoanalytic theory, ethology, and cognitive psychology. I will then present Bowlby's major concepts of "classical" attachment theory. Next, I will discuss Mary Ainsworth's empirical research on infant attachment classifications, and then detail Mary Main's research on adult parental attachment styles and their remarkable correspondence with the attachment patterns of

their infants. Finally, I will end with a brief presentation of empirical research on the stability of attachment styles throughout the lifespan.

In Chapter II, I will continue the attachment theory presentation by describing current research on the major secure and insecure attachment styles and their connection to mental wellbeing and psychopathology. I will end the chapter by explicating several modern physiological and developmental neuroscience models of attachment that have begun the task of elucidating the neurobiological substrates of attachment.

Introduction to Attachment Theory

Since its founding by John Bowlby in the 1950s, attachment theory has grown to become one of the most influential and extensively-researched models in academic psychology (Cassidy and Shaver, 2008, xi). Attachment research is a cornerstone of developmental, social, and personality psychology, and it has become increasingly important in clinical psychology in the last decade (Holmes, 2014, x). As a measure of its influence, a recent search of the ProQuest online database with the subject heading of “attachment” yielded over 38,000 research articles, chapters, and books on attachment theory themes, with an additional 9000 theses and dissertations.⁷

Attachment theory has been characterized by Waters (Waters and Cummings, 2000, 2) as one of the last remaining “grand theories” in psychology. Its models and theories reach across the developmental, interpersonal, cognitive, affective, and clinical literatures to seek a comprehensive view of human functioning throughout life. The basic tenets of Bowlby’s theory are that all children have a universal need to form close attachment bonds to primary caregivers

⁷ Search conducted on 10-19-15, from <http://search.proquest.com.proxy.library.vanderbilt.edu/>

(usually the mother); that sensitive and responsive parents are more likely to have securely attached infants, while insensitive parents tend to have insecure infants; that secure attachments have positive consequences for infants' neural, affective, cognitive, and social development, while insecure attachments can have the reverse; and that attachment continues to influence intrapersonal and interpersonal functioning "from the cradle to the grave" (van IJzendoorn and Sagi-Schwartz, 2008, 881-882).

At present, attachment theory is comprised of several heterogeneous research traditions. Developmental, social/personality, clinical, and now neuroscientific researchers are working to elucidate and expand upon Bowlby's basic theories. The research methods, measures, and terminologies of these traditions can be quite disparate, with scholars focused on theoretical, empirical, or neuroscientific research (see Cassidy and Shaver, 2008). It is a considerable task to translate between and integrate these research traditions, and many of the senior investigators in the field are devoted to just this project. My review in this chapter will attempt to dance between these different levels and methods of analysis. Moreover, given the vastness of the research literature accumulated over the last fifty years, my review will necessarily be brief. I will focus only on aspects of the theory that are central to my dissertation thesis.⁸

John Bowlby and the Origins of Attachment Theory

Attachment theory was founded in the 1950s by John Bowlby (1907-1990), a British psychoanalyst and child psychiatrist. Bowlby was an active member of the British Psycho-Analytical Society (BPS) in the 1940s, and he was analyzed by Joan Riviere and supervised by

⁸ For comprehensive introductions, see Cassidy and Shaver's (2008) edited collection and Mikulincer and Shaver's (2007a). Much of my presentation in this chapter is drawn from these books, as well as the summaries by Peter Fonagy and colleagues (Fonagy, 2001; Fonagy and Target, 2003; Allen, 2013).

Melanie Klein (Holmes, 2014, 17). For most of his career, Bowlby worked at the Tavistock Clinic in London as a family clinician and child development researcher. He was also involved with World Health Organization research projects during and after WWII, when he examined the psychological impact of maternal loss on juvenile delinquents and war orphans (Bowlby, 1944; 1951). From this research, Bowlby gained a keen awareness of the pervasive developmental effects that children suffer when exposed to trauma, separations, and loss. He also catalogued the stages of protest, despair, and detachment children appear to go through when dealing with their distress and grief (Fonagy, 2001, 7; Shaver and Fraley, 2008).

Bowlby looked to academic sciences outside of the psychoanalytic tradition to help make sense of these childhood patterns. He drew most heavily upon the ethology and primate anthropology research of scholars such as Konrad Lorenz, Robert Hinde, and Harry Harlow, as well as the biological and psychological sciences of his day. The attachment model he created can be considered a synthesis of British object relations psychoanalysis with evolutionary theory, ethology (the study of animal behavior), cognitive psychology, cybernetic or control systems theory, and ecology (Cassidy, 2008, 4). Bowlby detailed his new theories in his massive study, the *Attachment and Loss* trilogy (1969/1982; 1973; 1980), as well as in several edited collections (1979; 1988).

Bowlby's new theories placed him at odds with many of his BPS colleagues. He eventually broke with some major psychoanalytic tenets. For example, Bowlby rejected Anna Freud's denial of infants' capacities to mourn and Klein's emphasis on an infant's internal phantasies instead of actual experiences with the mother (Bretherton, 1993, 760; Eagle, 2013, 23). He also rejected Sigmund Freud's views that the mother-infant bond was a secondary by-product of the cessation of hunger by maternal feeding, or the stimulation of the infant's

erogenous zones (Eagle, 2013, 86-89). Instead, Bowlby maintained that the “human infant enters the world predisposed to participate in social interaction” (Fonagy 2001, 232). Infant attachment to the mother is a primary, innate, motivational drive. It is secondary to no other psychobiological processes.

The hostile reception given Bowlby’s theories by his BPS colleagues resulted in “bad blood” between the two traditions (Fonagy, 2001, 1). He was an ostracized figure within psychoanalytic circles until a thaw in recent decades. However, Bowlby self-identified as an object relations theorist (ORT) and he remained a member of the BPS throughout his career. He proffered his attachment theories to preserve and re-vitalize Freud’s psychoanalytic theories by updating them with the modern sciences of the times, rather than to demolish or replace them (Eagle 2013, 4).⁹ Because Bowlby sought to ground psychoanalytic theory construction in systematic empirical research and the biological and psychological sciences, attachment research is becoming increasingly influential in contemporary psychoanalysis and the developmental and clinical sciences (Eagle, 2013, 199-201; see Schore, 2012; Siegel, 2012; Beebe and Lachmann, 2014).

Finally, most historians acknowledge the influence on attachment theory by Bowlby’s longtime research collaborator, the Canadian-American developmental psychologist Mary Ainsworth. If Bowlby was the “father” of attachment theory, then Ainsworth was its “mother” (Allen, 2013, 5). Ainsworth worked in Bowlby’s lab at the Tavistock Clinic in the 1950s, and then conducted home field studies in Uganda and Baltimore in the 1950s and 1960s (Ainsworth, 1967). Ainsworth provided a major contribution to the empirical foundations of attachment

⁹ A discussion of the similarities and differences between AT and psychoanalysis is beyond the scope of this dissertation. See Fonagy, 2001; Fonagy, Gergely, and Target, 2008; and Eagle, 2013.

theory with her Strange Situation test (SS) of mother-infant attachment behavior (discussed below; Ainsworth et al., 1978). The SS test helped launch attachment theory into the vast empirical discipline it is today (Mikulincer and Shaver, 2007a, 7-8).

Bowlby died in 1990 at age 83. For his pioneering efforts he received numerous awards and appointments.¹⁰ In a 2002 *Review of General Psychology* article he was ranked as the forty-ninth “most eminent” psychologist of the twentieth century, based on surveys and on number of citations and awards (Haggbloom et al., 2002).¹¹

Bowlby’s “Classical” Attachment Theory

In the next two sections, I will present Bowlby’s foundational theories and concepts on mother-infant bonds and Ainsworth’s empirical research on infant attachment classifications. Because of the heterogeneity of attachment theories promulgated over the decades, some scholars have begun referring to different historical periods in the attachment theory tradition (e.g., Rutter et al., 2009; Main et al., 2011). Drawing on these models, I will refer to Bowlby’s and Ainsworth’s contributions as the “classical” period of attachment research, which was conducted from the 1950s to the 1980s. Other eras include the advent of adult attachment research in the 1980s; mentalization research, begun by Fonagy and colleagues in the 1990s (Fonagy et al., 2002); and “modern” neurobiological models of attachment produced by physiological and developmental science researchers in the last two decades (see Stern, 2004; Trevarthen, 2005; Schore, 2012).

¹⁰ It was during his 1980 appointment as the Freud Memorial Professor of Psychoanalysis at University College London that Bowlby met and influenced a young Peter Fonagy.

¹¹ Sigmund Freud was ranked third. Citation from “John Bowlby” Wikipedia entry; retrieved on 1-28-15, from https://en.wikipedia.org/wiki/John_Bowlby

Evolution and the Attachment Behavioral System

First, Bowlby (1969/1982; 1973) maintained that the attachment bond between mother and infant is one of several innate, species-universal, neuro-bio-behavioral systems. These systems evolved over millions of years in order to enhance infants' chances of survival and reproduction. The other behavioral systems include the caregiving, fear, exploratory, affiliative, and sexual systems. The attachment behavioral system has existed for some 180 million years in all mammalian species and some birds and reptiles, including higher primates and human beings (MacLean, 1985, 415; cited in Allen, 2013, 215).

In the first volume of the *Attachment and Loss* trilogy (1969), Bowlby argued that the “biological function” of the attachment system was to motivate the infant to seek and maintain physical proximity to the caregiver during times of threat or need in order to protect the infant from predators (Mikulincer and Shaver, 2007a, 10). In the ecological “environment of evolutionary adaptedness” (EEA) in which our early human hominid ancestors evolved, those infants who stayed close to supportive and caring parents during danger and distress were more likely to survive and pass on their genes to future generations (Bowlby 1969/1982, 49; Cassidy, 2008, 5-6).

Bowlby used the terminology of ethology and control systems theory (early cybernetics) to describe the functioning of the attachment system (Bowlby, 1969/1982). The “set goal” of the attachment system is proximity to the mother for security and emotional support. The system is “activated” in the child by “triggers” or perceived threats to survival, such as separation from caregivers, the presence of strangers, illness, injury, loud noises, or darkness. The presence of these triggers activates the “fear behavioral system,” which is experienced by the infant as anxiety. The fear system in turn activates “attachment behaviors” by the infant. Attachment

behaviors signal distress and the desire for proximity/comforting from the caregiver. These include smiling, crying, vocalizing, clinging, and crawling or toddling (Mikulincer and Shaver, 2007a, 12).

Bowlby argued that the attachment behaviors of the child activate the “caregiving behavioral system” in the mother. The mother responds to the child’s distress by engaging in caregiving behaviors that protect and soothe the infant. These include calling, retrieving, soothing, holding, and rocking (Cassidy, 2008, 10). With the attainment of protection and comfort, both the attachment and caregiving systems “terminate” or deactivate. Finally, the “exploratory behavioral system” in the child is then free to activate. The exploratory system involves social play and the worry-free exploration of the environment. Bowlby considered exploration to be essential for the development of knowledge and skills about the physical and social worlds needed for human functioning and survival (Cassidy, 2008, 8; Eagle, 2013, 11).

Attachment Figure as Safe Haven and Secure Base

Bowlby’s characterization of the attachment behavioral system highlights the often confusing distinction between the attachment system and the “attachment bond.” The former is a set of proximity seeking behaviors to obtain protection and comfort; the latter is the ongoing, supportive, loving tie between caregiver and infant (Cassidy, 2008, 12). Bowlby theorized that the infant is motivated to bond with an “attachment figure,” a “stronger and wiser” person who provides safety and emotional support (Mikulincer and Shaver, 2007, 11). Most infants attach to more than one person (e.g., parents, older siblings, grandparents), but one particular figure is primary, usually the mother.

Bowlby argued that attachment bonds are a subset of other “affectional bonds” (derived from the “affiliation behavioral system”) we have with important friends and relatives. In all affectional bonds, we desire emotional closeness and connection, and feel sad and distressed when these individuals depart. What distinguishes attachment bonds from affectional bonds is the additional need for protection and security.

Zeifman and Hazan (2008; cited in Allen, 2013, 62) described four key characteristics of attachment bonds: 1) we *seek proximity* to the attachment figure when we feel sad or distressed; 2) we feel sadness or distress when *separated* from the attachment figure; 3) we rely on the relationship to the attachment figure as a *safe haven* for emotional comfort and security; and 4) we use the relationship as a *secure base* for play and exploration of novelties in the environment (the exploratory system). Thus, an affectional bond can become an attachment bond if one or both partners seek emotional security and protection from the relationship (Fonagy, 2001, 10; Cassidy, 2008, 12).

Bowlby stressed that these four characteristics are operative in all attachment relationships throughout the lifespan, not just in the mother-infant bond. Adult attachment bonds between spouses or between close friends include the needs for protection, security, and emotional comforting. Expressing and providing for these needs are a necessary part of mature, emotionally intimate, and interdependent relationships (Mikulincer and Shaver, 2007a, 28).

Interactions between Attachment and Other Behavioral Systems

Bowlby (1969/1982) maintained that the attachment, caregiving, fear, and exploration systems all work in “dynamic equilibrium” (Ainsworth, 1972, 118; cited in Cassidy, 2008, 8). When the infant perceives “natural cues” to danger like predators or the absence of the caregiver,

the fear system engages and the exploration system ceases immediately. Through attachment behaviors, the infant then seeks the safe haven of the attachment figure for comfort and security. The infant's attachment behaviors activate the parent's caregiving system, and the parent (ideally) soothes the child. Once the infant is soothed, the infant can use the caregiver as a secure base for the resumption of play and exploration. All the while, the infant monitors and appraises the attachment figure's proximity and availability while exploring, ready to activate the fear and attachment systems if needed (Fonagy and Target, 2003, 233; Cassidy, 2008, 8).

Marvin and colleagues refer to this ideal virtuous cycle as the "circle of security" (Marvin et al., 2002; cited in Allen, 2013, 22). Most attachment researchers consider the complex interplay between the attachment, fear, exploratory, and caregiving systems and the secure base and safe haven functions as the foundation for the development of affect regulation and interpersonal relational skills in the growing child.

In Figure 3 below, I have reproduced an informative schematic diagram that depicts many of the themes of Bowlby's classical model discussed to this point, such as the attachment, fear, and exploratory systems and the safe haven and secure base functions.

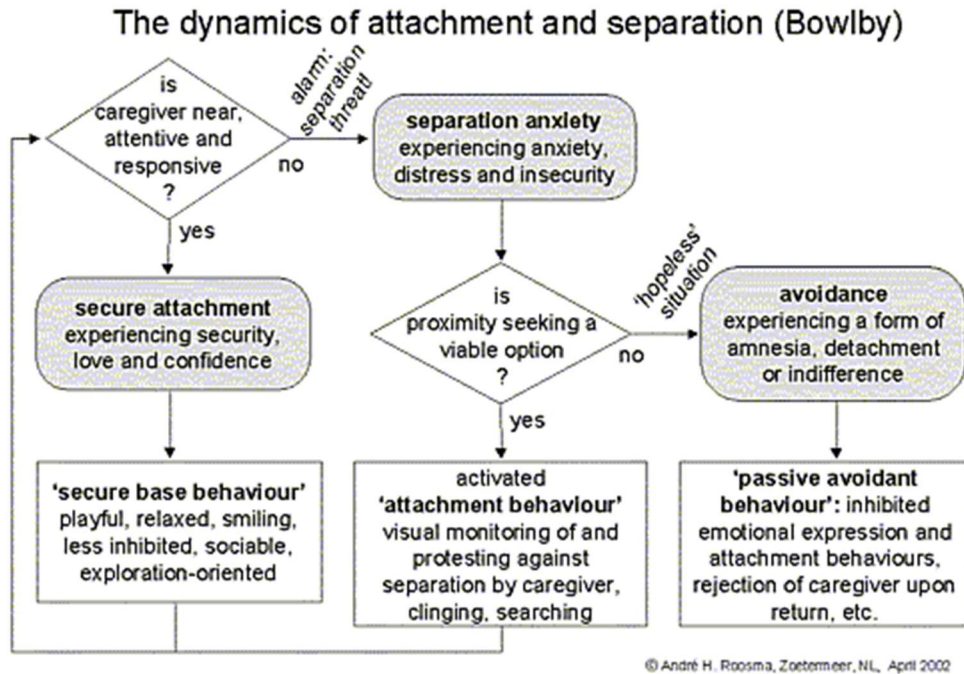


Figure 3. The Dynamics of Attachment and Separation¹²

Internal Working Models

Due in part to Ainsworth’s empirical research, in the second volume of the *Attachment and Loss* trilogy (1973) Bowlby revised the set goal of the attachment system from *physical proximity* to appraisals of a caregiver’s *availability* (Kobak and Madsen, 2008, 31-32). Bowlby defined availability as “expectations of accessibility and responsiveness” of the caregiver by the infant (1973, 202; cited in Allen, 2013, 17). The child builds these expectations by appraising the effectiveness of their attachment interactions with their mothers. If particular attachment strategies (e.g., crying, kicking, and crawling) are successful in gaining proximity to and emotional comforting by the caregiver, then the positive psychological states of feeling soothed, loved, and protected by the caregiver terminate the attachment system (Fonagy and Target, 2003,

¹² Reproduced from André H. Roosma, “Connectedness and Attachment: Some Observations.” Retrieved on 5-18-16, from: <http://www.12accede.org/connxion.html>

234). Sroufe and Waters (1977) termed this state “felt security.” The attainment of felt security reinforces the particular attachment strategies. If the strategies do not lead to caregiver proximity and felt security, then psychological distress occurs and the infant tries other attachment behaviors (e.g., smiling or reaching upwards to be held) (Shaver and Mikulincer, 2011, 167).

Bowlby argued that the child’s cognitive-affective appraisals of the effectiveness of their attachment interactions with their mothers are “translated” into mental representations or schemas. Drawing on object relations theory and the psychology model of Craik (1943), Bowlby called these schemas “internal working models” (IWMs; Bretherton and Munholland, 2008, 103). IWMs are assemblages of images, emotions, and cognitions reflecting the caregiver’s responses to the infant’s bids for attachment (working models of others); and of the infant’s sense of self-efficacy and social value based on the caregiver’s responses (working models of the self) (Mikulincer and Shaver, 2007a, 15-16). IWMs are presumed to be stored in associative memory networks in the brain, and they are used by the infant for prediction and guidance in navigating future interpersonal interactions with the caregiver and the larger social world (Shaver and Mikulincer, 2011, 169).¹³

The precise nature and functioning of IWMs still remain unclear, but decades of cognitive psychology and neuroscience research has elucidated at least some of their basic processes (Bretherton and Munholland, 2008; Mikulincer and Shaver, 2007a, 15-25). First, research suggests that early IWMs make up the basic building blocks of the personality and account for self-continuity across time. They are relatively resistant to change but can be revised (positively or negatively) to accommodate new relationship experiences, changes in life

¹³ For analyses of the similarities and differences between IWMs in attachment theory and object representations in psychoanalysis, see Fonagy (2001) and Eagle (2013).

circumstances, and psychotherapy (hence, they are called *working* models; Bowlby, 1973). Second, IWMs are presumed to consist of implicit and explicit, hierarchically-ordered elements of procedural, semantic or propositional, and episodic or autobiographical representations. Perhaps at the foundation of IWMs are “secure base scripts”: implicit “if-then” propositional rules about the availability of attachment figures (Waters and Waters, 2006; Shaver and Mikulincer, 2011, 168).

Third, IWMs appear to consist of relationship-specific models and more generalized models of self and other. Which model becomes more explicitly or implicitly “accessible” depends on the situational social context (Mikulincer and Shaver, 2007a, 24). Finally, IWMs can be subject to *distortion and bias*. IWMs not only contain “tolerably accurate” recordings of positive and negative interactions with caregivers, but the child’s subjective perceptions (including internal fantasies) of the caregiver’s availability and sensitivity. New experiences with attachment figures today are often assimilated into older IWMs derived from our caregivers, and negative or distorted IWMs can defensively affect our perceptions of present relationships. This view of IWMs moves attachment theory much closer to psychoanalytic perspectives (Eagle, 2013, 64-68; Fonagy, 2001, 11-15).

Summing up these perspectives, attachment researcher Mary Main gives this concise definition of IWMs:

We define the internal working model of attachment as a set of conscious and/or unconscious rules for the organization of information relevant to attachment and for obtaining or limiting access to that information, that is, to information regarding attachment-related experiences, feelings, and ideations (Main, Kaplan, and Cassidy, 1985, 66-67).

Secure and Insecure Attachment Styles

Next, several scholars have noted that attachment theory would not have captured the imagination of psychology researchers without Mary Ainsworth's empirical investigations of the individual differences in infants' attachment systems that result from their histories of interactions with attachment figures (e.g., Shaver and Mikulincer, 2011, 167). Mikulincer and Shaver (2007a, 22) describe these individual differences as "attachment styles." Attachment styles are "patterns of expectations, needs, emotions, and social behaviors." They are based on underlying IWMs of self and others that derive from interactions with early and current attachment figures, and reflect activation patterns of an individual's attachment system across most relationships.

Ainsworth and colleagues (1979) were the first researchers to identify two broad attachment styles that infants, children, and adults use to regulate their emotions and behavior: secure and insecure attachment styles. Secure styles engage in the activation and deactivation sequence of the attachment system I discussed above: the secure infant or adult is able to successfully use "primary attachment strategies" (Main, 1990) to attain proximity and comfort from the attachment figure; a sense of "felt security" is attained; the attachment system deactivates; and the individual is then free to explore the environment and develop skills for living. In infants and children, primary attachment strategies can include smiling, crying, crawling, and reaching upward to be held.

With adolescents and adults, psychological security is still often attained by seeking proximity with one's actual spouse, mentor, or close friend for comfort and relief, especially in times of illness or tragedy. But more normally, the secure adult regulates his/her emotions in times of stress through the explicit or implicit "symbolic activation" of soothing and comforting

images, thoughts, and emotions (IWMs) of positive interactions with one's attachment figure (Mikulincer and Shaver, 2007a, 13). As will be discussed in Chapter II, secure attachment styles are associated with a wide range of positive outcomes in affect regulation, coping skills, and relationship satisfaction.

Insecure attachment styles, by contrast, are engaged in by the infant or adult when the primary attachment strategies to attain proximity and emotional security fail, due to the unavailability and insensitive responsiveness of the attachment figure. In the case of children, the infant learns that the primary strategy of seeking proximity and security does not work, so "secondary attachment strategies" are performed instead. While suboptimal, secondary strategies do maintain the child's vital attachment bond to the caregiver (Main 1990, 56-57; cited in Mikulincer and Shaver, 2007, 22).

Beginning with Ainsworth's early studies, empirical research over the last three decades has consistently identified two major forms of insecure secondary attachment styles: the anxious style and the avoidant style (Mikulincer and Shaver, 2007a, 25-26). Briefly stated, the anxious attachment style is associated with inconsistent and intrusive parenting styles. As a result, the infant (and later, the adult) *hyperactivates* the attachment system by intensifying negative emotions and demanding constant love and care to force the parent to pay more attention and provide better emotional support (Mikulincer and Shaver, 2007a, 22; 26). The avoidant attachment style, on the other hand, is associated with parents who reject or punish the infant's security bids. As a result, the infant *deactivates* the attachment system by inhibiting attachment behavior and "defensively excluding" attachment needs for emotional closeness and support (Mikulincer and Shaver, 2007a, 22; 26). Insecure attachment styles are generally associated with negative outcomes in affect regulation, coping skills, and relationship satisfaction.

Finally, since the 1980s a fourth major attachment style has been discovered in infants and adults: the “disorganized” or “fearful avoidant” style (Mikulincer and Shaver, 2007a, 26). Disorganized attachment results from severe life experiences of loss, abuse, or trauma. In effect, ordinary primary and secondary attachment strategies for proximity and support “break down.” Infants with disorganized attachment display bizarre and disoriented behavior, while adults suffer from lapses in cognitive and affective coherence and control. Disorganized attachment styles are often associated with psychopathological outcomes (Mikulincer and Shaver, 2007a, 26).

In the next two sections of this chapter, I will present some key findings from the mountain of empirical research that has accumulated over the last three decades on individual differences in human attachment. This research stems from the development of several major psychological assessment instruments that purport to tap into attachment processes in infancy and adulthood. I will focus on Mary Ainsworth’s research on infant attachment categories and Mary Main’s research on adult attachment. This assessment research will help put a concrete “face” to the theoretical formulations of classical attachment theory, IWMs, and attachment styles presented to this point. In Chapter II, I will then describe the dynamics and developmental outcomes of the four attachment styles in greater detail.

Ainsworth’s Research on Infant Attachment Classifications

First, as noted above Mary Ainsworth made a major contribution to the empirical foundation of attachment theory by discovering secure and insecure mother-infant attachment patterns with her “Strange Situation” assessment test (SS). The SS is a 30 minute laboratory-based procedure which measures attachment in infants aged 12-20 months. The SS follows a

standardized behavioral sequence: a mother and infant enter a room filled with toys; a stranger enters the room and the mother leaves the infant alone with the stranger; the mother returns and the stranger leaves; the mother leaves and then the stranger returns; and finally, the mother returns and the stranger leaves (see Ainsworth et al., 1978).

The SS is a “moderately stressful” situation designed to activate the attachment system in infants. Fascinatingly, Ainsworth discovered that the key variable in determining the infant’s attachment to the mother is the infant’s behavior upon the two *reunions* with the mother, rather than during the mother’s *separations* (Solomon and George, 2008, 389). The SS assesses if and/or how quickly the infant is soothed by the caregiver upon reunion (attachment system), and if and/or how quickly the child can return to play and exploration in the room (exploration system). Individual differences in the infant’s reunion behavior are presumed to be a function of the infant’s implicit perceptions of the availability and responsiveness of the mother in past mother-infant interactions, as recorded in the infant’s IWMs.

Strange Situation Attachment Classifications

Four decades of research using Ainsworth’s Strange Situation coding protocol has consistently yielded three main infant attachment classifications in cultures around the world: *secure*, *ambivalent/resistant*, and *avoidant*. A fourth category of *disorganized/ disoriented* attachment was later discovered by Ainsworth’s student, Mary Main (Main and Solomon, 1990). I will briefly discuss each pattern in turn, drawing on summaries in Hesse (1999), Solomon and George (2008), and Allen (2013).

First, *secure* (coded B in Ainsworth’s protocol) infant attachment is characterized by successful maternal soothing of the child on reunion and the resumption of exploration and play

(Hesse, 1999, 399). Secure infants explore the room and play with the toys in the pre-separation period. Most (but not all) cease playing and express distress upon the mother's separations (fear system), and some cry at the second separation. Secure children show an obvious preference for the parent over the stranger, and actively approach the mother (with joy or anger) to be picked up and soothed upon her return (primary attachment strategy). After a relatively brief reunion in which the child feels comforted and soothed, secure infants can then resume exploring the room and playing with the toys (exploration system). In sum, secure infants have a basic sense of trust in the world (Erickson, 1950). They appear to have access to positive implicit IWMs of the availability, responsiveness, and sensitivity of attachment figures and of the efficacy and worth of their own selves (Allen, 2013, 29-31).

Second, *insecure-avoidant* (A) attachment is characterized by the “feigned indifference” to the mother's departure and return (Kobak and Madsen, 2008, 38). Avoidant infants spend their time exploring and playing during the pre-separation period, and then fail to show distress or cry upon maternal separation. When the mother returns, the avoidant infant shows little or no distress, anger, or proximity seeking (secondary attachment strategy). If the mother initiates care, the infant actively avoids and ignores the parent by moving away or even leaning out of her arms when picked up. During the entire procedure, the avoidant infant's focus is on playing with the toys or exploring the room (exploration system) (Hesse, 1999, 399). As noted above, the avoidant child appears to *deactivate* his/her attachment behavior and minimize his/her needs for closeness and security. This is presumably done to defensively avoid the frustration caused by an unavailable caregiver. Avoidant children appear to have negative IWMs of the availability, responsiveness and sensitivity of caregivers, and negative IWMs of their own efficacy and self-worth (Allen, 2013, 35-38).

Third, *insecure-ambivalent* (C; sometimes called *anxious/ambivalent* or *resistant*) attachment is characterized by intense distress upon the mother's departure and demanding/rejecting consolation upon her return (Ainsworth et al., 1978). Ambivalent infants appear to be wary or distressed by the situation even prior to separation. They express little interest in exploring the room or playing with the toys throughout the procedure. Instead, they appear preoccupied with the parent's availability throughout (fear system). Ambivalent infants fail to become soothed and comforted by the mother upon reunion, and may express anger when greeting the mother, reject her caregiving, or passively cry (secondary attachment strategies). They continue to focus attention upon the parent after the reunion period, and do not return to exploration and play (Hesse, 1999). As discussed above, the ambivalent child appears to *hyperactivate* his/her attachment behavior and emotional intensity in order to demand the caregiver pay more attention to the infant's attachment needs. Ambivalent infants appear to have neutral or mixed (positive and negative) IWMs of the availability and responsiveness of caregivers (as the caregivers do sometimes attend to the child's needs), but negative IWMs of their own efficacy and self-worth (Allen, 2013, 32-35).

Fourth, the *disorganized/disoriented* (D) attachment is characterized by a breakdown of organized attachment strategies (primary or secondary) and is associated with caregiver trauma, abuse, or mental illness (Main and Solomon, 1990). Disorganized/ disoriented infants display bizarre and disorganized behaviors in the parent's presence, "suggesting a temporary collapse of behavioral strategies" (Hesse, 1999, 399). For example, the infant may freeze, walk backward, hide, or fall down and huddle on the floor upon the mother's return. If the mother attempts to pick up or soothe the infant, disorganized/disoriented infants may cling to the mother while

intensely crying, or lean away with their gaze averted. The infant may also wander aimlessly around the room or rock incessantly (Allen, 2013, 167-168).

Main and colleagues maintain that this bizarre behavior is associated with reports of caregiver's "frightened, frightening, or disoriented" behavior or abuse. Main hypothesized that the bizarre and incoherent behavior of the infant is a predictable response: the child is compelled by attachment needs to seek proximity to the caregiver, but is terrified into disorientation by the caregiver's frightening/frightened behavior (see Main and Solomon, 1990). Organized primary (secure) and secondary (insecure) strategies break down, and the infant responds with disorganized and incoherent behavior. Main also argued that when disorganized/disoriented infants were not under attachment stress, they will ordinarily fit into one of the A, B, or C categories. In sum, disorganized/disoriented infants, at least when under attachment stress, appear to have negative or incoherent IWMs of the availability and responsiveness of caregivers and of their own efficacy and self-worth (Allen, 2013, 167-169).

Strange Situation Empirical Data

The Strange Situation (ABC + D) protocol remains the "gold standard" of infant attachment assessments (Main et al., 2011, 428). As stated, a huge amount of data has been collected over the last three decades using the SS test. I can only offer a few brief findings here. First, Ainsworth and colleagues' (1978) statistical data from her original study has held up over time. Most studies find that around 65% of infants in most low-risk Western populations are securely attached; around 20% are avoidantly attached; and around 15% are ambivalently attached. Another 15% are also assessed as disorganized-disoriented (van Rosmalen et al., 2014, 22). In high-risk populations, characterized by parental death, single mothering, poverty, trauma

and abuse, and substance abuse, the percentages of disorganized-disoriented attachments are much higher (80-90%; see Cyr et al., 2010).

Moreover, continuity in attachment classification over the lifespan has been mixed. Some studies indicate high continuity from infant attachment classifications to childhood, adolescence, and adulthood (over 70%), while some studies have indicated much lower continuity. However, the lower continuity studies usually have included high-risk populations. Recent interesting evidence also suggests that temperament and genetics may play a significant role in attachment by impacting the infant's "emotional reactivity to separation and capacity to read maternal signals" (Solomon and George, 2008, 389). As I will discuss later in this chapter and in Chapter II, the current consensus among attachment researchers is that early infancy attachment styles constitute "developmental pathways" that reflect complex contextual interactions between inborn genetic and temperamental factors, parental caregiving styles, and changing life and relationship circumstances across the lifespan (Solomon and George, 2008, 389-390; see Thompson, 2008). The mixed data on the continuity of attachment classifications over time are a reflection of these complex contextual interactions.

Main's Research on Adult Attachment Functioning

As noted, Bowlby maintained that attachment processes continue to influence psychological functioning "from the cradle to the grave" (Bowlby 1988, 82). Attachment relationships with spouses or close friends continue to remain important in adulthood. Attachment needs for emotional closeness, connection, and protection in adult pair bonds are not a sign of immaturity, but of mature interdependence (Mikulincer Shaver, 2007, 12). The main difference in adult attachment relationships versus mother-infant bonds is that both adult

attachment partners ideally function as safe havens and secure bases for the other. Moreover, the attachment system in adults can be dissociable from the sexual system, but ideally these are interrelated (Eagle, 2013, chapter 8). Finally, as stated above adults tend to use mental activation of IWMs to achieve a “symbolic proximity” to their attachment figures; however, adults still seek physical proximity to loved ones during times of severe crises, illness, or injury (Mikulincer and Shaver, 2007a).

While the first several decades of attachment theory research was dominated by empirical observations of infant-mother behavior, beginning in the 1980s AT researchers turned their focus to adult attachment processes, as well. The result has been thousands of empirical studies which assess current adult attachment functioning and which correlate its findings with the adults’ own attachment histories and with their current parenting styles (Mikulincer and Shaver, 2007a). In this section I will present Mary Main’s findings gathered from her Adult Attachment Interview instrument (AAI; Main et al., 1985).¹⁴ Main’s AAI is noteworthy for its analysis of adults’ *linguistic discourse* about their own attachment histories with their parents. Remarkably, Main discovered that how parents talk about their own attachment histories predicts the attachment classifications of their children. As we will see, this finding has been dubbed the “intergenerational transmission” of attachment styles.

Mary Main and the Adult Attachment Interview

Main created the AAI (Main, Kaplan, and Cassidy, 1985) as a tool to investigate whether parent’s general IWMs about their own childhood attachment correlated with their children’s

¹⁴ In the last two decades, adult attachment research has bifurcated into two traditions. The developmental psychology tradition, initiated by Mary Main’s development of the AAI (Main et al., 1985), has emphasized analyses of the narratives of adults’ reflections of their attachment experiences in childhood. The social-personality psychology tradition, represented by UC-Davis psychologist Phillip Shaver’s Experiences in Close Relationships scale (ECR; Shaver et al., 1998), has focused on self-report measures of current functioning in adult romantic attachment relations. Statistical analyses have revealed that the two assessment measures do not significantly correlate and appear to tap into different aspects of adult attachment functioning (see Roisman et al., 2007). I will present some of Shaver’s research in Chapter II.

attachment patterns. Main had prior training in linguistics, and the AAI is unique for its focus on analyzing the language use of the parent's account of their own attachment history (Hesse, 2008, 556). The AAI was the first attachment test to assess the mental representations or "current state of mind with respect to attachment" of adolescents and adults, rather than mother-infant behavioral observations as with the SS. Main called this focus a "move to the level of representation," and she viewed her work as providing empirical support for Bowlby's theory that IWMs are operable throughout life (Main et al., 1985, 66).

The AAI is a 20 question, hour-long, semi-structured interview. Parents are asked to recollect their own childhood attachment histories and to reflect on its influence on their subsequent personality and relationships (Main, Hesse, and Goldwyn, 2008; Hesse, 2008).¹⁵ The parent's responses are transcribed into verbatim narratives, and coded with multiple scales for a general attachment classification. The AAI interviewer first asks for 5 adjectives which describe each parent, and then for examples which provide evidence. Parents are then queried about early experiences of separation, loss, abuse, and rejection, and for reflection upon how attachment experiences have influenced current relationships and parenting styles. Like the Strange Situation test, the AAI is a "moderately stressful" situation designed to engage the interviewee's attachment system. The AAI seeks to "surprise the unconscious" to reveal "deeply internalized strategies for regulating emotion and attention" that manifest when parents reflect upon their own, often painful attachment relations with their caregivers (Hesse, 2008, 555; Main et al., 2008, 37, cited in Allen, 2013, 96). As Main summarizes,

the secure versus the various types of insecure attachment organizations can best be understood as terms referring to particular types of internal working models of relationships, models that direct not only feelings and behavior but also attention, memory, and cognition, insofar as these relate directly or indirectly to attachment.

¹⁵ See Appendix XX for published AAI questions.

Individual differences in these internal working models will therefore be related not only to individual differences in patterns of nonverbal behavior but also to patterns of language and structures of mind (Main et al., 1985, 66-67).

Fascinatingly, Main proposed that parents' current individual differences in attentional flexibility and affect regulation are reflected in the *discourse* found in their verbatim transcripts. The AAI coding protocol assesses these differences by focusing less on the actual experiences of the parent's attachment history (*content*), but on how "coherent" the parent's narrative is and how collaboratively he/she communicates with the interviewer (Main et al., 2008, 35). Main incorporated the four "maxims for cooperative, rational discourse" posited by the British philosopher of language, H. P. Grice (1975), into the AAI coding protocol to assess narrative coherence: 1) "Be truthful, and have evidence for what you say" (Maxim of Quality); 2) "Be succinct, and yet complete" (Quantity); "Be relevant to the topic as presented" (Relevance); and 4) "Be clear and orderly" (Manner) (Hesse, 2008, 557; citing Grice, 1975).

Main discovered that differences in the coherence of the parent's transcript, how collaboratively he/she communicated with the interviewer, and how positively he/she views the role of attachment in human functioning and development predict differences in the parent's general attachment security. To the degree that the Gricean maxims are adhered to, the individual is classified as "secure." To the degree that the maxims are violated (e.g., contradictions, slips, too little or too much detail, or even dissociation), the individual is classified as "insecure" (Hesse, 2008, 556). It is therefore the parent's discourse and collaboration that determine attachment, not the actual experiences in childhood. Those individual's with severe histories of

childhood trauma or abuse can still be validly classified as secure if they adhere to the maxims of cooperative discourse.¹⁶

Even more remarkably, Main's study found that the individual differences in parents' coherence and collaboration found in their AAI transcripts predicted the attachment classification of their infants, *even before the infant is born* (Fonagy, Steele, and Steele, 1991; van IJzendoorn, 1995). The ability to construct a coherent narrative of one's own painful childhood attachment experiences and to regulate one's emotions well enough to communicate this to an interviewer is linked to parents' actual ongoing attachment interactions with their infants. Main thus provided empirical evidence that adults' attachment styles are "transmitted" to the attachment patterns of their children (van IJzendoorn, 1995). Parents with secure-autonomous, dismissing, preoccupied, and unresolved/cannot classify AAI categories consistently have children with secure, avoidant, ambivalent, and disorganized/disoriented SS classifications, respectively. The discourse analysis of the AAI appears to tap into this transmission process.

AAI Classifications

Main's original study has been built upon over the years. The current consensus is that the AAI yields five adult attachment classifications: the organized classifications of *secure-autonomous*, *dismissing*, and *preoccupied*; and the disorganized classifications of *unresolved/disorganized* and *cannot classify* (see Main, Goldwyn, and Hesse, 2003). I will briefly describe each in turn, drawing upon presentations in Hesse (1999, 2008), Main and

¹⁶ There is controversy regarding whether those individuals with a history of childhood trauma who subsequently receive a secure AAI classification can be considered "earned secure." See Eagle (2013) and Roisman et al. (2002).

colleagues (2008), and Allen (2013). I will also present brief AAI narratives found in these sources, which illustrate each attachment category.

First, the *secure-autonomous* (coded F in Main's protocol) adult attachment is characterized by "coherent, collaborative discourse" and a positive view of human attachment (Hesse, 1999, 399). Fundamentally, the secure adult is able to provide an "understandable, emotionally engaged, and credible" narrative about his/her early attachments (Allen, 2013, 97). The secure adult can remember specific examples that support his/her characterizations (maxims of quality and relevance). They also evidence a sophisticated understanding of the fallibility of memories, personal biases, and differences in point of view (quality). Moreover, the secure adult's language has a certain "freshness," rather than a stale, rote, or clichéd quality (manner). Finally, the secure adult has a positive view of attachment relations in childhood, values interdependence in adulthood, and may indicate forgiveness or compassion for their parents or themselves (quality) (Hesse, 1999, 399; Allen, 2013, 97-100).

The following AAI attachment narrative (Hesse, 2008) illustrates the secure-autonomous attachment. The participant has described his mother with the adjective of "loving," and is asked to provide a specific example:

Participant: Loving . . . (5-second pause) I don't know if this is the sort of thing you're looking for, but one thing that comes to mind is the way she stuck up for me when I got in trouble at school. Boy, if I told her about some problem at school and she thought I was in the right, or if I told her some kid or some teacher had treated me bad, she'd go out and investigate and she'd stick up for me to the teacher, or to the kid's parents, or . . . anybody, really. I could put it another way, too. I just knew where I stood with her, and that she'd be comforting if I was upset or crying or something.

Interviewer: Thank you (*interrupted*).

Participant: (*Interrupting and continuing*) Oh, you wanted a specific example. Um, that time I set fire to the garage, using my brother's chemistry set I absolutely positively wasn't supposed to use. Came running when the

neighbors phoned the fire department about the smoke. Expected to get the life lectured out of me, but she just ran straight for me and picked me up and hugged me real hard. Guess she was so scared and so glad to see me, she just forgot the lecture. Later there were little hints at the dinner table about the incident, but I'd say, basically, what she did that time—that was very loving (Hesse, 2008, 558-559).

In commenting on this narrative, Hesse notes that this interviewee has largely adhered to the Gricean maxims for coherent, rational discourse. The interviewee has adhered to the maxim of quality by providing a specific and detailed anecdote of his mother being “loving”; and to relevance and manner as “the speaker is easy to follow and stays on topic” (Hesse, 2008, 559). The interviewee violates the maxim of quantity by interrupting the interviewer and continuing with the narrative, but uses the extra time to provide a specific example. These features are consistent with the secure-autonomous classification.

Second, the *dismissing* (D) adult attachment is characterized by narrative incoherence and a “general dismissal” of the importance or influence of attachment relations (Hesse, 1999, 399). The transcripts of dismissing adults contain contradictory depictions of their attachment experiences in childhood. For example, dismissing adults may idealize their mothers as “very loving,” while providing contradictory examples of trauma or neglect (violation of quality); may deny remembering their childhoods and may provide few or no specific examples (violation of quality, quantity); and may provide brief narratives with intellectual and abstract language (violation of quantity, manner). Dismissing adults may also deny the impact of early attachment relations on their personality and dismiss any need for emotional closeness and support, celebrating strength and independence instead. In sum, dismissing adults appear to *deactivate* their attachment system and defensively minimize attachment needs in order to cope with the pain caused by their history of unavailable attachment figures (Mikulincer and Shaver, 2007; Allen, 2013, 102-103).

Hesse (2008) offered this narrative to illustrate the dismissing adult attachment. Like the first example, this participant has also described his mother with the adjective of “loving,” and is asked to provide a specific example. Hesse’s comments are in brackets:

Participant: I don’t remember...(5-second pause). Well, because she was caring and supportive. [Notice that here the speaker is simply using similar words to describe the previous words. In essence, the speaker is repeating the word rather than answering the question.]

Interviewer: Well, this can be difficult, because a lot of people haven’t thought about these things for a long time, but take a minute and see if you can think of an incident or example.

Participant: (10-second pause) Well...(5-second pause), I guess like, well, you know, she was really pretty, and she took a lot of care with her appearance. Whenever she drove me to school, I was always really proud of that when we pulled up at the playground.

Interviewer: Thank you. And, I just wonder whether there might be another example?

Participant: No, I think that pretty much takes care of it (Hesse, 2008, 558).

In his comments, Hesse states that this participant has violated multiple Gricean maxims. Hesse notes that while the speaker tries “to convey a positive impression” of the mother, the “paucity” of examples and reflection suggests that “something psychologically quite complex is taking place” (Hesse, 2008, 558). The participant violates the maxim of quality by failing to provide any detailed examples of the mother acting “loving”; the response is brief and superficial, violating quantity and manner; and the narrative’s brevity and paucity may indicate that the participant is unconsciously directing attention “away from the topic of childhood experiences with the mother” (Hesse, 2008, 558). These features are consistent with dismissing attachment.

Third, the *preoccupied* (E) adult attachment is characterized by narrative incoherence and an intense “preoccupation” with past attachment relations (Hesse, 1999, 399). The AAI interview

questions appear to flood preoccupied adults with intense, negative memories and emotions regarding past attachment care. Their affect is either agitated or passively confused, and preoccupied adults appear absorbed in past memories rather than the interview at hand (Hesse, 1999, 398). As a consequence, the transcripts of preoccupied adults are filled with rambling and excessively detailed rants that perseverate on past parental abuses and sins (violation of quantity); may shift into the present tense, digress into discussions of present relationships, or oscillate between positive and negative descriptions (violations of quality, relevance); and can contain “grammatically entangled” sentences or vague words (violation of manner). In sum, preoccupied adults appear to *hyperactivate* their attachment system because of their history of radically inconsistent parental care, which leads to intense and maladaptive relationships (Mikulincer and Shaver, 2007a; Allen, 2013, 100-102).

Hesse (2008, 562) provided the following AAI narrative that illustrates the preoccupied adult attachment. In this vignette, the interviewer asks the participant to reflect upon his childhood attachment relationships and consider what “overall effects” they may have had on his personality development:

Interviewer: What effects do you think your experiences with your parents have had on you?

Participant: I guess I'd have to say it affected me, you know, in almost every way, like I've been telling you about with my mother—you know, everything. It's a constant. It's something that made me completely change, shape, the way that I approach my own children. You know, like, my mother will come over and she'll say, “Why are you letting Angela run around like that and make all that noise?” and I'm like, “You raised me the way you did, and put all these constraints on me and constantly told me what to do, so I'm giving her space to be herself,” you know? And with my mother, it's just like that.

Interviewer: Do you think this was a setback to your development?

Participant: Well, I'd have to say the whole thing was a setback. I mean, it's taken me years to get past it, to get to where I am now, today (Hesse, 2008, 562).

Hesse states that this participant has also violated multiple Gricean maxims (Hesse, 2008, 562). The participant violates the maxim of quality by failing to provide detailed examples of the effects of his attachment experiences on his personality development; and the maxim of relevance and manner by angrily inveighing against his mother for her behavior in the past and present. The speaker also appears too emotionally enmeshed and absorbed in past and present experiences with his parents to collaborate during the AAI interview (Hesse, 2008, 562). These features are consistent with preoccupied attachment.

Fourth, the *unresolved/disorganized* (U) adult classification is characterized by a "striking lapse in the monitoring of reasoning or discourse" when discussing traumatic experiences (Hesse, 1999, 399). The transcripts of unresolved/disorganized adults evidence transitory mental "slips" when discussing loss, trauma, or abuse. These lapses may indicate "temporary alterations" in consciousness or working memory, such as "interferences" from dissociated memories or beliefs, or "absorptions involving memories triggered" by the AAI questions (Main et al., 2008, 61). For example, individuals' responses may violate norms of physical causality, such as believing the dead are physically alive or that thoughts have physical effects; or drift into perseverative thought or "eulogistic speech." Because these lapses only appear when discussing traumatic events, a "best-fitting" organized attachment category is also assigned (e.g., disorganized/preoccupied). Finally, as will be discussed in Chapter II, unresolved/disorganized attachment is associated with severe psychopathology, such as personality and dissociative disorders (Hesse, 1999, 399; Main et al., 2008, 61-62).

Main and colleagues (2008) provide the following three brief AAI narrative vignettes that illustrate aspects of the unresolved/disorganized attachment:

Participant: I'm still afraid he died that night because I forgot to think about him. I promised to think about him and I did, but that night I went out, and so he died.

Participant: She was young, she was lovely, she was dearly beloved by all who knew her, and who witnessed her as she was torn from us by that most dreaded of diseases, tuberculosis. And then, like a flower torn from the ground at its moment of splendor....

Participant: He died 32 years ago last month, on March 1, a Monday, right before his 32nd birthday. It was a spring day, and I remember when I rode to the hospital, I took the bus, and then I got off at LaForge Street, and then I turned down Gamercy, and then suddenly I was there at Washington, and... (Main, Hesse, and Goldwyn, 2008, 61-62).

In their comments, Main and colleagues (2008) state that the first vignette shows evidence of a lapse in reasoning. The speaker indicates that his/her thoughts may have caused a death. Main speculates that this may be an "intrusion" into the speaker's mind of a childhood belief associated with the loss (61). By contrast, the second and third vignettes show lapses in discourse. The second speaker appears to slip into a "eulogistic or funereal manner of speaking," while the third speaker's narrative becomes derailed into "excessive attention to detail" irrelevant to the question. All of these features are consistent with the unresolved/disorganized adult attachment (Main et al., 2008, 61-62).

Fifth and finally, the *cannot classify* (CC) adult attachment is characterized by the presence of contradictory aspects of multiple attachment classifications (Hesse, 1999, 405). For example, a CC adult's transcript may contain idealized descriptions of his mother during the beginning of the interview (supporting a dismissing attachment classification), while later engaging in a negative tirade against the mother's abuse and neglect (supporting a preoccupied

classification). As these discourses are contradictory and make classification impossible, Main and colleagues created the CC classification and hypothesized that the narrative contradictions reflected severe levels of insecurity and a history of trauma or abuse (Hesse, 1996; Hesse, 2008, 572). This classification awaits further empirical investigation.

AAI Empirical Data

As with the Strange Situation test, a huge amount of data has accumulated using the AAI. I will give a few brief findings that illustrate this research. Meta-analyses report that the percentage of secure adult attachments in non-clinical populations is 56%; dismissing is 25%; and preoccupied 18%. If the unresolved classification is included, the percentages shift to secure 55%; dismissing 19%; preoccupied 10%; and unresolved 14% (Crowell, 2014, 148; citing van IJzendoorn and Bakermans-Kranenburg, 2008). Moreover, dismissing attachment is over-represented in adolescents, rising to 27%. Finally, in clinical/high-risk populations the percentages of the unresolved and cannot classify categories increase dramatically: secure 26%; dismissing 21%; preoccupied 13%; and combined unresolved/CC 41% (Crowell, 2014, 148; citing van IJzendoorn and Bakermans-Kranenburg, 2008).

Longitudinal studies have also investigated the correspondence between individuals' infant SS classifications and their later AAI attachment classifications as adolescents and adults. Several studies have indicated a high level of 70-75% correspondence (Waters et al., 2000, Hamilton, 2000; cited in Crowell et al., 2008, 606), while other studies indicated much lower correspondence (e.g., Fraley, 2002; cited in Crowell et al., 2008, 606). As with infant SS research, those adults whose AAI classifications differed from their infant SS classifications have usually encountered significant changes in life circumstances over the years (e.g., death of a caregiver, parental or personal divorce, severe poverty, or serious illness).

The AAI and Intergenerational Transmission of Attachment

As noted, the most spectacular finding of the AAI is the power of parents' AAI scores to predict their infants' SS classifications. In van IJzendoorn's (1995) meta-analysis of 18 studies, the percentage of correspondence between parental AAI classifications and infant SS classifications was 75% (effect size $d = 1.06$; kappa = .46, $n = 661$; van IJzendoorn, 1995, 387). According to standard criteria, this effect size and correspondence percentage are considered "very large." As van IJzendoorn notes, these results are all the more impressive because of the differences in methodologies between the tests: mother-infant behavioral observations in the SS, and a semi-structured interview with coded discourse analysis in the AAI (van IJzendoorn, 1995, 396).

Exactly how and why this remarkable correspondence occurs has been the subject of extensive analysis and debate. The traditional answer provided by Ainsworth and colleagues (1978), drawing on Bowlby's theories, was the variable of "maternal sensitivity." Ainsworth had originally defined maternal sensitivity as "the mother's ability to perceive the infant's Signals accurately, and the ability to respond to these Signals promptly and appropriately" (Ainsworth et al., 1974; cited in De Wolff and van IJzendoorn, 1997). However, another major meta-analytic study by van IJzendoorn in 1997 determined that while maternal sensitivity did predict infant security, its effect size was only moderate ($r = .24$, $n = 1097$; De Wolff and van IJzendoorn, 1997, 571). In other words, maternal sensitivity accounted for less of the total variance in predicting infant attachment security than Ainsworth assumed. Other unknown factors must also

play significant roles. Van IJzendoorn referred to this finding as the “transmission gap,” and hundreds of subsequent studies have attempted to “fill” this gap (see Eagle, 2013).¹⁷

AAI Metacognitive Monitoring and Mentalization

Mary Main attempted to fill the transmission gap by using constructs from her AAI test. In developing the AAI, Main and colleagues (1985) created several “state of mind” continuous scales to measure adult secure and insecure attachment. The two “state of mind” scales for the secure-autonomous category were “coherence of transcript” and “metacognitive monitoring” (Hesse, 2008, 565). As we have seen, coherence refers to adherence to Grice’s four maxims of rational conversation. For the concept of metacognition, Main drew upon the “theory of mind” research in cognitive and developmental psychology. Metacognition refers to thinking about thinking, or “possessing a mental representation [and] being able to reflect on its validity, nature, and source” (Main, 1991, 128). Main and colleagues (2008) provide a succinct analysis of metacognitive monitoring and its three underlying facets, which they measured using the 2003 AAI coding protocol:

For high ratings on this scale, evidence of active monitoring of thinking and recall is evident in several places within the interview. Thus, the speaker may comment on logical or factual contradictions in the account of his or her history, possible erroneous biases, and/or the fallibility of personal memory. Underlying metacognitive monitoring (Forguson & Gopnik, 1988) is active recognition and acceptance of an *appearance-reality distinction* (the speaker acknowledges that experiences may not have occurred as they are being presented), *representational diversity* (the speaker remarks that a sibling does not share his or her view of the father), and *representational change* (the speaker remarks that what is said today might not have been said yesterday) (Main, Hesse, and Goldwyn, 2008, 54).

¹⁷ De Wolff and van IJzendoorn (1997, 575) hypothesized that the other moderating variables may be synchrony, mutuality, a positive attitude, emotional support, and stimulation. Their description converges with the relational and intersubjectivity developmental perspectives I will discuss in Chapter II.

In sum, Main's AAI research indicated that an adult's ability to be reflectively aware of and monitor the "meta-representational" qualities of his/her cognitive thought processes (i.e., the *appearance-reality distinction*, *representational diversity*, and *representational change*) and to use this knowledge in the collaborative discussion of childhood attachment experiences with the interviewer was a major determinant of that individual's attachment security. Moreover, the metacognitive monitoring capacity, along with coherence, was crucially connected to the adult's parenting interactions and bond with his/her infant, as well as the intergenerational transmission of the adult's attachment processes to his/her infant.

Of major importance for this dissertation, Peter Fonagy's mentalization theory can be considered, in part, as an extension of Main's work on the AAI and the capacity of metacognition. Specifically, Fonagy and colleagues wedded Main's research on the metacognitive monitoring of one's own mental processes with the theory of mind and social cognition research literature on "mentalizing" the thoughts and feelings of other people (Fonagy et al., 2002; Steele and Steele, 2008). Moreover, an early project by Fonagy and colleagues (1991) was the first to discover that parental AAI attachment predicted their infant's SS classification even *before* the birth of their child. Throughout the intervening years, Fonagy has hypothesized that mentalization may help "fill the gap" in the intergenerational transmission of adult to infant attachment styles (e.g., Fonagy et al., 2002; Fonagy and Target, 2005a). I will discuss Fonagy's mentalization model and its origins in detail in Chapter III.

The Stability of Attachment Styles Throughout the Lifespan

Finally, as indicated above the stability of attachment classifications between infant and childhood assessments of SS classification and between infant Strange Situation and later

adolescent and adult AAI classifications is mixed. Some studies indicate high levels of stability over time (over 70%) while other studies indicate much lower correspondence (40-50%) (see Thompson, 2008). These findings, which were collected in rigorous longitudinal studies and chronicled in Grossman, Grossman, and Waters (2005), did dispel some predictions of attachment theory that have existed since Bowlby's original theories. Most notably, the hypothesis that early infant attachment plays a "template" role by directly determining adult attachment function appears to be in need of revision. Infant attachment classifications do appear to have a moderately significant predictive effect on later adult functioning. However, it is clear that attachment is only one of a number of important variables that interact to produce adult attachment functioning (Grossman et al., 2005; Fonagy, 2015; Luyten, 2015). Genetics and temperament also play a major role, as well as the individual's changing environmental context, such as divorce, poverty, parental abuse, parental substance abuse or other "high risk" factors (see Thompson, 2008; Weinfield et al., 2008).

These somewhat surprising longitudinal results support an "interactionist" or transactional model of human development that emphasizes gene by environment (epigenetic) contextual interactions (Sroufe et al., 2005; Jablonka and Lamb, 2005; Fraley and Roberts, 2005; Fonagy, 2015). A growing consensus among developmental science theorists is that early caregiver parenting patterns, caregivers' own attachment styles, infant genetics and temperament, and early environmental circumstances interact in a complex, dynamic manner and coalesce into infants' attachment styles and IWMs. These early attachment styles then initiate "developmental pathways" that contextually interact with changing life and relationship circumstances across the lifespan (Solomon and George, 2008, 389-390).

These developmental pathways and “interactionist” models are consistent with the extended evolutionary synthesis, extended evolutionary psychology, and developmental psychopathology paradigms I discussed in the Introduction (e.g., Pigliucci and Muller, 2010; Stotz, 2014; Cicchetti, 2016). In all of these models, human development is a complex reciprocal interaction between genetics, temperament, early maternal caregiving, the caregiver’s attachment style, resulting habitual neuro-psychological processes, and changing life and relationship experiences. Attachment development from infancy to adulthood, as well as attachment “transmission” from parent to child, thus turns out to be a much messier and more complicated process than Bowlby ever originally imagined.

The “good news” of these results, however, is that the imperfect prediction from infant to adult attachment reaffirms that human beings *can change*. Human beings are not simply a product of their environment OR a product of their genes. While negative changes in life circumstances and maladaptive relationships can detrimentally influence attachment styles, the reverse is also true. Positive, corrective experiences in childhood, adolescence or adulthood, whether through a positive marriage, a fulfilling job, satisfying close friendships, and, as I assert in this dissertation, through psychotherapy and contemplative practices like meditation, can have a salubrious effect on human functioning and wellbeing (see Bowlby, 1988, 135).

Yet despite this good news and the emerging theoretical and methodological consensus among attachment researchers, it is important to note that not all academic psychology researchers share the same level of enthusiasm for attachment theory. Over the last fifty years, many prominent developmental, physiological, and social psychology researchers have challenged and critiqued attachment models and theories. One of the most longstanding and vocal critics of attachment theory has been the eminent Harvard professor of psychology

emeritus, Jerome Kagan. For thirty years, Kagan has consistently argued that infant temperament does a better job in explaining infant and child development patterns, rather than parental caregiving styles and attachment (e.g., Kagan, 1984, 2013). Because Kagan's analysis pertains to inborn physiological factors, I will wait to assess his critiques at the end of Chapter II, after I explicate the modern physiological and developmental neuroscience models of attachment.

A feature of attachment behaviour of the greatest importance clinically, and present irrespective of the age of the individual concerned, is the intensity of the emotion that accompanies it, the kind of emotion aroused depending on how the relationship between the individual attached and the attachment figure is faring. If it goes well, there is joy and a sense of security. If it is threatened, there is jealousy, anxiety, and anger. If broken, there is grief and depression. Finally there is strong evidence that how attachment behaviour comes to be organized within an individual turns in high degree on the kinds of experience he has in his family of origin, or, if he is unlucky, out of it.

John Bowlby, *A Secure Base*, 1988, 3

CHAPTER II:

ATTACHMENT STYLES AND NEUROBIOLOGY

In Chapter II, I will now turn to describing recent research on the four major attachment styles of secure, anxious, avoidant, and disorganized attachment, as well as their possible neurobiological substrates. I will describe the origins of each style in characteristic parent-infant interaction patterns; the prominent internal dynamics, IWMs, and defensive processes associated with each style; and the positive, negative, or psychopathological life outcomes that correlate with the four styles. The chapter will then close with a presentation of several “modern” physiological and developmental neuroscience models of attachment theory that have begun the complex task of elucidating the neurobiological substrates of the mother-infant attachment bond and the child’s developing self- and affect regulation processes.

Introduction to Attachment Styles

In the next four sections, I will proffer a detailed view of the four attachment styles. I will largely draw on the research of the UC-Davis psychologist and attachment researcher, Phillip Shaver, to flesh out these ideas in more detail. Over the last twenty years, Shaver and his main collaborator, Mario Mikulincer, have developed an influential social-personality psychology model of adult attachment system functioning (Mikulincer and Shaver, 2007a; 2008). Peter Fonagy has incorporated their model into his most recent mentalization theory and mentalization-based therapy models (e.g., Fonagy and Luyten, 2016).

Shaver's model derives from research with his Experiences in Close Relationships scale (ECR; Shaver et al., 1998). The ECR is a 36-item self-report measure that assesses experience in current adult romantic relations. The ECR differs from the AAI in yielding two major *dimensions* of attachment insecurity (anxiety and avoidance), rather than four set categories. Attachment is depicted in a two-dimensional space with four quadrants: secure attachment is the absence of anxiety and avoidance; anxious individuals have high anxiety and low avoidance scores; avoidant individuals are the reverse; and fearful avoidant individuals are high in both anxiety and avoidance (see Mikulincer and Shaver, 2007a, Chapters 2 and 4).

One advantage of self-report scales is the ability to measure the dimensional *strength* of attachment security and insecurity, which can be better correlated with other psychiatric research (Eagle 2013, 52-55). One drawback is that self-report scales measure *conscious* thoughts and feelings about attachment relations, and thus may not, in distinction to the AAI, measure unconscious processes and IWMs (Roisman et al., 2007). However, Shaver argues that his subliminal priming research demonstrates that the ECR does measure unconscious processes (Mikulincer and Shaver, 2007b; Mikulincer et al., 2009). Fascinatingly, statistical analyses have

also revealed that the AAI and ECR do not significantly correlate. They thus appear to tap into two different yet equally relevant aspects of adult attachment functioning (see Roisman et al., 2007).

I have reproduced Mikulincer and Shaver's (2007a, 31) graphic representation of their model in Figure 4. The reader is invited to refer back to this graph during the expositions below.

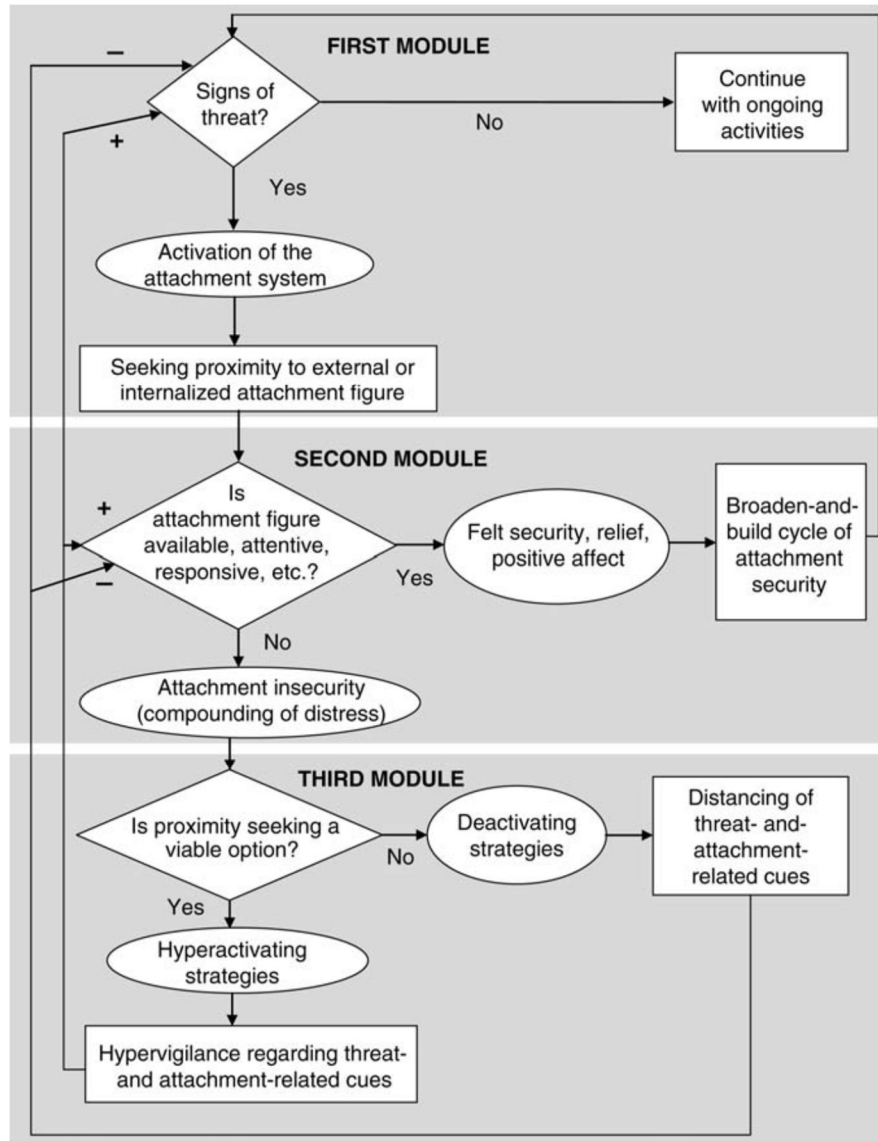


Figure 4. Mikulincer and Shaver's Model of Adult Attachment System Functioning¹⁸

Secure Attachment Styles in Childhood and Adulthood

The first attachment style I will explicate is the secure attachment style. As I noted in the last chapter, Mikulincer and Shaver (2007a, 22) have termed the individual differences in infants' attachment systems that result from their histories of interactions with attachment figures

¹⁸ Reproduced from Mikulincer and Shaver (2007a, 31): "FIGURE 2.1. A model of attachment-system activation and functioning in adulthood." In Mario Mikulincer and Phillip R. Shaver, *Attachment in Adulthood: Structure, Dynamics, and Change* (New York: Guilford Press, 2007a).

as “attachment styles.” Attachment styles are the most typical “patterns of expectations, needs, emotions, and social behaviors” of individuals’ attachment systems that activate across most relationships.

Securely attached individuals are likely to have had histories of available, sensitive, and responsive interactions with their attachment figures. They can successfully engage in “primary attachment strategies” (Main, 1990) to attain proximity, protection, and comfort from their attachment figure in times of stress and danger. When a sense of “felt security” is attained, the attachment system deactivates and the individual can resume exploring the environment and developing life skills. In infants and children, primary attachment strategies can include smiling and crying. Adolescents and adults still seek proximity with loved ones and close friends when suffering losses or illness. However, they can also regulate their emotions through the “symbolic activation” of soothing and comforting images, thoughts, and emotions (IWMs) of positive interactions with their attachment figure (Mikulincer and Shaver, 2007a, 13).

Internal Dynamics and IWMs of Secure Attachment

According to Mikulincer and Shaver’s research (2007a, 2008), when individuals appraise a situation as stressful or threatening, the attachment system automatically activates in a two-stage process (see Figure 4). First, the appraisal of threat triggers the “preconscious activation” of the attachment system. This takes the form of an increase in the “mental accessibility” of unconscious schemas, thoughts, images, memories, and emotions related to our history of attachment relations. These preconscious activations color, shape, and potentially bias our mental states, outside of our awareness. In the second stage, if the threat posed and the preconscious activations are “sufficiently robust,” the attachment-related schemas manifest in consciousness

as thoughts, behavioral intentions, and actual behaviors to seek proximity, protection, and support from our loved ones (Mikulincer and Shaver, 2008, 507).

In the case of secure individuals, their history of interactions with available, sensitive, and responsive attachment figures have led to the internalization of positive IWMs of self and others (Mikulincer and Shaver, 2008, 507). Secure individuals have positive views of their own sense of worth and “lovability,” based on the love and care provided to them by their attachment figures when distressed; and positive views of the availability and responsiveness of their loved ones in effectively protecting and soothing them when needed. They have also internalized the protecting, soothing, and loving functions performed by their attachment figures into their own sense of self.¹⁹ As a result, when secure individuals appraise a situation as threatening, the activation of the attachment system yields a “heightened access to mental representations of available and responsive attachment figures; episodic memories of supportive and comforting interactions with these figures; thoughts and images related to closeness, love, comfort, relief, and support; and proximity-seeking goals” (Mikulincer and Shaver, 2008, 507).

Secure individuals are then able to “mobilize” these conscious or unconscious loving memories and internalized qualities of the self as resources to self-soothe and “down-regulate” their emotional distress. In technical terms, secure individuals can obtain an intrapsychic state of “symbolic proximity” to their loved ones through the activation of self-and other-representations. These activations “provide genuine comfort and relief during times of stress,” and help them to cope with the stressful situation at hand (Mikulincer and Shaver, 2007a, 162). Moreover, if the

¹⁹ Shaver uses terms quite similar to Kohut’s concept of “selfobjects” (1971): “activation of the attachment system during times of need can evoke (1) mental representations of oneself (including traits and feelings) derived from interactions with previously available and responsive attachment figures (*self-in-relation-with-a-security-enhancing-attachment figure*) and (2) mental representations of oneself derived from identifying with or introjecting (to use the psychoanalytic term), features and traits of one or more caring, supportive attachment figures (*self-caregiving representations*)” (Mikulincer & Shaver, 2007a, 35).

situation is sufficiently threatening, secure individuals will approach their attachment figures and express their requests for protection and care, with the confidence that their loved ones will be available and sensitively responsive to their needs.

Research on Positive Lifespan Outcomes of Secure Attachment

Although not a guarantee of psychological health, several decades of empirical research demonstrates that secure attachment is associated with a wide range of positive outcomes throughout the lifespan. Secure attachment correlates with the development of affect regulation skills, coping skills, and adult relationship satisfaction. It can also act as a buffer or “protective factor” that meliorates adverse environmental events such as losses or divorce (Grossman et al., 2005). Drawing on Barbara Fredrickson’s model (2001), Shaver explains these outcomes as the result of a virtuous “broaden-and-build” cycle of attachment security. This cycle is “a cascade of mental and behavioral events that augment a person’s resources for maintaining emotional stability in times of stress, encourage intimate and deeply interdependent bonds with others, maximize personal adjustment, and expand the person’s perspectives and capacities” (Shaver and Mikulincer, 2009, 32). Long-term interactions with loving and sensitive caregivers result in “enduring effect[s] on intrapsychic organization and interpersonal behavior.”

As noted in the last chapter, a vast research literature attests to the positive social and psychological benefits of secure attachment in infancy, childhood, and adulthood (Grossman et al., 2005; Allen, 2013). A few key highlights will illustrate this literature. Compared with insecurely-attached children, secure children are more able to collaboratively regulate their emotions in tandem with their primary caregivers, and on their own. They are judged by their teachers and peers as more confident, socially competent, empathic, and nurturing (Allen, 2013, 51). Secure children also show higher levels of moral/conscience development, appraise their

peers as likeable and benign, and are more successful in forming and maintaining close relationships with siblings, friends, classmates, and teachers. Finally, secure children are rated as more curious and skilled in problem-solving than the insecure, are more advanced in cognitive development, and perform better at school (Allen, 2013, 51; see Howe, 2011).

As discussed in Chapter I, secure attachment in adulthood can be result of the persisting effects of positive childhood attachment relations, or the result of new attachment experiences as adults (Thompson, 2008). Research indicates that secure adults are more skillful than the insecure in managing their emotions during stressful situations and in restoring a sense of equanimity. They experience longer periods of positive emotions, and fewer experiences of depression and anxiety (Shaver and Mikulincer, 2009, 32-33). Secure adults are more likely to construct positive and optimistic appraisals of stressful situations, which allow them to cope with life's problems more effectively. They score higher on measures of self-esteem and competence, and view themselves as valuable and loveable due to being valued and loved by others. The secure are also less likely to rely on psychological defenses that distort their perceptions and limit their options for coping, and score higher on measures of curiosity, exploration, and cognitive flexibility (Shaver and Mikulincer, 2011, 173-174).

In their personal relations, the secure use positive terms to describe their relationship partners and perceive their partners as supportive and trustful. They have fewer worries about being criticized, rejected, or abused by their partners, and score higher on measures of relationship self-disclosure, support seeking, intimacy, and relationship satisfaction. Finally, securely-attached adults score higher on measures of responsiveness and supportiveness of their partner's needs, and show higher levels of compassion and a willingness to help strangers who are suffering (Shaver and Mikulincer, 2009, 33-34; Shaver and Mikulincer, 2011, 173-174).

Research on Mental Health Outcomes

As a result of these social and positive psychological benefits, secure children and adults tend to have positive mental health. As discussed, the broaden-and-build cycle of attachment security promotes positive emotions and affect-regulation skills, positive coping and appraisal skills, and close, supportive interpersonal relationships. These factors appear to buffer the negative effects of challenging life events, such as loss and divorce. As a result, secure individuals report higher levels of mental wellbeing, lower levels of distress, and normal cortisol production, a stress hormone. As Howe (2011, 93) summarizes, “low stress, normal cortisol production, high reflective function, and good quality relationships equate with the increased chance of enjoying good mental health.”

Clinical Vignette

To illustrate the internal dynamics and positive life outcomes of secure attachment, I will reproduce the following vignette provided by Daniel Siegel, a UCLA psychiatrist and attachment researcher. Siegel writes about his own medical school colleague, “Rebecca”:

My colleague Rebecca came to her postgraduate medical training after a hard-won battle with a history of abuse. She was the fifth of seven children born to an alcoholic mother and a father with bipolar illness, and her family life was filled with chaos and instability. She never knew what condition her mother would be in from day to day; her father, who refused mood-stabilizing medications, careened between mania and depression. When we were on call together late at night in the hospital where we worked, she’d tell me how her siblings and she would hide in the attic, where her oldest sister, Francine, would read them stories by flashlight while their mother raged downstairs. Francine would huddle with Rebecca, holding her and the others and pretending they were “camping out” during those emotional hurricanes. “Life was a nightmare,” Rebecca said, “and we never really knew when we’d wake up.”

Yet to me Rebecca seemed incredibly calm, notable for her ability to handle complex situations both with our psychiatric patients and with our fellow residents, one-on-one or in intense group discussions. One day I asked her: How did she make it through?

“It wasn’t easy,” I remember her telling me, “but besides my own sister, my mother’s sister Debbie saved my life. She helped me see that I wasn’t crazy. And even when I couldn’t go to my aunt’s house, she was always there for me. I knew I was inside her heart” (Siegel, 2010, 166).

Rebecca’s story illustrates many of the major themes and dynamics of attachment security I have presented in the last two chapters. Despite her history of trauma and abuse, Rebecca clearly evidences characteristics of attachment security. Referring back to Main’s AAI research (Main et al., 2008; Hesse, 2008) presented in Chapter I, Rebecca’s narration of her history to Siegel evidences higher levels of coherence, collaboration, specificity, and emotional engagement. She does not dissociate when relating her past. Moreover, Rebecca details how, in the midst of her chaos at home, she still had one loving, caring aunt who mirrored and comforted Rebecca during her times of distress. According to Shaver’s model, it is likely that Rebecca was able to internalize the aunt’s protecting, soothing, and loving functions into her own sense of self. When Rebecca experienced chaos and terror, she may have been able to access and activate the loving and caring mental representations of her aunt to use as a buffer against the trauma and fear (Mikulincer and Shaver, 2007a, 2008).

To sum up the internal and interpersonal dynamics of the secure attachment style, I will quote Shaver succinct, insightful description:

As reviewed here, actual or imagined (i.e., symbolic) interactions with supportive attachment figures move a person toward the ideal advocated by positive psychologists—a calm, confident person with an authentic, solid sense of personal value; a person who is willing and able to establish intimate, caring relationships and take risks to help others and to broaden his or her skills and perspectives. Following Bowlby’s (1988) lead, we conclude that attachment figure availability acts as a growth-enhancing psychological catalyst, fostering prosocial motives and attitudes and promoting personal development and improved relationships (Mikulincer and Shaver, 2007a, 70).

Introduction to Insecure Attachment Styles

Next, as was delineated in the last chapter, insecure attachment styles are engaged in by infants and adults because the primary attachment strategies to seek proximity and emotional security have failed, due to the unavailability, insensitivity, and/or unresponsiveness of the attachment figure. Suboptimal “secondary attachment strategies” are performed instead, which defend against the psychological pain caused by the caregiver’s unavailability and which maintain the attachment bond (Main 1990, 56-57). Synthesizing the assessment research, Mikulincer and Shaver (2007a) identified two major forms of insecure attachment (see Figure 4 above). Anxious children have experienced inconsistent and intrusive parenting styles; as a response, they “hyperactivate” the attachment system to coerce better parental attention and care. Avoidant children, in contrast, have experienced parents who reject and punish their bids for attachment. They respond by “deactivating” the attachment system and minimizing their attachment needs to maintain connection with the parent (2007a, 25-26).

As we will see, insecure attachment styles are associated with significant adjustment, emotional regulation, and interpersonal problems throughout the lifespan. Insecure styles are also “potential risk factors” for later psychopathology (Sroufe, 2005, 359). However, it is important to note from the outset that while maladaptive in adult relationships, insecure styles are considered to be within the “normal range” of functioning. They were reasonable adaptations to their unavailable and insensitive caregivers. Insecure strategies at least allowed the child to form a “workable relationship” with the parents, which ensured survival with some modicum of protection and support (Mikulincer and Shaver, 2011, 174; see Simpson and Belsky, 2008).

The Anxious Attachment Style in Childhood and Adulthood

The first insecure style I will present is the anxious attachment style. Bowlby considered the anxious style to be a “protest” reaction to the frustration of attachment needs, analogous to the physiological “fight” response to danger and fear (Bowlby, 1982, 26; cited in Mikulincer and Shaver, 2007a, 22). Anxious infants (and later, adults) have experienced unpredictable, inconsistent, intrusive, and only partially responsive interactions with their caregivers. The caregiver sometimes provides adequate protection and comfort when the child is distressed. At other times, the caregiver may “mis-attune” with the child’s attachment needs, intrude upon and punish the child’s “autonomous” attempts at coping, or convey that the child is “stupid, helpless, incompetent, or weak” (Mikulincer and Shaver, 2007a, 40). The infant’s proximity bids are thus met with an “unpredictable partial reinforcement schedule” of parental care. The child is not comforted for the original distress; and the caregiver’s inconsistency and intrusiveness adds a whole new level of psychological pain and frustration.

As an unconscious or conscious defensive response, the child learns to chronically *hyperactivate* or “turn up the volume” on the attachment system through “the use of energetic, strident, noisy proximity-seeking strategies” (Shaver and Mikulincer, 2011, 168). The aim is to force the caregiver to provide better attention, care, and support. Anxious strategies can include “overdependence on a relationship partner for comfort; excessive demands for attention and care; strong desire for enmeshment or merger; attempts to minimize cognitive, emotional, and physical distance from a partner; and clinging or controlling behavior designed to guarantee a partner’s attention and support” (Mikulincer and Shaver, 2007a, 40). Because anxious parents sometimes do respond to these dramatic demands for care by their anxious children, the strategies seem to work. However, at heart the anxious attachment style reflects a failure of parental “co-

regulation” of the child’s emotional needs. Ultimately, this disrupts the development of emotion regulation skills and impedes mature, stable relationships later in life.

Internal Dynamics, IWMs, and Defenses of Anxious Attachment

To provide more detail of the internal dynamics of the anxious style, I will return to Mikulincer and Shaver’s model (2007a, 2008) of adult attachment (see Figure 4). Shaver’s research indicates that unreliable, intrusive, and infantilizing interactions with caregivers have led anxious individuals to internalize negative, distorted IWMs of self and others. The anxious perceive themselves as unlovable, helpless, dependent, and weak. Their IWMs of others, though, are more complex. Loved ones are experienced as unpredictable and untrustworthy; but the anxious still see them as “stronger and wiser,” long for their protection and care, and believe it can be corralled with intensive demands (Mikulincer and Shaver, 2007a, 170).

As a result, when anxious individuals appraise a situation as threatening, the activation of the attachment system yields a “heightened access” to intense emotions like sadness, anger, and jealousy and an “uncontrollable stream” of negative memories, thoughts, and worries about the loved one’s unavailability and their own helplessness and unlovability. Although initially adaptive, these activations “overgeneralize” from past attachment wounds and cognitively bias the perception of social situations today. Summarizing these distorted activations, Shaver contends that anxious individuals

exaggerate the seriousness of psychological and physical threats and problems, exaggerate their inability to cope autonomously with life demands, intensify the experience and expression of distress, protest any hint of an attachment figure’s unavailability or lack of responsiveness, and present themselves in degrading, childish, or excessively needy ways (Mikulincer and Shaver, 2007a, 40).

The result is a “self-amplifying cycle” of intense distress, vigilance, and negative rumination that can persist long after the original threat subsides.

Interestingly, Shaver maintains that this anxious attachment cycle can be viewed as form of defensive behavior that regulates the individual's emotions. Most of the literature on affect regulation focuses on the defensive "down-regulation" of negative emotions through suppression or self-inflation (see Gross, 2014). However, Shaver argues that the "histrionic intensification" of attachment in anxious individuals can be seen as an initially-adaptive "up-regulation" of the emotions, since the attachment figure intermittently "rewards" the child with attention and care (Mikulincer et al., 2009, 308). Moreover, Shaver speculates that the dramatic and intense demands for attention and care serve a defensive function, as it may allow the anxious individual "to avoid directly experiencing an even deeper sense of insufficiency and isolation." But ultimately, the anxious up-regulation of the attachment system represents a "self-defeating attribution pattern." In a sad bit of irony, attachment hyperactivation leads to intense and chaotic relationships and, thus, the one thing anxious individuals fear most: rejection and abandonment by their loved ones (Mikulincer et al., 2009, 308-309).

Research on Impaired Life Outcomes of Anxious Attachment

In contrast to the broaden-and-build cycle of attachment security, extensive research indicates that the emotional distress and biased activations of the anxious style lead to impairments in emotion regulation skills, coping skills, and relationship satisfaction throughout the lifespan (Grossman et al., 2005; Allen, 2013). As with attachment security, I will present some of the salient highlights of this literature. Early childhood research indicates that anxious children (assessed as *ambivalent* on the Strange Situation test) suffer significant problems in emotion regulation, social relationships, and cognitive performance in school. Emotionally, anxious children are more likely than their secure or avoidant peers to be rated as "hyper, tense, anxious, and easily frustrated" (Allen, 2013, 55). In social contexts, anxious children are less

socially isolated than avoidant children. However, they are rated as more immature, passive, helpless, dependent, and more oriented toward teachers than peers. For example, anxious children may have difficulties in engaging in “one-to-one interactions” with their peers, or may “hove[r] near a group while not being fully engaged.” As well, in peer-reports of popularity anxious children are rated as “neither liked nor disliked” and tend to be neglected or unnoticed. As a result of this social neglect, anxious children are susceptible to loneliness and depression. Finally, in novel and challenging situations that “called for cognitive mastery,” anxious children were rated as ineffective and behaviorally-dependent, and performed worse than their secure and avoidant peers (Allen, 2013, 55).

The most fully-researched sphere of functioning of anxious adult attachment is in romantic/pair-bond relationships, where attachment-related anxieties and distress come to the fore. A huge body of data indicates that the relationship quality of couples is inversely-related to the attachment anxieties of one or both members. In general, anxious individuals in relationships suffer from high levels of conflict, emotional distress, and dissatisfaction, which are “driven by basic insecurities over issues of love, loss, and abandonment” (Feeney, 2008, 476). For example, anxious individuals in relationships reported high levels of global relationship dissatisfaction. Anxious individuals are emotionally committed to the relationship, but report high levels of distrust of their partners and frequent jealousy of their partners’ other relationships (Feeney, 2008, 471).

Moreover, anxious attachment relationships evidence high levels of interpersonal conflict. Anxious individuals were more likely than the secure and avoidant to engage in “coercive and dominating conflict tactics” in their relationships. They make “maladaptive (distress-maintaining) attributions” for the behavior of their partners, and display hindrances in

their patterns of forgiveness and reconciliation. As a result of these tactics and attributions, anxious relationships evidence more frequent episodes of conflict, higher levels of “distress and hurt,” and more serious disruptions of the attachment bond (Feeney, 2008, 471). Finally, the insecurities of anxious individuals result in impairments and inhibitions in their sexual relations with their partners, and the anxious are more likely to use sex as a strategy to forestall rejection than for pleasure and intimacy.

Research on Mental Health Outcomes

As noted above, longitudinal attachment research indicates that attachment anxiety is a “risk factor” for psychopathology rather than a direct cause. It is the “cumulative effects” of early attachment relationships, learned anxious attachment strategies, and subsequent relationships and environmental stressors that can push the distress, vigilance, and negative ruminations of anxious attachment towards psychiatric pathology (Sroufe, 2005). With these caveats in mind, an extensive body of research has examined the correlations between attachment anxiety and adjustment and psychiatric disorders. Anxious attachment is inversely associated with self-reports of well-being, and positively associated with global distress. Moreover, while avoidant styles are associated with “externalizing” disorders like anger and substance abuse, anxious attachment is associated with “internalizing” disorders such as mood and anxiety disorders. Research indicates that anxious attachment correlates with psychiatric diagnoses of depression, anxiety, eating disorders, substance abuse, conduct disorder, and histrionic and dependent personality disorders (Mikulincer & Shaver, 2008, 525).²⁰

²⁰ Anxious attachment-related disorders correspond to Blatt’s (2008) description of “anaclitic” disorders.

Clinical Vignette

Finally, to illustrate the developmental and clinical features of the anxious attachment style I will reproduce the following vignette from Jon Allen (2013, 78-80):

Charlene was born eighteen months after her brother, Matthew, who was diagnosed with autism and who suffered a host of childhood illnesses. As she looked back on her childhood from the vantage point of early adulthood, Charlene viewed her mother as a “saint” and a “martyr” in the way she cared for Matthew; she described her as “world weary,” continually on the verge of exhaustion. She treasured her relationship with her father, feeling that she was “precious” to him; yet he was the “high-powered, executive type” who was rarely around. In his presence, she felt the “sun was shining” on her; in his more pervasive absence, “the world went dark.” Charlene remembered in her early school years feeling neglected and resentful as well as jealous of Matthew. She said she was “sullen” in school and “shunned” by her peers.... She remembered periodic episodes of illness during which she was able to stay home from school; then she was “coddled like Matthew” by her beleaguered mother.

In her later school years and then at the university, Charlene gravitated toward men with whom she became “co-dependent.” ...[S]he sought satisfaction in mothering, while recognizing that her ostensible care served to ensure that they would depend on her and not leave her. Naturally, the opposite happened in a series of conflict-ridden relationships with men whom she described as being “needy” and “unstable.” Oscar, her most recent and longstanding boyfriend, seemed helpless and unable to manage his life; Charlene “took over,” but he resented and rebuffed her “smothering” behavior, and she resented him for being an “ingrate.” Charlene’s berating response to Oscar’s lack of gratitude only drove him further away, and she became “enraged” when he showed interest in other women (Allen, 2013, 78-80).

As is evident, this vignette of Charlene illustrates many of the major themes of the anxious attachment style. Because of her mother’s focus on Charlene’s autistic brother and because of her father’s work-related absences, Charlene likely experienced an “unpredictable partial reinforcement schedule” of parental care. Her parents sometimes may have provided Charlene with adequate love, attention, and care, but at other times they may have proved to be inattentive and inconsistent due to work or her brother’s needs. As a defensive response, Charlene appears to have learned to *hyperactivate* her attachment system through “the use of energetic, strident, noisy proximity-seeking strategies” to coerce her attachment figures to

provide better attention and care. She appears to have taken this attachment style into her relationship with Oscar. But her overdependence, desires for enmeshment, clinging, and controlling behavior have disrupted her relationship with Oscar and have driven him away.

Avoidant Attachment Styles in Childhood and Adulthood

The second insecure style is attachment avoidance. Bowlby referred to this style as “compulsive self-reliance.” It is analogous to the “flight” response to danger and fear (Mikulincer and Shaver, 2007a, 22). Whereas anxious individuals fear abandonment and rejection by their loved ones, avoidant people fear intimacy and “engulfment.” Avoidant infants have experienced consistently unloving, neglectful, and rejecting interactions with their primary caregivers. When avoidant children express vulnerability and a need for comfort when distressed, their parents may respond with coldness or disdain, threats of punishment, or demands that the child show more self-reliance (Mikulincer and Shaver, 2007a, 40). Some parents may even respond with violence and abuse. As a result, attachment-related needs and behavior for protection, love, and intimacy are perceived by the infant as futile, wounding, and even dangerous. The avoidant child is not comforted for the original distress and the caregiver’s rejection adds even more frustration and pain.

As a defensive response, the avoidant child learns to *deactivate* the attachment system by inhibiting and suppressing attachment-related behaviors and needs (Mikulincer and Shaver, 2007a, 26). In effect, “turning off” basic emotional needs for proximity, love, and support allow the child to limit or avoid the psychological pain caused by the caregiver’s rejection. It also helps maintain a functional if emotionally-desiccated attachment bond. Strategies used by the avoidant include “attempts to control and maximize psychological distance from a partner; avoid

interactions that require emotional involvement, intimacy, self-disclosure, or interdependence; and deny or suppress attachment-related thoughts and feelings that might imply or encourage closeness, cohesion, or consensus” (Mikulincer and Shaver, 2007a, 41). Because they have not received the vital protection, intimacy, and love we all need, avoidant people have learned to “expect better outcomes” if life’s problems, vicissitudes, and threats are dealt with alone.

Internal Dynamics, IWMs, and Defenses of Avoidant Attachment

I will return again to Mikulincer and Shaver’s (2007a, 2008) adult attachment model to elucidate the dynamics of the avoidant style (see Figure 4). Shaver’s research indicates that cold and rejecting interactions with caregivers have led avoidant individuals to internalize defensively-distorted IWMs of self and others. Avoidant people have highly negative, pessimistic, and critical IWMs of others. Their IWMs of themselves are more complex. Avoidant individuals may perceive themselves in a defensively positive, self-inflated manner, characterized by “unrealistically high self-standards” and perfectionism. When under duress, however, their inflated self-models crumble, and underlying, critical self-perceptions then surface (Mikulincer and Shaver, 2007a, 168).

Fascinatingly, research indicates that avoidant individuals more or less continuously deactivate their attachment systems, whether they are experiencing threatening situations or not (Mikulincer and Shaver, 2008, 509). This manifests in three pervasive types of defensive maneuvers. First, as we have seen avoidant individuals “defensively exclude,” deny, or suppress “any emotion, thought, image, fantasy, or memory that might activate the attachment system and cause a wish or desire to seek help or support from an unresponsive attachment” (Mikulincer et al., 2009, 300). This could include physical danger, sad childhood memories, or fears of abandonment by spouses. Second, avoidant individuals have narcissistic, defensively-enhanced

views of their own self-worth. They tend to celebrate their own self-reliance, resiliency, and strength, while minimizing all “personal weakness, imperfection, vulnerability, or need.” Third, avoidant individuals denigrate and devalue the positive traits of others, including their current partners. This may include a projection of their undesirable traits onto others. In sum, suppressing their own feelings, looking down on others, and viewing only themselves as “stronger and wiser” helps the avoidant to defend against dangerous needs for protection, intimacy, and love (Mikulincer et al., 2009, 300-304).

Finally, as mentioned above the pervasive defensive processes of avoidant individuals are often not as effective in regulating emotional distress as they might wish. For example, extensive research indicates that when avoidant individuals engage in cognitively demanding or stressful tasks, their avoidant defenses break down. Avoidant individuals then experience even higher levels of negative distress than the secure and anxious (Mikulincer and Shaver, 2008, 521). An interesting facet of this research is the identification of an “incoherence” between anxious individuals’ conscious self-reports of emotional experience and underlying physiological responses. The avoidant may deny feeling anxious and maintain a “poker face” when under stress, while skin conductance measures indicate high levels of arousal. Past a certain point, defensive suppression is ineffective in managing this arousal, and the subject then experiences underlying symptoms of distress. Finally, Shaver’s research suggests that avoidant defenses also can result in a form of “alexithymia,” or the reduced ability to differentiate and describe emotions. As we will see next, this can mar the basic understanding and regulation of one’s emotions, as well as the capacity to understand and relate with others (Mikulincer and Shaver, 2008, 524).

Research on Impaired Life Outcomes of Avoidant Attachment

Longitudinal research demonstrates that the emotional suppression, self-inflation, and devaluation of others of avoidant attachment can lead to impairments in affect regulation skills, coping skills, and interpersonal relations throughout the lifespan. For example, early childhood research indicates that avoidant infants and children (assessed as *avoidant* with the Strange Situation test) suffer significant problems in emotional regulation and social relationships. Emotionally, avoidant children are more likely to be rated as hostile, aggressive, and emotionally “insulated” than their secure and anxious peers (Allen, 2013, 56). Socially, avoidant children are rated as more “isolated and unaware,” more physically aggressive, and more prone to “devious[ness], lying, and stealing.” They are also more likely to be labeled as victimizers and bullies; anxious children are frequently their targets. Moreover, in peer-reports of popularity avoidant children are rated as being disliked, “mean,” and aggressive. This contrasts with avoidant children, who are unnoticed and neglected. Finally, avoidant children are at risk for being singled-out and punished by their teachers for their aggression. In some sense, this “recapitulates” the patterns of rejection and punishment they experience at home. As a result of their social isolation and alienation from peers and teachers, avoidant children are susceptible to loneliness and depression (Allen, 2013, 56).

Extensive empirical research has also investigated the functioning of adult avoidant individuals in romantic and pair-bond relationships. As with anxious attachment, the relationship quality is compromised if one or both partners have an avoidant style. In general, avoidant individuals suffer from low levels of intimacy, interdependence, and satisfaction in their relationships, which may be a reflection of their fears of rejection and/or engulfment (Mikulincer et al., 2009, 298). For example, avoidant individuals report low commitment to their

relationships, low levels of closeness and emotional involvement, and low reliance on their partners for support. For their part, the avoidant provide low levels of support, low “emotional expressiveness,” and low personal self-disclosure (Feeney, 2008, 471). Moreover, the avoidant tend to distrust their partners, denigrate them, and dismiss their attachment needs. They may harbor inner resentments toward their partners, which manifest in anger and a slowness to forgive. Finally, the avoidant report that sexual relations and parental caregiving provide little increase in intimacy or emotional investment and involvement with their partners. The avoidant are more likely to fantasize about sexual relations with other people, are more prone to having affairs, and may abandon the relationship if their partner becomes “too intimate or demanding” (Feeney, 2008, 471; Mikulincer and Shaver, 2007a, 42).

Research on Mental Health Outcomes

As with anxious attachment, a large body of longitudinal research indicates that avoidant attachment styles are a “risk factor” for psychopathology throughout the lifespan, especially when combined with poor current relationships and environmental stressors (see Sroufe, 2005). Interestingly, there is no evidence linking attachment avoidance with global measures of well-being or distress. This may perhaps be explained by avoidant individuals’ characteristic defenses of emotional suppression and self-inflation. However, extensive research demonstrates that attachment avoidance correlates with *particular* psychiatric symptoms and disorders. As noted above, while anxious attachment is associated with “internalizing” disorders such as mood and anxiety disorders, avoidance is associated with more indirect, “externalizing” disorders. Specifically, research indicates that avoidant attachment correlates with “patterns” of depression characterized by perfectionism, self-punishment, and self-criticism; somatic and sleep disorders;

conduct disorders; substance abuse; and schizoid and avoidant personality disorders (Mikulincer and Shaver, 2008, 525).²¹

Clinical Vignette

To illustrate the developmental and clinical features of the avoidant attachment style, I will reproduce the following vignette from Jon Allen (2013, 85-87):

Doug prided himself on his “fierce independence,” which he traced back to childhood. As he put it, “Like father, like son.” His father was a factory foreman, whom Doug characterized as being “tough and respected.” His father was the boss at home as well as at work; if the household was not operating like a “well run factory,” there would be “hell to pay.” Acknowledging that his father could act like a “ruthless tyrant” toward him and his mother, Doug nonetheless admired him.... And he said his mother was “hopelessly disorganized” and the household would have been utterly chaotic if his father had not “kept her in line.”

There was nothing unpredictable about Doug’s marriage. He picked Penny because she was attractive and admiring. She let him know forthrightly that she was attracted to “strong men”.... and she was attracted by Doug’s drive to go to medical school.... [But] after becoming a mother, Penny discovered to her surprise that she needed more than a strong and successful man; she needed a supportive partner. She resented Doug’s single-minded focus on work.... Doug dismissed Penny’s protests and resigned himself to the emotional distance in their relationship, coupled with the waning of her admiration....

Doug was “shocked” when Penny filed for divorce, having been oblivious to the emotional significance of her protests, even when underscored by her occasional requests that they seek marriage counseling. He said he “crashed” after she moved out and took their daughter with her; he couldn’t believe it when he collapsed into sobbing when they drove away.... [He eventually] sought hospitalization after being blindsided by his first episode of severe depression that culminated in a dangerous weekend cocaine binge (Allen, 2013, 85-87).

This vignette of Doug’s life poignantly illustrates several of the major characteristics of the avoidant attachment style. In childhood, Doug experienced an unloving, neglectful, and rejecting relationship with his tyrannical, aggressive father. When Doug expressed his needs for love and care, his father likely responded with coldness, demands for self-reliance, or even

²¹ Avoidant attachment-related disorders correspond to Blatt’s (2008) description of “introjective” disorders.

violence. Doug came to see attachment needs for love and intimacy as futile or even dangerous. As a result, Doug learned to *deactivate* his attachment system by suppressing his basic emotional needs for love and support. This served the defensive purpose of avoiding the pain of rejection and maintaining at least some modicum of attachment to his father. As an adult, Doug carried over this deactivating attachment style into his relationship with Penny. But his psychological distance, avoidance of intimacy and self-disclosure, and denial of his attachment-related needs eventually drove Penny away. As with many avoidant individuals, his defensive posture collapsed when Penny left, and Doug descended into depression and substance abuse.

Disorganized or Fearful Avoidant Attachment Styles

Finally, as discussed in the last chapter, in the 1980s Mary Main (Main et al., 1985; Main and Solomon, 1990) discovered a fourth major attachment style in infants and adults: “disorganized” attachment. The *disorganized/disoriented* classification on the AAI corresponds to the “fearful avoidant” style in Shaver’s adult social-personality research, which is defined by high levels of both anxiety and avoidance (Mikulincer and Shaver, 2007a, 26). In general, the development of disorganized attachment in childhood is associated with severe experiences of loss, trauma, and abuse. This may include the death of a parent, exposure to war, or severe injury/illness, as well as episodes of “attachment trauma” like physical, sexual, and psychological abuse, maltreatment and neglect, and domestic violence (Allen, 2013, 195). In the last two decades, developmental researchers like Lyons-Ruth and Beebe have also expanded conceptions of attachment trauma to include long-term, brief “disruptions in emotional communication” and “failures of attunement” with the infant’s distress (Lyons-Ruth et al., 1999; Beebe et al., 2010). I will discuss this “micro-interaction” research later in this chapter.

As a result of this loss, trauma, and abuse, disorganized children appear to suffer a “break down” in the normal primary and secondary attachment strategies for proximity and support. Infants with disorganized attachment display bizarre and disoriented behavior, while adults suffer from lapses in cognitive and affective coherence and control. Both Main and Shaver contend that the incoherent and disoriented behavior of children and adults are predictable responses: frightened, frightening, or abusive behavior by attachment figures lead to the activation of the attachment system; but then seeking proximity, protection, and support from a frightening/abusive loved one leads to terror, disorientation, and avoidance. The result may be chaotic oscillations in attachment strategies, “slips” in metacognitive monitoring, and “intrusions” into consciousness of traumatic memories (Hesse, 1999; Main et al., 2008; Mikulincer and Shaver, 2007a). Without new experiences of loving attachment relationships and/or therapeutic intervention, a long-term developmental trajectory of psychopathology may ensue.

Internal Dynamics, IWMs, and the Break Down of Defenses

I will fill out the picture of disorganized attachment dynamics by turning once again to Mikulincer and Shaver’s (2007a, 2008) model of adult attachment functioning. Their research indicates that abusive, neglectful, and emotionally mis-attuned interactions with caregivers have led fearfully avoidant individuals to internalize particularly negative and chaotic IWMs of self and others. Like avoidant individuals, the fearfully avoidant have highly negative, pessimistic, and critical IWMs, which are resistant to change. Yet unlike avoidant individuals, who have narcissistically-inflated self-perceptions, the fearfully avoidant perceive themselves like the anxious: as unlovable, helpless, dependent, and weak (Mikulincer and Shaver, 2007a, 43, 164).

Moreover, when fearful avoidant individuals appraise a situation as threatening, the activation of the attachment system yields a disorienting “mix” of hyperactivating and deactivating strategies. Anxious and avoidant thoughts, feelings, memories, and schemas become “simultaneously accessible” in the fearful avoidant person’s mind (Mikulincer and Shaver, 2007a, 43). On the one hand, the fearfully avoidant crave protection, attention, and love; their minds flood with intense emotions and negative ruminations about their partner’s unavailability or their own unlovability. On the other hand, the fearfully avoidant “consciously fear” the traumatic abuse, rejection, or neglect they may receive when they get close to attachment figures. They defensively minimize or suppress attachment-related behaviors and needs for love, protection, and support. As well, if the fearfully avoidant experience PTSD symptoms from a history of trauma or abuse, traumatic memories and thoughts may intrude into their minds. The result is a toxic brew of paralyzing cognitive disorientations and chaotic “cycle[s] of conflict-riddled attempts to meet personal needs, while avoiding rejection or mishandling” (Mikulincer and Shaver, 2007a, 43).

Research on Impaired Life Outcomes of Disorganized Attachment

An extensive body of research conducted over the last two decades indicates that disorganized attachment is associated with profound disturbances in affect regulation, coping skills, and interpersonal relationships throughout the lifespan (Lyons-Ruth and Jacobvitz, 2008). In general, fearful avoidant/disorganized children, teens, and adults are the rated as the “least secure, least trusting, and most troubled” individuals among their peers (Mikulincer and Shaver, 2007a, 43). For example, early childhood research by Main and colleagues (1988; 2005) discovered that two-thirds of disorganized infants develop, by age six, one of two “controlling strategies” in their interactions with their mothers. “Controlling-punitive” children engage in

harsh commands, threats, and even physical attacks to “manage” their mother to better meet the child’s needs. “Controlling-caregiving” children, in contrast, adopt “animated,” cheerful, and placating demeanors to manage the mother. The remaining third of children retain the disorganized/disoriented strategies they displayed as infants (Main et al., 2005; cited in Allen, 2013, 169).

These controlling and disorganized strategies result in significant deficits in emotional regulation, personal relationships, and school performance. Compared to their secure and insecure-organized peers, disorganized children show the highest levels of internalizing symptoms, such as depression, anxiety, and post-traumatic stress/ dissociation; and the highest levels of externalizing symptoms, like anger, violence, and conduct disorders. Because of their histories of abuse and disrupted emotion regulation capacities, the disorganized also suffer continued post-traumatic stress and dissociative symptoms when they encounter loss and stress later in life (Eagle, 2013, 33). Moreover, in interpersonal contexts fearful avoidant children are rated as passive, unassertive, and inhibited, while also prone to violent outbursts. They show less competence in “quality of play” with their classmates and a lower ability to “resolve conflicts.” Finally, disorganized children have the poorest academic performances in school between ages five to seven, and the poorest performance on “syllogistic reasoning” tests from nine to seventeen (Eagle, 2013, 33).

Deficits in affect regulation and personal relationships often continue for disorganized individuals in adulthood, whether they suffered trauma or loss in early childhood or in romantic relationships as adults. Shaver’s research indicates that there is an “interaction effect” between the anxious and avoidant dimensions: fearful avoidant adults suffer higher levels of dysregulation than would be expected with either dimension alone or when added together

(Mikulincer and Shaver, 2007a, 43). In terms of affect regulation, disorganized adults are rated in general as inhibited and unassertive. Yet like disorganized children, disorganized adults are also prone to angry, aggressive, and violent outbursts when they become overwhelmed. Fearful avoidance is also associated with higher self-ratings of proneness to shame, greater cognitive inflexibility and rigidity, and lower levels of empathy for the suffering of others (Mikulincer and Shaver, 2007a, 43; 277). Moreover, as noted above fearful avoidant adults have particularly negative, critical, and distorted IWMs of self and others. When all of these factors are mixed together in an interpersonal context, the result is unsupportive, chaotic, and physically violent relationships. Finally, disorganized adults suffer from the most severe “mourning complications.” When a loved one dies, disorganized adults experience “higher levels of anxiety, depression, grief, trauma-related symptoms, and alcohol consumption” (Mikulincer and Shaver, 2007a, 208-209).

Disorganized Attachment and Psychopathology

As noted in the last sections, while the anxious and avoidant attachment styles are regarded as “risk factors” for later psychopathology, disorganized attachment in infancy, adolescence, and adulthood directly “predicts” psychopathological outcomes and psychiatric diagnoses. Extensive research in the last two decades has investigated the correlational and proposed causal connections between infant and adult disorganized attachments styles and psychopathology (see Lyons-Ruth and Jacobvitz, 2008). As noted in the last chapter, individuals with AAI *unresolved/disorganized* classifications are “over-represented” in the adult psychiatric population. In one study, 77% of an inpatient population was classified as disorganized, versus 7% in a control group (van IJzendoorn and Bakermans-Kranenburg, 1996; cited in Mikulincer et al., 2009, 315). Moreover, recent evidence suggests that individuals with the most serious

psychological disturbances fit the AAI *cannot classify* category: 26% of young adults with previous psychiatric hospitalizations; 37% of violent married men; and 27% of male prisoners in a Dutch psychiatric prison have this classification (Mikulincer et al., 2009, 315). Finally, in regard to psychiatric diagnoses, disorganized attachment is associated with generalized anxiety, severe symptomology of clinical depression, conduct disorder (in childhood), obsessive-compulsive disorder, dissociative disorders and PTSD, suicidality and self-harm, alcohol and substance abuse, and borderline and avoidant personality disorders (Mikulincer and Shaver, 2007a; Mikulincer et al., 2009; Allen, 2013; Eagle, 2013).

Clinical Vignette

Finally, to illustrate the developmental and clinical features of the disorganized/ fearful avoidant attachment style, I will reproduce a vignette provided by David Howe (2011). A British social worker that Howe knew spoke of her client, “Dandy”:

He was never still. Pacing, fidgeting, smoking roll-ups. There were weeks when he'd be in to see me every day. For a chat, for money, for information, for something to do. One day he'd be quite funny, chatty, charming, asking after my health. He would sometimes bring me little presents, then spoil it by saying he'd nicked it from the local supermarket which he said, 'was dead easy to pinch from.' Then on another day he might suddenly cry and say what a useless life he'd had -- a mother who was a druggie, a dad he'd hardly ever seen, in and out of foster homes, kicked out of school. And then out-of-the-blue he'd get in a rage and tell me I was an arsehole, no help whatsoever, I didn't care -- never had -- just did it for the money, that I was a slag, a 'fucking waste of time.' I remember after one awful occasion, he came back the next day, he said to apologize, but I was away from the office. He shouted at the receptionist, punched his fist through a window, and stormed out. I didn't see him for several months, then one day he popped in. He was holding hands with Kaz. Smiling, as if the cat had got the cream, he said they were going to get married. Kaz, he said, was pregnant. He was going to get a job, no problem. He was going to be the best dad in the world 'cos he knew from his own lousy experience that kids needed good dads. And that was the beginning of another intense episode that ended when Kaz said she was going to leave him because he was 'a nutcase.' Later that afternoon he got arrested for theft and possessing too much cannabis (Howe, 2011, 186).

This sad and poignant vignette illustrates many of the long-term, detrimental emotional and interpersonal consequences of childhood trauma and neglect. Dandy experienced a chaotic and abusive childhood: a drug addicted mother, an absent father, and a “revolving door” involvement in foster care. As a result, Dandy appears to suffer a “break down” in the normal primary and secondary attachment strategies for proximity and support. The vignette vividly describes Dandy’s bizarre and disoriented behavior, and lapses in cognitive and affective coherence and control. Sadly, his chaotic relationship with Kaz also demonstrates the oscillations in attachment strategies evidenced by fearful avoidant attachment individuals. On the one hand, Dandy may crave protection, attention, and love; but on the other hand, he may fear and ruminate upon abuse, rejection, and neglect he has experienced when he gets too close. Moreover, Dandy’s behavior also appears to evidence cognitive “slips” and “intrusions” into consciousness of traumatic memories. Both of these symptoms are characteristic of PTSD. Finally, it is likely that the severity of Dandy’s symptoms indicate that he will need extensive psychiatric treatment and intensive, long-term psychotherapy to gain improvements in his quality of life and his interpersonal relationships.

“Modern” Physiological and Developmental Neuroscience Models of Attachment

Finally, in the last section of this chapter I will now turn to an examination of several recent physiological and developmental neuroscience models of attachment. In the last twenty years contemporary attachment theory researchers have followed Bowlby’s values of intellectual openness by incorporating the latest developments in developmental psychobiology and cognitive, affective, and social neuroscience into the attachment theory framework. As noted in the first chapter, several of these theorists have distinguished their “modern” neuroscience theories of attachment from the earlier “classical” models presented by Bowlby and Ainsworth

(see Narvaez, 2014). However, as the sophisticated empirical and assessment literature on infant and adult attachment dynamics clearly demonstrate, the attachment field has continued to grow and evolve in new directions in recent decades. What the new neuroscience models allow is for researchers to peer into the “black box” of physiological and neurobiological mechanisms that may underlie attachment behaviors and cognitive-affective appraisal processes. Bowlby, while open to future physiological research, simply did not have access to the molecular genetics, neurophysiological, and neuroimaging techniques that we do today (Schoore, 2013, 39). Moreover, as we will see, neuroscience models of attachment allow attachment theory to connect and dialogue with contemporary developmental science research on the broad range of intersubjective processes that ideally occur between mother and child, such as psychological intimacy, companionship, love, and play (Stern, 2004; Trevarthen, 2005; Schoore and Schoore, 2008).

The literature on the neurobiological substrates of infant attachment is growing exponentially. In line with the extended evolutionary synthesis and developmental psychopathology paradigms I discussed in the Introduction and the last chapter (e.g., Pigliucci and Muller, 2010; Stotz, 2014; Cicchetti, 2016), investigations of the neurobiological substrates of attachment are conducted at different levels of analysis with different methodological procedures and instruments. These include molecular genetics studies using animal research models; neurochemical systems research of animal and human brains; observational “microinteraction” developmental psychology studies of human mother-infant interactions; and anatomical, structural MRI, and neuroimaging research on the developing human infant brain. Many of the heterogeneous findings on specific functions and processes of the brain and nervous system have not been fully integrated, as yet. However, two broad themes that run through this

literature are that the mother-infant attachment bond comprises a mutually-influential, dyadic regulation system, and that the mother's caregiving behavior exerts a profound influence on the infant's neurological and affect regulation development.

To illustrate efforts in this field, I will discuss four representative areas of physiological and developmental science research: animal studies research on mother-infant separations; neurochemical research on dopamine, the opioids, and oxytocin; intersubjectivity research on mother-infant "microinteractions"; and Schore's modern affective regulation theory. For comprehensive overviews of these research models, see Hart (2011), Schore (2012), and Cozolino (2014).

Finally, at the end of this chapter I will return to a discussion of prominent critiques of the attachment theory paradigm. I will describe how I believe the newer empirical and neurobiological analyses of attachment address and ameliorate these critiques.

Animal Studies Research on Mother-Infant Separations and Nurturing

First, during the last several decades, animal studies researchers have investigated the physiological effects on infant animals when they were "experimentally separated" from their mothers during the early weeks of life. This research has revealed the profound physiological and genetic effects that an animal mother's caregiving behavior has on infant development. Although this research can be critiqued regarding its relevance for human infant-mother interactions given our massively evolved prefrontal cortex and its higher-order executive cognitive functions, this research does appear to be valuable given the homologies between mammalian and human brainstem and limbic (emotional) systems (see Panksepp, 1998). Animal studies also permit experimental manipulations, such as prolonged maternal separation, that

would be unethical to conduct with human infants. I will discuss the findings of two major animal researchers to illustrate the work being carried out in this field.

First, some of the earliest evidence for the physiological effects of maternal separation, as well as the mother–infant attachment bond as a dyadic regulation system, came from the animal studies lab of the developmental psychobiologist, Myron Hofer, beginning in the 1970s. Hofer’s work demonstrated that the function of the mother-infant attachment bond goes well beyond protection from predators, as Bowlby originally conceived (Fonagy, 2001, 16). Working with rat pups and their mothers, Hofer and colleagues (Hofer, 1994; 2006; Polan and Hofer, 2008) discovered that within the mother-infant attachment relationship are embedded a wide range of “hidden regulators” that the mother performs which influence the rat pup’s physiological, behavioral, and affect regulation development. These hidden regulators are observable when the mother and pup are separated, as the pup manifests profound and enduring physiological and behavioral dysregulations.

For example, maternal separation negatively influenced the pup’s heart rate, stress reactivity, body temperature, sleep/wake cycles, food intake, exploratory activity, and even physical growth (Hofer, 2006, 85-86). Some of these dysregulations could be prevented or reduced by providing experimental “stand-ins” for the mother’s functions, such as stroking the pups with an artist’s brush. Hofer concluded that it was the absence of the mother’s physiological and behavioral “stimulations” that caused these dysregulations, such as her body warmth, milk feeding, and licking and grooming (see Polan and Hofer, 2008, for review).

Second, Michael Meaney and his colleagues (Meaney, 2001; Szyf, Weaver, and Meaney, 2007) have produced groundbreaking research demonstrating the epigenetic effects of early mother-infant attachment relationships on the stress response of rat pups. Meaney discovered

that variations in maternal nurturing and caregiving behaviors had direct effects on the functioning of the hypothalamic-pituitary-adrenal (HPA) axis, which is associated with the “fight or flight” stress response system. The HPA axis mobilizes the organism to respond to danger and threats (see Hart, 2008). Specifically, Meaney found that variations in maternal licking and grooming of pups and a “high-arched nursing posture” alter the gene expression in pups of the “glucocorticoid receptor proteins” (GRPs) in the hippocampus. GRPs in the hippocampus are involved in the control of anxiety and fear responses in the organism by “sensing” levels of adrenocortical hormones in the blood stream and then feeding this information back into the system (a form of “feedback inhibition”; Polan and Hofer, 2008, 165).

Pups with “high-licking” mothers in the first 10 days of life were found to have more active genes responsible for the synthesis and encoding of the GRPs in the hippocampus (and thus, lowered stress and fear responses) than pups with “low-licking” mothers. Moreover, the genes of the high-licking mothers were more active because of epigenetic markers attached to the gene DNA that modified its subsequent expression. In other words, the behavior of the high-licking mothers directly modulated the expression of the genes responsible for lowering the stress and fear response (Szyf, Weaver, and Meaney, 2007). Meaney’s research thus demonstrates the remarkable physiological effects of early maternal care that extend all the way down to the genetic level (see Polan and Hofer, 2008, 165-166; Narvaez, 2014, 134-135).

Neurochemical Systems and Attachment: Dopamine, the Opioids, and Oxytocin

Second, one of the best-researched areas of the neurobiological substrates of attachment is the neurochemical messenger systems of the brain and body. The neurochemical systems include *neurotransmitters*, which are produced in the brain stem and convey information across

the synaptic gaps between neurons; *hormones*, which are produced by organs like the adrenocortical and pituitary glands and are transmitted to the brain by the bloodstream; and *neuropeptides*, which are produced in the brain stem and hypothalamus and can act as hormones or as modulators of the effects of neurotransmitters (see Hart, 2008; Cozolino, 2014). All three types of neurochemicals provide information to the body and brain about the internal and external states of the organism, and they affect our attention, moods, and motivation (Hart, 2008, 164). I will discuss the functions of three neurochemicals that have been found to be involved in the attachment and caregiving processes: dopamine, the endogenous opioids, and oxytocin.

First, dopamine is a neurotransmitter involved in the motivation-reward system and in general goal-related behavior (Gillath, 2015, 51). Dopamine is produced in the ventral tegmental area (VTA) of the brainstem, and it projects to the amygdala, hypothalamus, nucleus accumbens, and the frontal cortex (Solms and Turnbull, 2002, 116). The dopaminergic system is associated with feelings of eager excitement, curiosity, and the pleasurable anticipation of gaining reward. It underlies a broad range of exploratory behaviors and appetitive desires for food, sex, drugs, and novelty (Panksepp, 1998). The dopamine system is the neurochemical substrate of the exploratory behavioral system (discussed in Chapter I), and it may be the closest analogue to Freud's concept of the "libidinal drive" (Solms and Turnbull, 2002, 117).

Second, endogenous opioids are neuropeptides that are associated with the "consummatory pleasures" of emotional intimacy, sex, nursing, soothing touch, and play (Coan, 2008, 250-251). Opioids are generated in the brainstem and the glands, and its receptors are located in the basal ganglia, amygdala, and the orbitofrontal cortex. Opioids are the body's "internal morphine system" (Hart, 2011, 55). Increases of endogenous opioids (as well as injections of morphine) are associated with calmness, relaxation, and wellbeing, and the decrease

of pain and aggression (Hart, 2008, 174-175). Panksepp (1998, 266; cited in Allen, 2013, 218) refers to the opioid system as the body's "secure neurochemical base." It appears to be clearly related to the attachment system. For example, increases in opioids inhibit separation distress calls in infant animals. Blocking opioid action induces separation distress, crying, sleeplessness, and irritability (MacLean, 1990; cited in Allen, 2103, 218).

Finally, oxytocin (and its male hormone equivalent, vasopressin) is a neuropeptide involved in social bonding, childbirth and nursing, and sexual reproduction (Insel, 2010). In the brain, oxytocin is produced in the hypothalamus and released from the pituitary gland to receptors in the brainstem, amygdala, and the cingulate cortex (Cozolino, 2104, 121). Oxytocin regulates a broad range of maternal behaviors, and evidence suggests the caregiving system may have been "co-opted" by evolution to promote social cooperative behaviors (Carter, 1999; cited in Narvaez, 2014, 83). Oxytocin produces a warm, "loving feeling" that promotes social approach behaviors and the formation of mother-infant attachments and adult pair bonds (Hart, 2008, 178).

A huge amount of research in the last decade has investigated the effects of experimental oxytocin administration. For example, high oxytocin levels in mothers are associated with increased engagement and "affective synchrony" with their infants (Feldman et al., 2011). Intranasal inhalation research has shown that oxytocin increases trust, confidence, empathy, and social recognition; it also reduces fear, stress, and aggression by "down-regulating" or decreasing amygdala and HPA axis activations (Cozolino, 2014, 122-124). Finally, animal studies with prairie voles shows that oxytocin levels moderate monogamous versus promiscuous adult pair bonding (Insel, 2010). But fascinatingly, oxytocin effects can be complex: administering

oxytocin to human males in group settings can promote in-group trust and out-group mistrust (see De Dreu, 2013).²²

Research suggests that the dopamine, oxytocin, and opioid systems interact together in synergistic, additive ways (see Coan, 2008; Depue and Morrone-Strupinsky, 2005). Dopamine “incentivizes” an infant to seek proximity to an attachment figure in times of stress (as well as the caregiver to seek for the infant upon hearing distress calls); oxytocin acts as the initial “social glue” to form the mother-infant attachment bond; opioids maintain the attachment with pleasurable and soothing rewards; and the withdrawal of opioids induces separation distress and the attachment behavioral system (Coan, 2008, 249-251; Allen, 2013, 215-227). As is apparent, this neurochemical picture, plus the physiological research from Hofer and Meaney, bears striking similarities to Bowlby’s descriptions of the attachment system (oxytocin activation and opioid activation and withdrawal), the fear system (HPA stress response), and the exploratory system (dopamine activation). Their interlocking interaction also directly parallels Marvin’s description of the “circle of security,” discussed in Chapter I (Marvin et al., 2002): the absence of the caregiver engages the fear system and disengages the exploration system; the fear system triggers the infant’s attachment system, resulting in the infant seeking the caregiver for protection and support (safe haven); once soothed, the child can then resume exploration and play (secure base).

Intersubjectivity Research on Mother-Infant Microinteractions

A third source of modern scientific research on attachment bonds has come from a cadre of psychoanalytically-informed developmental science researchers, including Daniel Stern

²² I will return to these fascinating findings in Chapter VI and the Conclusion.

(1985, 2004), Allan Schore (1994, 2012), Colwyn Trevarthen (2005), Ed Tronick (2007), and Beatrice Beebe (Beebe and Lachmann, 2002, 2014). This group has synthesized developmental neuroscience with self psychology, intersubjectivity, and relational psychoanalysis theories. Since the 1970s, these researchers have maintained that the mother-infant attachment bond is best viewed as a dyadic, interactive, “mutual regulation” system that facilitates the development of “self-regulation” in the infant over time. A major focus has been investigating the moment-to-moment “microinteractions” that occur between mother and infant in every given moment. Pioneers like Stern (1985) discovered these microinteractions by videotaping mother-infant interactions and then observing and analyzing the videos, frame-by-frame. What was revealed were minute sequences of implicit, non-verbal, affective communications that transpire rapidly and automatically between the mother and infant (and, presumably, between the therapist and client). Adequate regulation of these processes by the mother within the mother-infant bond lays a foundation for the development of self- and affect regulation in the child (Beebe and Lachmann, 2002; Boston Change Process Study Group, 2010).

In these models, infants are viewed as being able to engage in synchronized, mutually-choreographed interactions from birth. By age 2 to 3 months the child can coordinate facial and physical expressions with the parent; by age 7 to 9 months the child can attune to the caregiver’s emotions and share psychological intimacy (Trevarthen, 1979; cited in Hart, 2011, 9). However, for the first several years of life the infant does not have the ability to regulate his or her own intense emotional states and reach affective equilibrium (Fonagy et al., 2010, 39). The caregiver accomplishes this vital emotional regulation function for the child by entering into a mutually interactive, “intersubjective field” with the infant. In ideal caregiver-infant bonds, the parent helps regulate the infant’s emotions by identifying, matching, “metabolizing” or modulating,

and communicating back to the infant the arousal states and emotions that are shared within the pair bond (Hart, 2011, 23-25).

But even in optimal attachment bonds, countless numbers of microinteraction sequences of caregiver-infant attunement, mis-attunement, and re-attunement occur. Sequences of affective attunement are experienced as “vitalizing” and joyful, while mis-attunements are experienced as distressful (Stern, 2004; Hart, 2011, 29-31). With “good-enough” re-attunement and repair of the infant-caregiver bond by the parent, the infant is able to build positive IWMs of self and others, internalize the caregiver’s self and affect regulation functions, and learn positive models of psychological intimacy and interpersonal functioning (Beebe and Lachmann, 2002; Stern, 1985, 2004; Trevarthen, 2005; Tronick, 2007; Hart, 2011). Poor moment-to-moment parental affective attunement and an absence of mis-attunement reparations are believed to lead to the insecure anxious and avoidant attachment styles discussed above (Hart, 2011; Cozolino, 2014).

Schore’s Neurodevelopmental Affect Regulation Model

A major challenge for developmental researchers today is to integrate the physiological, neurochemical, and intersubjectivity observational research on attachment, just discussed, with the neuroanatomical and neuroimaging research on the neural structures and neural functioning of the brain. In this last subsection, I will discuss one developmental neuroscience model that attempts this integrative task. Over the last twenty years, the UCLA researcher Allan Schore (1994, 2003a, 2003b, 2012) has proffered an influential neurodevelopmental affect regulation model that synthesizes intersubjectivity research with developmental neuroscience. Schore calls his model “regulation theory.” He argues that his work is an example of a “modern”

developmental neuroscience attachment theory, in contrast to Bowlby's older "classical" model that relied on the ethological and cybernetic theories of Bowlby's era (Schore and Schore, 2008).

Schore's model focuses on the neurophysiological development of early, unconscious, emotional processing centers located in the right hemisphere of the infant brain. He argues that the infant's unconscious right brain processes synchronize and "communicate" with the mother's unconscious right brain. This is what creates the "intersubjective field" between mother and infant within the attachment bond. Moreover, like other intersubjectivity models Schore maintains that dyadic mother-infant regulation processes ("interactive regulation") facilitate the internalization of affect regulation abilities in the child ("autoregulation") (Schore, 2014, 389). Countless early affect-regulating, "rupture and repair" microinteractions between mother and infant are stored as implicit internal working models that affect the individual's ability to cope with stress throughout life.

Schore's regulation theory is noteworthy for attempting to provide the reason why the infant needs a mutual affect regulation system with the mother. Schore maintains that this reason is found in the neurophysiological immaturity of the early infant brain. Physiological evidence indicates that the infant's brain undergoes a massive "growth spurt" from the last trimester to the end of the third year (Schore, 2013, 33-34). For the first two postnatal years of this spurt, the infant's right brain hemisphere matures earlier and is "dominant" over the left hemisphere, measured in terms of asymmetries in neuronal connections, density, and volume (Schore, 2013, 37-38). The left hemisphere, which includes the language centers and rational analytical abilities, only begins its growth spurt by the middle of the second year, and then becomes dominant in the third year (Schore, 2013, 44).

Schore contends that extensive research indicates that early, unconscious emotional processing and expression abilities are lateralized in the infant's right brain, located in the "limbic system" (Schore, 2013, 41-44). Schore hypothesizes that the limbic system is a vertical, hierarchically-ordered network of neural structures that includes the amygdala, the hypothalamus, the hippocampus, the insula, the anterior cortex, and the orbitofrontal cortex (OFC). Importantly, Schore proposes that the components of the right limbic system mature at different points in time (Schore, 2013, 42-44). The subcortical regions of the right insula, the amygdala, and the hypothalamus mature from the third trimester of pregnancy to the second month of life. The insula receives "interoceptive" information about the body, such as pain. The amygdala is involved in rapid and unconscious appraisals of threat, and with initiating fear and aggression responses. The hypothalamus produces oxytocin and glucocorticoids, which it uses to control the autonomic nervous system (ANS; *sympathetic* "fight or flight" and *parasympathetic* "freeze" systems) and the HPA stress response axis, respectively (see Porges, 2007; Hart, 2008). All three subcortical regions are thus associated with unconscious, automatic "survival system" functions that are operable from birth (Schore, 2013, 41).

Schore hypothesizes that later in the infant's first year, the two higher-level cortical structures of the limbic system mature and come "online": the anterior cingulate cortex (ACC) in the third to ninth months and the orbitofrontal cortex (OFC) in the ninth to eighteenth months (Schore, 2013, 41). Both structures enable higher-level, but still unconscious, emotional processing and control. The right ACC coordinates control of the amygdala-dominated fear and stress systems; it is also involved in important social, play, and caregiving behaviors. However, it is the right OFC that comprises the "apex" and the "executive center" of the limbic system (Schore, 2013, 41). The OFC is involved in the complex unconscious coordination of the

“interoceptive” information received from the body and the “exteroceptive” information received from the social and physical environment (Schore, 2013, 40). A functioning OFC allows the child to engage in flexible, “fine grained” expressive responses to the needs of the social environment by the “top-down” inhibition, modulation, and control of the lower limbic emotional and motivation systems (e.g., attachment needs, joy, fear, anger, and disgust).

Schore argues that it is only with the maturational growth spurt of the left hemisphere, beginning in the middle of the second year, that the child can begin to use language and higher-order reasoning processes (e.g., mentalization) to consciously represent, understand, and voluntarily modulate the limbic system’s emotional and motivational processes. Before then, all emotional processing is unconscious, rapid, and automatic. But importantly, Schore (2014, 390) and others also maintain that right hemisphere limbic system processing of emotions continues to operate automatically in human functioning, below the level of conscious processing. Schore asserts that this unconscious, nonverbal, automatic affective processing constitutes the “biological substrate” of Freud’s concept of the system unconscious (see Schore, 2012). Thus, it is the right limbic system of the mother that “connects” with the right limbic system of the infant. These unconscious, automatic, “right brain-to-right brain” affective communications comprise the dynamic, “intersubjective field” between mother and child.

Finally, Schore contends that because the infant’s ACC does not mature until the third to ninth month and the OFC until the tenth, the child does not have the physical capacity to regulate his/her own emotional states. If the mother cannot contain and modulate the child’s emotions, the child is vulnerable to the possibility of long-term neurobiological impairments in the limbic system due to the chronic presence of hyper-aroused, “toxic” emotional states like terror, rage, depression, and shame (Schore, 2014, 389). It is therefore a biological and psychological

necessity that the mother serves as the “prefrontal cortex” for the child to regulate the child’s emotions through the skilled use of the mother’s own regulated and properly-ordered OFC and limbic system (see Coan, 2008, for a similar idea). In sum, in Schore’s model it is the physiological immaturity of the infant’s brain and inability to regulate his/her own emotions that constitute the proximate evolutionary reasons for the development of the mother-infant “mutual regulation” attachment system in all mammals, including human beings.²³

Conclusion

As can be seen, despite the heterogeneity of their methods and levels of analysis, the physiological, neurochemical, intersubjectivity, and neurobiological perspectives of modern psychobiological and developmental science attachment researchers share much in common with the classical attachment theory models of Bowlby. Bowlby’s basic theoretical formulations remain at the core of their models. The two broad themes that each modern attachment theory model holds in common are that the mother-infant attachment bond acts as a mutual regulation system, and that the mother’s caregiving behavior has a profound influence on the infant’s neural and affect regulation development. However, contemporary genetics, neuroendocrine, microinteraction, and neuroscience research go well beyond Bowlby’s original descriptions and Ainsworth’s empirical observational research on infant proximity seeking and caregiver behavior that deactivates the attachment behavioral system. Modern physiological, genetic, and neuroscientific models were simply not available for Bowlby and Ainsworth to take into account.

It is important to remember that physiological and neuroscience research is not the “be all and end all” of science, and neurobiology does not replace or eliminate research conducted at

²³ A fascinating facet of Schore’s work that is beyond the scope of this dissertation is his application of regulation theory to internal working models. For details, see A. Schore (2012) and J. Schore (2012).

other levels of analysis (see Allen, 2013, 213, for a critique of the excessive enthusiasm of “biomania”; see also Meador, 2006). In line with the extended evolutionary synthesis and developmental psychopathology paradigms, attachment theory is a multidisciplinary and multileveled research project that utilizes a variety of methodological procedures, instruments, and techniques. Neurobiological investigations should, ideally, be dialectically combined and integrated with empirical research, clinical data, and theory construction (see Gay, 2009a, b; Gay and Kreiselmaier, 2016). In this way, neurobiological research can perform a valuable role in constraining and providing checks on “unanchored” intellectual theorizing (Eagle, 2013, 72-74). And clinical data drawn from person-to-person encounters in the psychotherapeutic office can ensure that the neuroscientific and empirical investigations do not “miss” the lived experience of human beings in relationship with each other.²⁴

Finally, as will become apparent in the next chapter, the relational and intersubjectivity perspective and Schore’s developmental affect regulation model—and Main and the AAI—share many similarities with Peter Fonagy’s mentalization theory model. Fonagy is not normally grouped with these researchers, but his MT model can be considered a variant of the intersubjectivity and relational psychoanalysis models, or at least a close family relation.²⁵ As we will see in the next chapter, Fonagy’s model of mentalization and the development of the “agentic self” overlaps with Schore’s picture of early “right-brain” affective neurodevelopment. Mentalization, in part, can be considered as a “left brain” cognitive and affective system that only fully develops once linguistic and theory of mind abilities mature in the third through fifth

²⁴ Interestingly, Fonagy argues that elucidating the biological substrates of attachment processes may help save Bowlby’s classical model from charges of circular reasoning: “The response to separation is attributed to the disruption of a social bond, the existence of which is inferred from the presence of the separation response” (Fonagy, 2001, 16).

²⁵ See Fonagy, Gergely, and Target (2008) and Fonagy (2015) for a discussion of similarities and differences.

year. In Chapter V, I will argue that mindfulness meta-cognitive awareness processes rely on these later developing capacities, as well.

Critiques of AT and Bridging the Nature vs. Nurture Debate

To conclude my presentation of attachment theory in Chapters I and II, I will now examine some longstanding, influential critiques. As I noted at the end of the last chapter, attachment theory has not been without its critics. Over the last fifty years, many academic psychology researchers have challenged and critiqued attachment models and theories. Perhaps one of the most prominent and vocal of these critics has been the Harvard professor of psychology emeritus, Jerome Kagan (e.g., Kagan, 1984, 1998, 2013). For thirty years, Kagan has consistently argued that infant temperament does a better job of explaining child development and later adult personality, rather than parental caregiving styles and the construct of attachment. Kagan defines temperament as “inherited coherences of physiological and psychological processes that emerge early in development, although not necessarily at birth” (Kagan, 2001, 46). Infants inherit thousands of genetically-based temperamental biases, with the more prominent examples including “attentiveness, ease of becoming distressed in reaction to specific events, the form of the distress, the ability to regulate distress, ease of being soothed by another, and the frequency of spontaneous crying, fretting, smiling, babbling, and limb and trunk movements” (Kagan, 2013, 57).

Kagan contends that inherited temperamental biases do not determine later personality characteristics, but do “nudge” individuals in particular directions. In his own longitudinal research (e.g., Kagan and Snidman, 2004; Kagan, 2010), Kagan examined the temperaments of 500 Caucasian middle class infants and followed their progress through adolescence. The infants were classified into one of four temperamental groups, based on their reactions to unfamiliar

objects and events at four months of age. “High-reactive” infants shook their arms and legs, arched their backs, and cried at unfamiliar events; “low-reactive” infants lay still and rarely arched their backs or cried; “distressed” infants lay still but cried frequently; and “aroused” infants showed frequent motor activity but rarely cried. Furthermore, Kagan further contends that high-reactive infants tend to develop into shy and timid toddlers and anxious adolescents who worry excessively and have fewer friends. By contrast, low-reactive infants tend to develop into relaxed and sociable toddlers and “fearless, exuberant, and highly sociable” adolescents (Kagan, 2013, 57). Yet despite the prominence of physiological variables in his model, Kagan does affirm that the “initial temperamental profile” of the child is shaped and modulated by the familial, social, and cultural environment. Thus, for Kagan, inborn temperamental profiles combine with experiential histories of family, peer, and adult relationships and with the institutions, technology, and values of a historical culture to produce the knowledge, traits, values, and skills of human personality (Kagan, 2013, 7).

Most of Kagan’s critiques of the attachment theory paradigm appear to come from his research on temperaments. For example, in his recent book, *The Human Spark* (2013), Kagan contends that the infant separation and reunion behaviors which are measured in Ainsworth’s classic Strange Situation test (Ainsworth et al., 1978; see Chapter I) are better accounted for by individual differences in infant temperament. Kagan contends that the infants Ainsworth classified as *insecure-avoidant* (low distress when the mother left the room, do not seek reunion when she returned, continued playing throughout) are better characterized as having a low-reactive temperament. Because these infants were so “minimally irritable” in the laboratory and at home, their mothers had learned that they did not have to soothe them whenever they were upset. Hence, Kagan maintains that Ainsworth and her colleagues misidentified these mothers as

“insensitive” to their infants’ needs, and the infants as insecurely attached (Kagan, 2013, 108). Likewise, Kagan argues that the infants Ainsworth classified as *insecure-ambivalent* (high distress and anger before and after the mother left the room, did not resume playing after reunion) actually had high-reactive temperaments. Once again, because these infants were so “unusually irritable” in the lab and at home, their mothers had learned that their attempts to soothe their children would often not be successful and the children would eventually stop crying on their own. Perhaps not surprisingly, Kagan argues that Ainsworth assessed these mothers as insensitive, and the infants as insecurely attached (Kagan, 2013, 108).

Kagan (2013) has drawn several conclusions from his temperament research that he believes undermines attachment theory models. First, Kagan contends that longitudinal research demonstrates that parental caregiving behaviors and infant attachment patterns in the first year of life are not significant predictors of attachment patterns in adolescence and beyond. Kagan cites his own longitudinal research as evidence, plus the longitudinal studies of attachment researchers like Alan Sroufe (see Sroufe et al., 2005; Grossman, Grossman, and Waters, 2005; see Chapter I). Kagan contends the longitudinal data instead indicate that infant temperament is a better predictor of future child and adolescent personality. Hence, a “strong” model of attachment theory, which predicts long-term effects on human personality by caregiving styles in the first year of life, is wrong (Kagan, 2013, 108-109).

Second, Kagan argues that attachment theory does not accommodate changes in parental caregiving styles based on infant temperaments. Caregiving styles are often a product of individual differences in infant physiological and psychological traits, as well as a cause. Finally, Kagan argues that the standard tests for attachment in childhood and adulthood, the Ainsworth’s Strange Situation test (Ainsworth et al., 1978) and Main’s Adult Attachment Interview (Main et

al., 1985; see Chapter I) are insufficiently sensitive to human temperamental variables. In closing his critiques, Kagan does acknowledge that future research will be needed to resolve these questions and disputes (Kagan, 2013, 110).²⁶

In assessing Kagan's critiques, it is important to acknowledge that these questions are beyond the scope of this dissertation to resolve. I am a religious studies scholar, and (as yet) do not engage in primary psychological research on attachment. Hence, I rely in this dissertation on the psychological theories, models, methods, and assessment measures of Bowlby, Main, Shaver, Schore, Fonagy, and other neuroscientific and psychological researchers. When their models change and adapt to the latest empirical, neuroscientific, and clinical research, my models and ideas will, as well.

However, in perusing the latest research that examines the relationship between attachment and temperament (e.g., Zentner and Shiner, 2012; Cassidy and Shaver, 2016), I can make one general comment about Kagan's critiques. In my view, the nature and tone of Kagan's criticisms appear to be a holdover from older, vigorous "nature versus nurture" disputes in developmental psychology, of which Kagan played a major part (Belsky and Fearon, 2008; van IJzendoorn and Bakermans-Kranenburg, 2012). In these debates, "strong" models of the effects of biological mechanisms like temperament on human development and personality (e.g., Chess and Thomas, 1982; Kagan, 1982) were pitted against "strong" models of the effects of social and environmental contingencies like attachment on development (e.g., Sroufe, 1985). Some of

²⁶ Kagan uses polemical language in his criticism of attachment theorists. In regards to Main's AAI test, he states that narrative coherence is a product of "variation in verbal skills, quality of schools attended, and time spent reading" rather than attachment, and that the AAI "should have been called the Adult Semantic Coherence Interview, not the Adult Attachment Interview." Of attachment theorists in general, he states, "I suspect that scientists born after 1950 who were attracted to Bowlby's intuition that 'uncertainty over the accessibility of an attachment figure is a principal condition for the development of an unstable, anxious personality' were projecting their personal wish for more trusting relationships with lovers, friends, and colleagues onto young infants. It is easy for adults to assume that infants deal with some of the same problems they confront and to assign these problems to young children" (Kagan, 2013, 110).

Kagan's current criticisms (2013) seem to echo these older disputes. For example, Kagan's primary target in attachment theory appears to be the older "template" model of attachment, which was espoused by Bowlby early in his career (1969) and by subsequent attachment researchers in the 1970s and 1980s (see Grossman et al., 2005). As I discussed in Chapter I, advocates of this model hypothesized that early infant attachment plays a "template" role by directly determining (or at least strongly influencing) adult attachment functioning.

Yet recent reviews of the literature indicate that the heat and storm of the old battles are largely over now. Both temperament researchers and attachment researchers accept that attachment security is influenced by infant temperament AND parental caregiving styles (see van IJzendoorn and Bakermans-Kranenburg, 2012; Vaughn and Bost, 2016). According to van IJzendoorn and Bakermans-Kranenburg (2012, 403), one of the main "inspirations" for this ceasefire came from the groundbreaking epigenetics research of Michael Meaney (Meaney, 2001; Szyf, Weaver, and Meaney, 2007). As I discussed in the last section, Meaney and his colleagues demonstrated the epigenetic effects of early mother-infant attachment relationships on the stress response of rat pups. Meaney discovered that variations in maternal caregiving behaviors (e.g. "high" versus "low" licking) had direct effects on the genetic expression and functioning of the hypothalamic-pituitary-adrenal (HPA) axis in the rat pups. The HPA axis is associated with the "fight or flight" stress and fear response system, and is considered to be a direct neurobiological substrate of the temperamental dimensions of inhibition and emotional reactivity. Differences in maternal caregiving behavior thus have a direct effect on the expression and developmental trajectory of temperamental biases.

As I discussed in Chapter I, the major longitudinal studies of attachment functioning support an "interactionist" or "transactional" model of human development (e.g., Grossman et

al., 2005). Transactional models emphasize just these kinds of gene by environment (epigenetic) contextual interactions. New “G X E” research paradigms that integrate temperament and attachment are just beginning to tease out the complex, reciprocal interactions of parental caregiving styles (e.g., sensitivity), infant temperament expression, and infant attachment security (see van IJzendoorn and Bakermans-Kranenburg, 2012; Vaughn and Bost, 2016). What all of these new studies tell us is that parenting styles, parents’ own attachment history, infant genetics and temperament, and early environmental circumstances all interact in a complex, dynamic manner to form infants’ early attachment styles. These early attachment styles initiate long-term “developmental pathways” that contextually interact with changing life and relational circumstances across the lifespan (Fraley and Roberts, 2005; Grossman et al., 2005; Thompson, 2008; Weinfield et al., 2008).

In light of the new epigenetic research and end of the forty-year war between temperament and attachment theory researchers, I believe that Kagan’s temperament models and his critiques of attachment theory can be better appreciated and understood. Rather than undermining attachment theory and the role of parental caregiving sensitivity, temperament researchers can be seen as upholding the equally crucial role of biology and physiology in human development. Kagan’s temperament theories and models can be appropriated and drawn up into the new, highly sophisticated research paradigms which integrate caregiving sensitivity, temperament, and attachment security (Vaughn and Bost, 2016).

In a recent review, Kagan himself acknowledges that the new epigenetics research represents a “revolutionary shift” in the underlying constructs and mechanisms used in developmental psychology. As he states, “[b]ecause experience and genes appear to be engaged in a ballet in which each is continually affecting the other, psychologists must invent concepts

that capture this dynamic process” (Kagan, 2013, 131). Kagan’s latest developmental models also appear to reflect this new revolutionary shift. For example, in the last decade Kagan has co-authored books and chapters with neurobiological researchers that examine the complex developmental interrelations between genetics, the infant brain, temperament, and the sociocultural environment (e.g., Kagan and Herschkowitz, 2005; Kagan and Fox, 2006). Thus, while Kagan’s rhetoric against attachment theory has not always changed with the times (2013), his own models and theories do appear to be quite consistent with the contemporary neurobiological and empirical developments in the field.

Our main focus throughout is on the development of representations of psychological states in the minds of infants, children, adolescents, and adults. Mentalization—a concept that is familiar in developmental circles—is the process by which we realize that having a mind mediates our experience of the world. Mentalization is intrinsically linked to the development of the self, to its gradually elaborated inner organization, and to its participation in human society, a network of human relationships with other beings who share this unique capacity.

Fonagy, Gergely, Jurist, and Target, 2002, 3

CHAPTER III:

PETER FONAGY AND MENTALIZATION THEORY

With the classical and modern attachment theories introduced, I will now turn in this chapter to an explication of Peter Fonagy's influential, contemporary psychoanalytic models of mentalization theory and mentalization-based therapy (MBT). As noted in Chapter I, Fonagy considers himself an attachment theory researcher, and his model developed directly out of Mary Main's AAI research and the analysis of the intergenerational transmission of attachment.

I will first introduce the concept of mentalization, trace its sources in psychoanalysis, attachment theory, and developmental psychology, and describe its possible origins in human evolution. Then, I will define mentalization in detail, and discuss its differences and similarities with other psychological constructs. Next, I will present Fonagy's analyses of the four components of mentalization, the social biofeedback theory, and the stages of the development of the agential self. Finally, I will describe the complex relations of attachment history, stress arousal levels, and mentalization.

Introduction to Mentalization

Fonagy's mentalization-based therapy (MBT) is one of the more prominent and influential clinical research models of psychodynamic psychotherapy today (see Mayes, Fonagy, and Target, 2007; Busch, 2008; Jurist, Slade, and Bergner, 2008). In essence, mentalization refers to the human capacity to understand the behavior of ourselves and others as meaningful in terms of underlying "mental states" like emotions, thoughts, wishes, and desires. Although the term may at first sound overly mechanical and intellectual, mentalization is actually fundamental to human life and to navigating the social world. The capacity to mentalize helps to enrich human agency, make meaning of experience, regulate emotions, and cultivate interpersonal relationships. Some scholars even argue that mentalization represents the "evolutionary pinnacle of human intellectual achievement." It is one of the "bedrocks" of our species' unique capacities for collaborative social relations, communication, culture, and morality (Fonagy, 2006, 55; see Tomasello, 2008, 2014a).

Fictional Case Vignettes

To help ease our way into understanding this complex concept, consider the following two fictional case vignettes that I have constructed:

Bill goes into his boss's office for his yearly work evaluation. The boss states that Bill's performance this year was barely satisfactory; he is frequently late and has not met his sales quotas for the past two quarters. The boss wonders if Bill is having any problems at home, and recommends Bill apply to the office mentoring program to see if older colleagues can help Bill with his sales strategies. From the beginning of the evaluation, Bill feels under pressure from his boss's remarks. He feels his heart race, his face flush, and his hands clench. He scans his boss's face and thinks he can detect disapproval and scorn. Why is his boss ripping into him like this? Moreover, despite the fact that Bill's wife left him three months ago and he has started drinking again, Bill is incredulous that his boss thinks there's something wrong at home. He's having some trouble sleeping, and, sure, he's a little late sometimes. But Bill's strong enough to keep his work life separate from his home life. He's also had an unlucky streak at work, and will just have to try

harder. Things have always worked out in the past, Bill reasons, even though this is his third job in two years. Bill wishes his boss would just butt out and leave him alone. And why would he need to go get some help from his coworkers? His boss is just like his wife!

Julia sits down on her couch and takes a deep breath. Michael, the man she has been dating the last three months, has just told her by phone that he wants to “take a break.” He is going to work on his “own issues” for a while, and hopes they can reconnect again in the future. Julia is shocked at this turn of events, and feels a heaviness come over her. Her thoughts flow back to the third grade. Her father had taken his own “break” from the family for several months when he entered a hospital for “emotional issues.” Julia feels the old, familiar feelings of sadness and fear that she had felt as a child and briefly wonders if she has done anything wrong. But Julia has learned through therapy to be mindful of these kinds of triggering emotions and events. She has worked through her childhood feelings of abandonment and of self-blame for her father’s mental illness. She is also aware of how these feelings have colored her relations with men in the past. Moreover, Julia knows that Michael’s mother passed away from cancer several years before. Maybe he has his own unresolved issues of loss or self-blame with his mother? Maybe he fears that if he gets too close to Julia, she might get sick as well? Although Julia feels sad and disappointed at the break up with Michael, she determines to use this time to reconnect with old friends and to put more energy into her creative writing.

What is the major difference between these two fictional characters? According to Fonagy and his colleagues, in the first example Bill evidences what is referred to in the psychological literature as “mindblindness” (Allen, 2006, 11-12). In other words, he fails to “mentalize” his own or his boss’s behavior and experience. Bill shows: an impoverishment of inner experience; a lack of curiosity about his or others’ mental states; a failure to connect his present views with the past; a rigid adherence to and certainty about his own views; a focus on the external behaviors of others, and on internal physical sensations in himself; an inability to control or modulate his angry emotions; negative distortions about his boss’s motives; and a focus on concrete reasons for his own actions. In short, Bill shows very little psychological awareness or insight (Luyten, Fonagy, Lowyck, and Vermote, 2012, 58-59).

In the second example, Julia evidences a high level of mentalization. Julia is able to successfully and adaptively mentalize about her own and Michael’s behavior and experience. Julia shows: a rich level of inner experience; a curiosity about her own and Michael’s mental

states; an awareness of the “representational” or perspectival nature of mental states, and an awareness that they can be more or less accurate; an awareness of the connections between current mental states and relational experiences in the past; a focus on the internal mental states as well as external behaviors of both herself and others; an ability to regulate her emotions; an ability to identify and modulate negative, distorted thoughts and feelings; and a focus on rich, coherent narratives of the reasons for her actions and experience. In short, Julia demonstrates a high level of psychological awareness and insight into her behavior, thoughts, and emotions, as well as insight into the possible experiences of Michael (Luyten et al., 2012, 58-59).

The differences between the two cases illustrate many of the most important constructs, processes, and skills of the capacity to mentalize. With this basic understanding in mind, I will now present Fonagy’s mentalization theory and mentalization-based therapy models.

Peter Fonagy, Mentalization Theory, and Mentalization-Based Therapy

The founder and creator of mentalization-based therapy is Peter Fonagy, Ph.D., O.B.E. Fonagy (1952-) is the Freud Memorial Professor of Psychoanalysis and Head of the Research Department of Clinical, Educational and Health Psychology at University College London. He is also the Chief Executive of the Anna Freud Center in London. Fonagy was born in Budapest, Hungary, and his family moved to Paris when he was young. As a self-described “troubled youth,” Fonagy left home at age 14 and travelled alone to Britain (Palombo et al., 2009, 335). At age 17, he contacted the Anna Freud Centre in London and began an analysis. Fonagy described the analysis as “life-saving,” as it allowed him to pass his entrance exams and enter university. He earned a Ph.D. in neuropsychology at UCL and trained in psychoanalysis at the Institute of Psycho-Analysis. He also trained in child and adolescent psychoanalysis at the Anna Freud

Centre, where he became Research Director in 1989 under the mentorship of Joseph Sandler (Palombo et al., 2009, 336). As well as his posts at UC-London and the Anna Freud Centre, Fonagy serves as a clinical professor of psychiatry at Yale University School of Medicine and as an adjunct professor at the Menninger Clinic at the Baylor College of Medicine.

Fonagy's most frequent collaborators have been his colleagues at UC-London, the Anna Freud Centre, Yale, and the Menninger Clinic. At UC-London and the Anna Freud Centre, he has collaborated with Mary Target, Anthony Bateman, and Howard and Miriam Steele. At Yale, he has written with Linda C. Mayes and the late Sidney Blatt. At Menninger, he has co-authored with Jon Allen, Efrain Bleiberg, and Lane Strathearn. Fonagy also collaborates frequently with the Hungarian cognitive and developmental psychologist, Gyorgy Gergely, and the Belgian psychological researcher, Patrick Luyten.

For almost thirty years, Fonagy and his colleagues have developed mentalization theory and mentalization-based therapy (MBT) into a multi-leveled, multidisciplinary clinical research project. Fonagy created MBT by weaving together strands from British object relations psychoanalysis, attachment theory, the "theory of mind" literature from cognitive psychology, and contemporary cognitive, affective, and developmental neuroscience (Allen et al., 2008). MBT consists of "a developmental model, a theory of psychopathology, and a hypothesis about the mechanism of therapeutic action" (Bateman and Fonagy, 2012, xv).

The basic contention of mentalization theory is that the ability to understand and reflect upon the behavior of ourselves and others in terms of thoughts and feelings is a "developmental achievement." Mentalization develops in the context of early attachment relationships between infants and parents. It is the caregiver's own ability to understand and mirror the infant's mental states, to "keep the infant's mind in mind," that facilitates this process (Allen et al. 2008, 3). The

infant, in turn, “discovers” his/her internal mental world by “finding it” in the mind of the parent. Adequate parental mirroring fosters the infant’s self- and affect regulation abilities. Inadequate mirroring, especially in the context of trauma and neglect, leads to deficits in mentalization (Fonagy et al., 2002).

Fonagy first developed his theories in the 1990s in the context of treatment for patients with borderline personality disorder (BPD). His mentalization-based therapy (MBT) model is one of only two evidenced-based, manualized, psychodynamic treatments for BPD available today (Bateman and Fonagy, 2008).²⁷ Over the years, MBT has also been modified for use with a wide range of psychiatric disorders and treatments. These include affective disorders, anxiety disorders, psychosis, eating disorders, somatic disorders, substance abuse, child, adolescent, and family therapy, and others (see Bateman and Fonagy, 2012).

Due to Fonagy’s and his colleagues’ prolific efforts, mentalization theory and therapy research has grown from a handful of studies in the 1990s to almost 4000 journal articles, 250 chapters and books, and 1600 dissertations and theses.²⁸ Fonagy has contributed over 600 authored and co-authored articles and chapters, 17 authored and co-authored books, and 15 edited or co-edited books.²⁹ The mentalization construct has influenced other psychodynamic models, as well. Mentalization and its operationalization, “reflective functioning,” is used as a therapy research outcome variable in several other major models of psychodynamic therapy (e.g., Kernberg et al., 2008; Gabbard et al., 2008). Moreover, mentalization (or its equivalent) is

²⁷ The other is Otto Kernberg’s Transference Focused Psychotherapy. See Clarkin, Yeomans, and Kernberg, 2006.

²⁸ Search conducted on 11-24-15, from <http://search.proquest.com.proxy.library.vanderbilt.edu/>

²⁹ Retrieved on 11-24-15, from <https://www.ucl.ac.uk/psychoanalysis/people/peter>. Fonagy’s most important books include *Affect Regulation, Mentalization and the Development of the Self* (Fonagy, Gergely, Jurist, and Target, 2002); *Psychotherapy for Borderline Personality Disorder: Mentalization-Based Treatment* (Bateman and Fonagy, 2004); *Mentalizing in Clinical Practice* (Allen, Fonagy, and Bateman, 2008); and *Handbook of Mentalizing in Mental Health Practice* (Bateman and Fonagy, 2012).

central to contemporary ego psychology models of psychoanalysis (e.g., Gray, 1994; Sugarman, 2006; Busch, 2014).

The Origins of the Mentalization Concept and Mentalization-Based Therapy

Fonagy and his colleagues have constructed mentalization theory and mentalization-based therapy (MBT) from a wide range of theoretical, empirical, and neuroscientific theories. There are at least four major sources for his mentalization construct (Allen et al., 2008; Holmes, 2006). First, mentalization is rooted in psychoanalytic theory. Fonagy states that mentalization derives from Freud's concept of *Bindung* or "binding" (Allen et al., 2008, 8). Binding refers to transforming somatic drive energies into symbols and thought. Unbearable, unarticulated bodily impulses are bound into tolerable psychic experience instead of being acted out. According to Freud, this leads to insight and self-control (Freud, 1895, 1900). Bion's (1962) concept of "alpha function" has a similar meaning. French theorists were the first to use the word, *mentalisation*, in the 1970s (e.g., Marty, 1968).³⁰

Mentalization-based therapy also draws heavily from the British object relations theory (ORT) tradition. Fonagy cites Bion (1962) and Winnicott (1965, 1971) as among the first psychoanalytic theorists to recognize that self-development is an interpersonal process, rather than being solely intrapersonal. In effect, "the psychological self develops through the perception of oneself in another person's mind as thinking and feeling" (Fonagy et al., 2002, 22). As we will see, Fonagy has used a number of ORT theories in the formulation of MBT, including containment and affective mirroring, the transitional space, projective identification, and the false self (see Fonagy et al., 2002).

³⁰ The French-Canadian theorists Lecours and Bouchard (1997) have presented five developmental levels of mental elaboration: disruptive impulsion, modulated impulsion, externalization, appropriation, and meaning associations. See Allen et al., 2008, 9-10; Choi-Kain and Gunderson, 2008, 1128-1129.

The second source of mentalization is the “theory of mind” research from developmental psychology. Theory of mind refers to the capacity to attribute mental states like intentions and beliefs to others to understand their behavior (Morton and Frith, 1995, 363). Since the 1980s, researchers have investigated the development of theory of mind in children and in autistic patients (e.g., Wellman, 1990; Baron-Cohen, 1995). Theory of mind is assessed with “false-belief” tests, which measure a child’s awareness that others’ beliefs about the world may not correspond to reality and may differ from one’s own (Wimmer and Perner, 1983). Research indicates that most 3-year-old children cannot pass false-belief tasks. Most four-year-olds can. Most first-graders realize that *all* mental states, including one’s own, are “re-presentations” of reality, *not reality itself* (Sharp, 2006). As was shown in Chapter I, Mary Main drew upon theory of mind research to construct the “metacognitive monitoring” subscale in the AAI (the *appearance-reality distinction*, *representational diversity*, and *representational change*; see Main, 1991).

The third major source of mentalization theory is attachment theory. Fonagy has stated that he sees attachment theory as his own “secure base” (Fonagy, 2015, 355). His formulations are steeped in attachment concepts, theories, and empirical research. For example, Fonagy’s mentalization theory and therapy models employ Bowlby’s emphases on evolutionary theorizing, the influence of attachment relations throughout life, and IWMs; Ainsworth’s and Main’s empirical assessment research; and Shaver’s research on adult attachment styles (e.g., Fonagy et al., 2002; Luyten et al., 2012). Like these researchers and the modern attachment neuroscience

researchers discussed in Chapter II, Fonagy has sought to update classical attachment theory with contemporary psychodynamic theories and the latest research from the developmental sciences.³¹

Finally, the fourth major source is evolutionary theory. Following Bowlby, Fonagy has hypothesized about the origins of mentalization in human evolution (Fonagy, 2006; Allen et al., 2008). Anthropological and evolutionary biology research suggests that advanced mentalization capacities may have evolved in *Homo sapiens* up to 200,000 years ago (Frith and Renfrew, 2008). Fonagy contends that the adaptive advantage mentalization gave our ancestors was the development of “social intelligence” (Fonagy, 2006, 55). The capacity to understand behavior in terms of mental states enabled our ancestors to foster social collaboration and cooperation within their kinship groups. This greatly increased a given group’s ability to adapt to the physical environment, as well as to compete with other kinship groups for the resources necessary for survival.

Recently, Fonagy has adopted the “theory of natural pedagogy” (ToNP) model of his colleague, Gyorgy Gergely. ToNP describes the social cognitive learning mechanism that may have evolved in our hominid ancestors to enable the efficient transmission of cultural knowledge through communication (Csibra and Gergely, 2011). As human culture increased in symbolic and technological complexity over the last one hundred thousand years, it became essential for parents to teach children how to function socio-culturally within the group. Central to ToNP is the notion of “epistemic trust,” which is an infant’s evolved state of preparedness to learn important information about human subjectivity and the social world. It is triggered by parental cues like eye contact and turn-taking. Fonagy now locates mentalization within this broader

³¹ Fonagy has written extensively on the relations of attachment theory and psychoanalysis, and their recent steps toward “reconciliation.” See Fonagy, 2001; Fonagy, Gergely, and Target, 2008; Fonagy and Campbell, 2015.

model of social learning (Fonagy et al., 2015). One function of the attachment bond is to teach infants “about the nature of subjectivity and the symbolic functioning of the human mind” (Fonagy and Campbell, 2015, 239). I will return to evolution theories in Chapter VI.

The Development of Mentalization Theory from AAI Research

Fonagy developed the concept of mentalization and mentalization-based therapy in the 1990s in the context of his clinical work and his empirical research on parent-infant attachment transmission (Fonagy et al., 2002).³² As discussed in Chapter I, Mary Main discovered that parents’ AAI attachment categories predict their infants’ SS attachment classifications (Main et al., 1985). In effect, parents “transmit” their attachment styles to their children (van IJzendoorn, 1995). As we have seen, Fonagy’s team was the first to discover that parent’s AAI attachment classification predicted their infant’s Strange Situation test classification, *even before the birth of their child* (Fonagy, Steele, and Steele, 1991). During the course of this research, Fonagy noticed that while Main had drawn upon theory of mind research to construct her “metacognition” scale, she focused largely on parents’ capacities to reflect upon the meta-representational qualities of *their own* thoughts and memories. The large body of theory of mind research, however, focused on measuring children’s capacities to reflect on *other people’s* minds.

Drawing the AAI and theory of mind research together, Fonagy and his colleagues expanded Main’s metacognition scale to include the measurement of parents’ capacities to reflect upon their *own* and *others’* mental states. Fonagy’s team operationalized this capacity as “reflective function” and devised a new scale for its measurement called the Reflective-Functioning Scale (RFS; Fonagy, Target, Steele, and Steele, 1998). The RFS is a separate scale

³² MBT also derived from Fonagy’s research on the development of psychic reality in children and in BPD (Fonagy and Target, 1996, 2000, 2007; Target and Fonagy, 1996). I will discuss this later in this chapter.

used to code reflective functioning in AAI narratives. The assessor rates levels of reflective function in the participant's responses to AAI questions, and then assigns a global reflective function score. The reflective function ratings fall on a continuous 11-point scale, ranging from -1 to 9. A -1 score refers to the "systematic dismissal, derogation or hostility at any attempts at reflection"; 9 is "an exceptional sophistication in the understanding of complex mental states" (Katznelson, 2014, 108). The scale measures the following four dimensions of reflective function: 1) the awareness of the representational nature of mental states in self and others; 2) the "explicit effort to tease out mental states underlying behavior"; 3) understanding the developmental nature of mental states; and 4) an awareness of mental states in relation to communicating with the interviewer (Fonagy et al., 1998, 19-25).

Over the next decade, Fonagy's Reflective Functioning Scale research indicated that infants' Strange Situation attachment classifications were predicted even more strongly by their parents' reflective function score than by the AAI coherence scores ($r = .51$ for mothers; Fonagy, Steele, Moran, Steele, and Higgitt, 1991, 214). Moreover, reflective function accounted for a greater percentage of variance in adult attachment security, and in the distinction between secure and insecure attachment classification, than AAI coherence. These results suggested that coherence in AAI narratives is *dependent* on adults' reflective function capacity (Fonagy et al., 1998, 11). Synthesizing this Reflective-Functioning Scale research with attachment theory and psychoanalysis, Fonagy hypothesized that a "vital synergy" exists between parents' reflective function capacity and the development of reflective function in their infants (Fonagy and Allison, 2012, 12). Mentalization theory developed in part to investigate this link.³³

³³ Twenty years of research consistently links infant mentalization capacity with the quality of parent-infant attachment. I do not have space to explore this research. See Fonagy et al., 2002; 2007; 2008; 2012; 2015.

Defining Mentalization

In the next two sections, I will present Fonagy's definition of mentalization and describe some of its neural substrates. As noted above, despite its mechanical-sounding name mentalization is actually a very familiar human process that we all use to make meaning of our experience and to navigate through the social world. Fonagy defines mentalization as "the imaginative mental activity that enables us to perceive and interpret human behavior in terms of intentional mental states (e.g., needs, desires, feelings, beliefs, goals, purposes, and reasons)" (Fonagy, Bateman, and Luyten, 2012, 4).

Four general aspects of the nature of mentalization are important here. First, despite its cognitive-sounding ring, mentalization actually attends to a vast array of cognitive, emotional, and motivational mental states in self and others. Concomitantly, humans use a vast assortment of mental processes to ascertain these mental states—e.g., perceiving, attending to, describing, labelling, imagining, remembering, anticipating, interpreting, and reflecting upon (Allen, 2006, 6-7). Second, Fonagy argues that mentalization is a representational process. The mind mediates our experiences of the inner and outer world by "re-presenting" reality. Our mental representations are thus always perspectival and subjective. In other words, they can be more or less accurate, more or less distorted, and more or less in concert with the representational perspectives of others (Allen et al., 2008, 2-4).

Third, mentalization involves a developmental process of increases in "symbolization" or "mental elaboration." A major goal of psychotherapy is "transforming the nonmental into the mental": unformed and unbearable impulses and emotions are transformed into complex, rich, and verbally-articulated autobiographical narratives. This is thought to increase meaning, wisdom, and control (Allen et al., 2008, 8-10). Fourth, mentalization is "imaginative." The

mental states of others and even those of ourselves are often shrouded and opaque, and we must use imagination and empathy to interpret our personal experience and the experience of others (Fonagy et al., 2010, 38).

As can be seen, mentalization overlaps conceptually with a wide range of other psychological processes, such as empathy, mindfulness, metacognition, and the theory of mind. Fonagy argues, however, that mentalization is unique from these other constructs in combining *reflection* upon thoughts *and* feelings, in both self *and* others (Allen et al., 2008, 41). For example, while empathy focuses on the awareness of the emotions of others, mentalization includes reflection upon cognitions and emotions. Similarly, theory of mind and metacognition emphasize reflection upon the cognitions of self and/or others, while mentalization also reflects upon feelings. Moreover, the scope of mentalization is narrower than some other processes. Mindfulness, for example, involves present-moment attention to anything that comes into the stream of consciousness, including thoughts, feelings, and sensory/bodily experiences. Mentalization reflects upon the mental states underlying behavior, solely. It does not normally include reflection upon bodily sensations (Allen et al., 2008, 40-59). I will compare and contrast the constructs of attachment, mentalization, and mindfulness in detail in Chapter V.

The Four Neurocognitive Components of Mentalization

A full understanding of mentalization also includes a grasp of its neurocognitive components. Drawing on recent neuroscientific research, Fonagy depicts mentalization as a multidimensional construct that derives from four relatively distinct neural systems (Luyten and Fonagy, 2015). Each component is comprised of a dimensional polar continuum. Therapists can assess each component to create a “mentalizing profile” of a client’s strengths and weaknesses in

mentalization. As will be seen, these neural systems overlap considerably. It is their complex combinations that determine the quality of person's mentalization in a given context.

Controlled versus Automatic Mentalization

First, and most importantly, Fonagy contends that mentalization can be distinguished in terms of *controlled* (explicit) versus *automatic* (implicit) processes (Luyten and Fonagy, 2015, 368). Controlled mentalizing makes up much of the material of psychotherapy: consciously reflecting upon the experiences of ourselves and others, often in the form of narratives.

Controlled mentalizing is conscious, reflective, deliberate, and slow. When effective, it is rich, accurate, and flexible. When ineffective, it is rigid and often overwhelmed by unbearable affects. Controlled mentalizing depends on language and "effortful control" (Allen et al., 2008, 26-28; Fonagy et al., 2012, 21-22).

Automatic mentalizing, by contrast, consists of the unconscious processing of emotional states and body language in ourselves and others (Allen et al. 2008, 26-28). It is unconscious, rapid, reflexive, and non-verbal. Examples include an intuitive awareness of dangerous situations or the automatic mirroring of faces in conversation. Automatic mentalizing has enhanced human survival over the millennia, as it connects with rapid social processing and our fight/flight mechanisms (Luyten and Fonagy, 2015, 369). However, automatic mentalizing is not always adaptive in our complex modern world. A history of relational trauma may distort our automatic responses. Mentalization-based therapy seeks to make our automatic processes more explicit and to revise distortions in our IWMs (Fonagy et al., 2012, 20-22).

In a recent neuroscience review (Luyten and Fonagy, 2015), Fonagy has described the neural circuits which may underlie the controlled/automatic component. Controlled mentalizing

appears to be subserved by phylogenetically “newer” brain circuits that rely on linguistic/symbolic processing. Controlled mentalizing is associated with the medial prefrontal cortex (MPFC), involved in self- and social cognition; the lateral prefrontal cortex (LPFC) and lateral parietal cortex (LPAC), implicated in reasoning and effortful control; the medial parietal cortex (MPAC), involved in explicit perspective-taking; the medial temporal lobe (MTL), which stores declarative memory; and the rostral anterior cingulate cortex (rACC), associated with explicit “conflict processing” (Luyten and Fonagy, 2015, 370).

Automatic mentalizing, in contrast, is associated with “older” brain circuits implicated in rapid, implicit social processing and the detection of threat (Luyten and Fonagy, 2015, 370). Automatic mentalizing circuits overlap with Schore’s model of implicit right-brain affective communications, discussed in Chapter II. Automatic mentalizing is associated with the amygdala, involved in threat detection and the fight/flight response; the basal ganglia, involved with reward-related emotional processing; the ventromedial prefrontal cortex (VMPFC), which modulates the amygdala and the basal ganglia; the lateral temporal cortex (LTC), involved in the implicit processing of social intentions; and the dorsal anterior cingulate cortex (dACC), implicated in pain-related emotional distress. As I will discuss later in this chapter, Fonagy associates automatic mentalizing with primitive “pre-mentalizing” states that emerge under duress (Luyten and Fonagy, 2015, 369-370).

Self versus Other Mentalization

The second component of mentalizing is the distinction between mentalizing *selves* versus *others* (Luyten and Fonagy, 2015, 371). Surprisingly, neuroscientific research suggests that the controlled/automatic distinction is crucial here, as well (Ripoll et al., 2013). The

automatic mentalizing of others overlaps with the well-known “mirror neuron” system discovered by Vittorio Gallese (e.g., Gallese et al., 2004). Gallese found that when test monkeys observe other monkeys swing sticks, their motor neuron regions activated. In other words, the monkeys “simulated” the motor actions of others, despite remaining still. Humans and monkeys also simulate the affective states of others through activation of “visceromotor” neural regions involved in emotional processing (Frith and Frith, 2012). These affective/motor simulation processes allow humans to “viscerally” attune with the mental states and actions of others at a deep, bodily-based level. Moreover, this capacity may be one of the “key evolutionary mechanisms” that underpin human attachment processes, social empathy, and complex social relations (Luyten and Fonagy, 2015, 371).

Fonagy contends that controlled mentalizing of self and others are more complex processes. Controlled mentalizing of the self is the “mental elaboration” of our inner experience. It involves grappling with conflicted emotions, exploring hidden layers of complexity, and reflecting upon who we want to be (Allen et al. 2008, 29-33). Jurist (2005) terms this process “mentalized affectivity,” and considers it reflective of “emotional clarity” and wisdom. Controlled mentalizing of others, in contrast, involves the capacity to use “perspective taking” and active imagination to place ourselves in the “shoes” of others. High level versions (termed “cognitive empathy”) consist of “working actively with imaginative representations of shared experience” in order to explicate the possible reasons for another’s emotions, beliefs, desires, and goals (Allen et al. 2008, 47-48; 56-57).

Ripoll and colleagues (2013) have delineated two different neural circuits which underpin the automatic and controlled mentalizing of self and others. The “shared representation” network (SR), which underlies the automatic mentalizing of others, is associated with the “older”

frontoparietal regions of the brain. The SR network includes the amygdala; the inferior frontal gyrus and the inferior parietal lobule, which are “rich” in mirror neurons; and the anterior insula and dorsal ACC, involved in emotional processing and pain (Ripoll et al., 2013, 3; Luyten and Fonagy, 2015, 371). In contrast, the mental state attribution network (MSA) is involved with the controlled mentalizing of others, and is located in “newer” cortical midline and temporal areas. The MSA network consists of the ventromedial PFC and dorsomedial PFC, the temporoparietal junction (TPJ), and the medial temporal pole (Ripoll et al., 2013, 4; Luyten and Fonagy, 2015, 371). As we have seen, these regions are associated with symbolic processes, higher reasoning, perspective-taking, and theory of mind.

Internal versus External Mentalization

Third, Fonagy contends that mentalization includes a distinction between focusing on *internal* versus *external* features of self and others (Allen et al., 2008, 30-31; Fonagy et al., 2012, 22-24). The mentalization of internal features of the self and others are the same as described above (mentalized affectivity, cognitive empathy, and automatic mentalization). Mentalizing the external features of self and others refers to deriving inferences and attributions of mental states and intentions from one’s own and others’ physical and behavioral characteristics, such as facial expressions, posture, and verbal prosody (Luyten and Fonagy, 2015, 370). In effect, it is an investigation of oneself or others from a “third-person” perspective, much like an object. For example, you might notice you are visibly trembling, and then conclude that you are fearful. Fonagy argues that external self- and other-mentalization yields shallow insight and understanding. An exclusive reliance on these processes is associated with personality disorders and the “mindblindness” of autism (Allen et al. 2008, 30-31; Fonagy et al. 2012, 22-24).

Neuroscientific research indicates that external and internal mentalization processes are associated with relatively distinct neural networks (Luyten and Fonagy, 2015, 370). The external mentalizing of self and others is associated with a lateral frontotemporoparietal network, including the posterior superior temporal sulcus (pSTS) and the temporal poles. As we have seen above, the internal mentalization of self and others is implicated in activations of the medial frontoparietal network, such as the medial PFC and ventromedial PFC (Luyten and Fonagy, 2015, 370).

Cognitive versus Affective Mentalization

Fourth and finally, Fonagy identifies a distinction between *cognitive* and *affective* mentalizing (Fonagy et al. 2012, 30-31). As we have seen, full mentalizing of intra- and interpersonal experience requires the integration of cognition and affect. However, these neural systems can be dissociated to some degree. As discussed above, cognitive mentalizing includes capacities like perspective-taking, “belief-desire reasoning,” and the theory of mind. It is associated with controlled, linguistically-dependent mentalizing. Affective mentalizing, on the other hand, is involved with capacities like empathy and “mentalized affectivity.” It is automatic and bodily-based (Luyten and Fonagy, 2015, 372). Fonagy argues that the separation of cognitive and affective mentalization is associated with psychopathology, including alexithymia (the inability to identify emotions), antisocial personality disorder (deficit in affective mentalization) and borderline personality disorder (deficits in cognitive mentalization) (Fonagy et al. 2012, 30-31).

Neuroscientific research suggests that both cognitive and affective mentalizing in tasks like theory of mind processing involve neural activations in the medial PFC, the posterior STS,

the TPJ, the temporal poles, and the precuneus (associated with episodic memory, visuospatial processing, and self-reflection) (Sebastian, 2012, 53). Affective theory of mind processing also recruited the VMPFC regions. As we have seen, the VMPFC modulates the amygdala and basal ganglia, which are involved in emotional processing. Fonagy speculates that the VMPFC may be crucial to “marking” self/other mental representations with affective information, which can then be integrated with the linguistically-based cognitive mentalization knowledge (Luyten and Fonagy, 2015, 372).

The Social Biofeedback Model

In the next several sections, I will present Fonagy’s account of how mentalization and a mature sense of self develop from and within the social interactions between caregiver and child. In the last fifteen years, Fonagy has incorporated into mentalization theory the social biofeedback model of parental affect-mirroring of his colleague, the Hungarian psychologist Gyorgy Gergely (Fonagy et al., 2002; Fonagy, Gergely, and Target, 2007). I will describe the social biofeedback model next, and then Fonagy’s model of the stages of development of mentalization in children.

Gergely’s social biofeedback model is noteworthy for presenting a “social constructionist” view of the development of self- and social cognition (Gergely and Watson, 1996; Gergely and Unoka, 2008). With philosophical and empirical roots in G. F. Hegel, G. H. Mead, and L. Vygotsky, social constructionists hold the counterintuitive view that human infants first discover the “intrapersonal” (that humans beings have *minds*; that they are *persons*) through the “interpersonal” (social relations with *other persons*). Put in simpler terms, human infants learn about minds in themselves and others from the “outside in,” rather than the “inside out” (Allen et al., 2008, 74). We come to understand, differentiate, and label our own inner

experience of thoughts, feelings, wishes, and desires by learning about them in interactions with our parents. The primary means of teaching infants about their own minds is, of course, mentalization: attuning with, mirroring, and elaborating upon the behavior of a child in terms of mental states, within a loving attachment bond. As Fonagy and colleagues succinctly state, “the psychological self develops through the perception of oneself in another person’s mind as thinking and feeling” (2002, 22).³⁴

Gergely’s social biofeedback model proposes four mechanisms by which this social learning about human minds may occur. First, Gergely contends that parents are “pre-wired” to display “ostensive cues” to their child, such as eye contact, turn-taking, and “motherese” (high-pitched, whimsical speaking style) (Gergely and Unoka, 2008, 68-71). In line with the natural pedagogy theory discussed above, these cues signal that the information being provided about the child’s internal states are important and worthy of “epistemic trust.”

Second, the parent engages in “marked mirroring” displays. These are accurate yet “schematically modified (e.g., exaggerating, slowing down)” facial and vocal reflections of the child’s emotions (Kim, 2015, 359). By marking their expressions, parents indicate they *attune with* and *understand* the child’s internal experience, while also signaling their display is a *mental representation* of the child’s feelings, rather than their own. Marked mirroring allows the parent to “down-regulate” the child’s emotional experience by resonating with, modulating, and then “presenting back” a marked version of the child’s emotions (Bion’s “containment” and “metabolizing” functions). It also provides essential information about the child’s internal states

³⁴ For social constructionist critiques of “primary intersubjectivity” researchers, who hold the “Cartesian” view that infants have an innately rich and differentiated inner world which they use to infer the minds of others, see Vygotsky, 1978; Hobson, 2002; Cavell, 2006; Csibra and Gergely, 2006; Fonagy et al., 2002, 2007. Intersubjectivist views were discussed in Ch. II; see Trevarthen, 1979; Stern, 1985; Tronick, 2007.

and the representational nature of the mind (Bateman and Fonagy, 2004, 66; Fonagy et al., 2010, 52-53).³⁵

Third, corresponding to the parent's innate pedagogical disposition is the child's "biological preparedness" to learn about human minds. Gergely contends that infants are born with a "contingency detection mechanism," which allows infants to detect the "probability of causal links" between their actions and resultant events (Fonagy et al., 2010, 52). Up to the third month of age, infants prefer "perfect response-contingent stimulation," such as that provided by proprioceptive feedback as infants move about in the world. After the third month, a "switch" occurs and normal infants prefer "high-but-imperfect" contingencies instead, such as the social feedback of their parent's marked affect mirroring displays. By observing and learning from their parents' mirroring responses, children begin to differentiate their "internal patterns of physiologic and visceral stimulation that accompany different emotions" (Fonagy et al., 2003, 424).

Fourth, parents' marked mirroring representations enable infants to assemble a "second-order symbolic representational system" of their internal mental experience. Infants internalize their parent's marked mirroring of their distress as "secondary representations" of their emotional states, with "the mother's empathic face as the signifier and his own emotional arousal as the signified" (Fonagy et al., 2003, 424). Over the second year, the child develops an awareness of the "functional role" of affect representations. The child can then pair the *experience* of an emotion with its *concept* (e.g., the experience of fear with the "idea" of fear). Second-order representations gradually form the foundation for mentalization, and enable affect

³⁵ Note the similarities with the intersubjectivity "microinteraction" research presented in Chapter II, in which the mother-infant bond is depicted as a mutually-influential, dyadic regulation system that modulates the infant's neurological and affect regulation development.

regulation and impulse control: “feelings become recognizable; they do not have to be acted out; and they can be shared” (Allen et al., 2008, 81). In sum, internalized parental affective representations shape and organize the “very core” of the child’s burgeoning sense of self.³⁶

Stages of Mentalization Development in Children

Next, in tandem with the affect mirroring mechanisms of the SBM, Fonagy and colleagues have delineated five stages in the development of mentalization in children over the first six years of life (Fonagy et al., 2002; Fonagy et al., 2010). These stages intersect with other emerging capacities of the developing child, such as “joint attention” and language. Researchers continue to debate the precise nature and progression of these stages, but most appear to agree on the following basic outline (see Kim, 2015).³⁷

First, as noted in the last section, in the first six months of life the infant comes to understand him/herself as a *physical* and *social agent*. Through “contingency detection,” the baby notices “causal relations” between physical actions, agents, and the world. For example, infants discover that they are the “author” of their own movements (e.g., move their arms) and can influence external objects (e.g., push a ball) (Allen et al., 2008, 77). In tandem with physical agency, infants also develop a sense of social agency. As discussed in Chapter II, babies notice that their “communicative displays” can direct and draw the attention of the caregiver, and that their moods influence the parent’s moods (Kim, 2015, 357). With these developments, infants gradually differentiate themselves from the environment and become more and more oriented to the social world.

³⁶ Note the similarities with Mikulincer and Shaver’s (2007a) concept of “self-representations” in IWMs, discussed in Chapter II.

³⁷ An interesting question is how Fonagy’s stages relate to Piaget’s classic research (1952) on the cognitive stages of infant development. To my knowledge, Fonagy does not address this issue.

Second, at around nine months of age infants develop a sense of themselves and others as *teleological* agents (Fonagy et al., 2010, 55). Infants realize that their own and others' actions can be rational, purposeful, and goal-directed. They can choose the most "efficient way" to achieve a goal from a range of alternatives, and expect others to do the same. They can also predict the most likely action of another person, based on the person's goals and the "physical constraints" of a given situation (e.g., moving in a straight line to an object) (Fonagy, 2005, 73). However, at this stage the agency of self and others is understood in terms of physical actions and goals, rather than in terms of mental states. As we will see, Fonagy contends that the physically destructive and self-harmful acts of borderline personality disorder patients may be reflective of a teleological stage of mentation.

Third, between the second and third years toddlers begin to understand human beings as *intentional* agents (Fonagy et al., 2010, 55-56). Children now realize that the actions of self and others can be caused by prior, underlying mental states like desires, wishes, and goals. This development represents the first emergence of a basic form of mentalization: the automatic, implicit, and non-linguistic type, discussed above (Kim, 2015, 357). Several advancements come with this "quantum leap" in understanding. As discussed above, toddlers begin to develop an "internal state language" about their feelings through interactions with parents, and this aids in their emotional regulation. Toddlers can also "reason non-egocentrically" about the mental states of others and engage in "joint goal-directed activities" and shared "pretend play." They can even tease their siblings (Fonagy et al., 2010, 55-56).

However, Fonagy contends that the two-year-old does not yet understand that mental states are "representations." They cannot yet distinguish between "internal and external" experience or between "appearance and reality." As a result, "internal reality is sometimes experienced as far more compelling and at other times seems inconsequential relative to the

child's awareness of the physical world" (Fonagy et al., 2010, 55-56). As we will discuss in the next section, Fonagy calls these two early modes of experience the "psychic equivalence" and "pretend modes," respectively. They figure prominently in his model of psychopathology.

Fourth, between ages three and four, children finally develop the understanding of themselves and others as *representational* agents. The child realizes that the human mind is a "re-presentation" of reality, comprised of "epistemic mental states" or beliefs (Fonagy, 2006, 73). As discussed above, theory of mind research indicates that by age four most children can pass "false belief" tests, which measure the awareness that others' beliefs about the world may not correspond to reality and may differ from one's own (Wimmer and Perner, 1983).³⁸ This marks the beginnings of *controlled mentalization*: explicit, interpretive, linguistically-based reflection on the mental states of self and others. This new understanding of the mind "transforms" children's social relations. Children can participate in conversations, empathize with the emotions of others, and engage in imaginative social play. They can also tell jokes and play tricks on others, and even lie and deceive (i.e., creating "false beliefs" in others). Finally, children of this age begin to prefer playing with their peers rather than with adults. This signals a growing "shift" from a reliance on parental "mediation" of mentalization to seeking deep interpersonal connections with others (Fonagy et al., 2010, 56).

Fifth and finally, by age six most children have developed an understanding of themselves and others as *autobiographical* selves. Drawing on neuroscience research, Fonagy states that six-year-olds are able to "organize memories of their intentional activities and experiences

³⁸ Kim (2015) describes a standard version of the false belief test, during which children are asked to predict the actions of a puppet, "Maxi": "Maxi places some chocolate in a green cupboard before he leaves. In his absence, Maxi's mother moves the chocolate from the green cupboard to a blue cupboard. The child is asked where Maxi will look for the chocolate upon his return. If the child responds correctly indicating that Maxi will look in the green cupboard where he mistakenly believes it to be, the child is thought to have the understanding that Maxi's mind can falsely represent the real state of the world" (Kim, 2015, 357-358).

into a coherent causal-temporal framework” (Fonagy et al., 2010, 57; see Damasio, 2010). This framework enables a sense of “self-coherence” across time, formulated in an autobiographical narrative. When this is paired with increasing capacities for language and rational thought, school-age children are able to engage in ever-more sophisticated levels of mentalization. For example, school-age children gain a greater grasp of the complex, reciprocal dynamics that occur in interpersonal relations when both members realize that selves and others are guided by beliefs and desires embedded in personal narratives. They can perform “second-order” theory of mind processing, such as “the capacity to understand mistaken beliefs about beliefs” (Fonagy et al., 2010, 57).

School age children can also comprehend “mixed” or conflictual emotions, and can understand that personal biases may influence interpretations of “ambiguous” situations. They engage in “subtle” forms of deception such as “white lies”, and can differentiate between “lies, jokes, irony, and sarcasm.” Finally, school-age children can understand “social emotions” like shame, pride, and embarrassment, and will “monitor and manipulate” the social impressions they make with others (Kim, 2015, 358). What all of these developmental achievements have in common is an increasingly sophisticated and differentiated sense of the self as a personal and social agent, embodied and embedded in complex sets of social and cultural relations (see Blatt, 2008; Gallagher and Zahavi, 2012).

Pre-Mentalistic Modes of Representation

The next aspect of Fonagy’s model of the development of mentalization I will present is his depiction of three “pre-mentalistic” modes of representation which “split” psychic reality (see Fonagy and Target, 1996, 2000; Target and Fonagy, 1996). These modes derive from the second

and third stages of mentalization development (the *teleological* and *intentional* stages) which directly precede the “fully-fledged” understanding of behavior in terms of mental states, achieved in stage four. Fonagy contends that pre-mentalistic modes can arise in present-day functioning when the more mature modes of mentalization become overwhelmed and “collapse” due to trauma, stress, or intense emotions. As we will see, Fonagy ties these pre-mentalistic modes to mentalization deficits found in disorganized attachment and a range of psychological disorders, such as borderline personality disorder and PTSD.

Fonagy describes three main types of pre-mentalizing modes. The first mode is “psychic equivalence.” As discussed above, psychic equivalence becomes operative during the *intentional* stage of development, between ages two and three. In the psychic equivalence mode, the child “equates” the inner and outer worlds. There is no understanding that the mind is perspectival (from an individual subjective perspective) and generates fallibilistic beliefs about reality (i.e., they can be wrong). Instead, internal fantasies and desires are presumed to be “isomorphic” with the external world.³⁹ Put in simpler terms, the child believes that “[w]hat exists in the mind must exist out there and what exists out there must also exist in the mind” (Fonagy, 2006, 79). Experiencing fantasies as real can undoubtedly be quite stressful. If a child believes a monster is under the bed, there *really is* a monster under the bed. This is a terrifying thought, indeed. Fonagy also speculates that psychic equivalence modes may be operating in dreams, borderline personality states, post-traumatic flashbacks, and paranoid delusions (Fonagy et al., 2010, 57-58).

The second pre-mentalistic mode is the “pretend mode.” The pretend mode also becomes operative during the *intentional* stage of development, between ages two and three. This mode is

³⁹ As will be discussed in Chapter IV, mindfulness researchers refer to this mode as “cognitive fusion.”

employed when young children engage in imaginative play. When playing, children know their imagination is not real; mental states are “decoupled” from external reality (Fonagy et al., 2003, 427). In fact, the pretend mode is important for “liberating” the mind from psychic equivalence. However, at this age pretend mental states are kept entirely separate from reality. They “correspond to nothing real, and are thought to have no implications for the outside world” (Fonagy et al., 2010, 58). Fonagy gives the following amusing account of his own son, which illustrates this mode:

The second author’s son, aged two and a half years, was playing that an upside down chair was a tank and that the legs were shooting ammunition. He was asked: ‘Is this a chair or a tank?’ He stopped playing immediately, put the chair the right way up, and walked away. He knew that the object was a chair and not a tank. Yet, in the pretend mode, bringing external reality into contact with the play undercut imagination (Allen, Fonagy, and Bateman, 2008, 91).

Fonagy maintains that when the pretend mode re-emerges in adults, it may be reflected in feelings of meaninglessness, emptiness, and dissociation. It is also seen in verbose, vacuous intellectualizing in psychotherapy (termed “pseudo-mentalizing” or “hypermentalizing”).⁴⁰

The third pre-mentalistic mode is the “teleological mode.” This mode becomes operative during the *teleological* stage of development, between nine months and two years of age. In the teleological mode, mental states like wishes, needs, desires, and emotions are understood and expressed in terms of physical actions, rather than through words (Fonagy et al., 2010, 55).

Fonagy contends that this mode is commonly seen in clients with a history of trauma or a borderline level of personality organization. When these individuals regress to this mode, “slight changes in the physical world can trigger elaborate conclusions about states of mind and only modifications in the realm of the physical can convince them as to the intentions of the other”

⁴⁰ Fonagy also discusses “excrementalizing,” defined as “slang for distorted mentalizing;...but doing a very poor job of it, for example, when trashing oneself in a depressive state” (Bateman and Fonagy, 2012, 513).

(Fonagy et al., 2010, 55). For example, a therapist's benevolent intentions may only be believed by the client through gifts or "physical holding." Or, a client who is unable to express his/her desperation and pain through words may do so through suicidal behavior or self-harm.

Finally, as we have seen Fonagy maintains that most children by age four can integrate the psychic equivalence, pretend mode, and teleological modes in controlled, representational mentalization. In the mentalizing mode, actions can be understood in terms of underlying mental states (integrating the teleological mode), and "mental states represent reality (unlike pretense) but are not equated with reality (unlike psychic equivalence)" (Allen et al., 2008, 91). Hence, in full mentalization, mental states can be experienced as perspectival (from an individual subjective perspective) and fallibilistic (they can be wrong) representations, and the inner and outer worlds can be seen as flexibly linked without need for equivalence or dissociation. The manner by which the pre-mentalistic modes are integrated is through safe, playful interactions and marked parental mirroring within what Winnicott (1971) referred to as the parent-infant "transitional space." Fonagy (2006) describes how this may occur:

The child's experience of his mental states being reflected on, prototypically through secure play with a parent or older child, facilitates integration of the pretend and psychic equivalence modes. This interpersonal process is perhaps an elaboration of the complex mirroring proposed earlier. In playfulness, the caregiver (when he is "only pretending") gives the child's ideas and feelings a link with reality by indicating an alternative perspective outside the child's mind. The parent or older child also shows that reality may be distorted by acting upon it in playful ways, and through this playfulness a pretend but real mental experience may be introduced (Fonagy, 2006, 80).

The Alien Self

The last key concept in Fonagy's account of the development of mentalization is the "alien self" (Fonagy et al., 2002; Bateman and Fonagy, 2004). As we have seen, Fonagy

maintains that accurate and marked parental mirroring of a child's affective states leads to their internalization as second-order representational system. This system forms the foundation for mentalization in the child and enables affect regulation and impulse control. However, if the parent's mirroring of the child's emotions is chronically inaccurate and unmarked, significant deficits in affective and self-regulation can occur. For example, Fonagy states that inaccurate parental mirroring that does not match the child's actual internal experience may result in the child developing a confused and poorly differentiated second-order representational system, possibly akin to Winnicott's concept of a "false self" (1965). Unmarked and overly-realistic parental mirroring of a child's intense emotions like terror, on the other hand, may "escalate" the child's fear if the parent's fear seems to confirm the child's terror or make the child's emotions seem "contagious" (Fonagy et al., 2010, 53).

Perhaps the most serious and pathological result of unmarked and inaccurate mirroring is the construction of "alien" self-states in the child. Drawing on the theories of Bion (1962), Winnicott (1971), and Kernberg (1975), Fonagy contends that chronically inaccurate/unmarked mirroring or experiences of trauma, violence, or neglect can lead to the child developing "disorganized" self-structures (Fonagy et al., 2003, 438). In these scenarios, the child is forced to internalize threatening and overwhelming affective displays from the parent that do not connect with the child's own experience. In effect, the child internalizes frightening representations of the *parent's* self-states, rather than marked and accurate parental representations of the *child's* self-states. Paraphrasing Winnicott's depiction (1971), "[t]he infant, trying to find herself in the mother's mind, may find the mother instead" (Bateman and Fonagy, 2004, 89). These "unmetabolized introjects" (Kernberg, 1975) are experienced as part of the self, but "alien" or not quite congruent with the self. If the alien self-states are internalized before the boundaries of

the self are fully developed, the result may be distortions in the child's second-order representations, an incoherent and dissociated ("split-off") quality in self-experience, and severe impairments in affect regulation and mentalization (Allen et al., 2008, 280-281).

Interestingly, Fonagy argues that we all have these alien, split-off parts of the self, to some extent. Studies show that even mothers with exceptional mirroring skills are insensitive to their child's mental states at least fifty percent of the time (Fonagy et al., 2003, 446).⁴¹ However, in normal populations the capacity to mentalize and construct rich, meaningful autobiographical narratives about our inner experience allows us to "paper over" the gaps and contradictions in our self-experience and create the "illusion of coherence" in a singular, integrated sense of self. It is only when full mentalization collapses, due to trauma or severe distress, that these incoherencies may come to the fore (Fonagy et al., 2003, 440).

In those individuals who had traumatizing, abusive, or neglectful parents, however, the consequences of alien self-states can be much more severe. The content of the alien self in these cases may contain threatening, punishing, persecuting, or torturing components. When experienced under psychic equivalence modes of representation, as found in disorganized attachment or BPD, the individual may feel a torturous and unbearable sense of "badness." In cases of extreme abuse, the very core of the child's self may feel rotten, evil, or monstrous (Allen et al., 2008, 279).

Fonagy contends that traumatized individuals may try to defensively manage and cope with their persecuting alien self-states in one of two ways. First, they may identify or align with the torturing intent of the alien self and turn against themselves from within. This represents "a

⁴¹ See the "rupture and repair" cycles of parent-infant "microinteractions," discussed in Chapter II.

kind of ‘colonization’ of the alien part of the self by the child’s or adolescent’s image of the mental state of the abuser” (Bateman and Fonagy, 2004, 97).⁴² Under this defensive operation, the individual tries to gain emotional relief from and an “illusory” sense of control over the colonized feelings of self-hatred and evil by conspiring to “attack and destroy” the rest of the self. If the person is functioning in the “teleological” mode, the result may be the kinds of physical attacks against the self observed in BPD, such as self-harm (e.g., cutting, burning) and suicidal behavior (Bateman and Fonagy, 2004, 97-101).

Alternatively, the traumatized individual may resort to a constant, intense “externalization” of the persecuting alien self-states onto the current attachment figure to gain some sense of relief and control (i.e., “projective identification”). In effect, “[t]he part of the self that is so painful is forced outside and another physical being is manipulated and cajoled until they behave in a way that leads the patient to experience that they no longer own the persecutory alien part of the self” (Bateman and Fonagy, 2004, 98). This defensive process “stabilizes” the individual’s mind by providing emotional relief from the persecuting introjects and restoring a semblance of coherence and wholeness to self-experience. However, the consequences of this externalization process for current relationships can be profound. The need for the attachment figure as an external “container” for the alien self-states can “become overwhelming, and an adhesive, addictive pseudo-attachment to this individual may develop” (Fonagy et al., 2012, 33). Moreover, the relationships may be characterized by “vicious cycles” of chaos, manipulation, and violence, associated with borderline personality disorder. The individual may manipulate the attachment figure through self-injury and suicidal behavior, while the attachment figure may be “goaded” into actual violent, persecutory acts. The individual may even attempt to “destroy” the

⁴² Fonagy distinguishes his view from Anna Freud’s concept of “identification with the aggressor” (1936). For details, see Bateman and Fonagy, 2004, 97-98.

shameful externalized introjects now housed in the partner through cathartic acts of violence (Bateman and Fonagy, 2004, 97-103).

Clinical Vignette

Fonagy (2006) provided the following brief, verbatim narrative from “a male prostitute who was sexually abused by his stepfather and brothers.” It poignantly depicts several aspects of the externalization of the alien self:

The more you experience, the more immune you become to anything. If you get lured into a gang of queers and then, you’re abused, you don’t fear queers no more. You just probably revenge against them. Because you can turn your mind into their activity and use it against them. I’m not getting into fights or anything like that, but I do happen to get into people’s heads and hurt them, do you know what I mean? (Fonagy, 2006, 88).

Complex Relations between Attachment History, Stress Levels, and Mentalization

Finally, in the last section of this chapter, I will present Fonagy’s illuminating analysis of the complex, contextual relations between attachment history, stress levels, and mentalization (e.g., Fonagy et al., 2010; Luyten et al., 2012). For his analysis, Fonagy has drawn upon Arnsten’s “dual-process” model (1998) and Mayes’s “biobehavioral switch” model (2006) to describe the relations between attachment and mentalization. To aid in comprehension, I have reproduced Fonagy’s helpful visual depiction of the biobehavioral switch model (Fonagy and Luyten, 2009, 1367), in Figure 5, below.

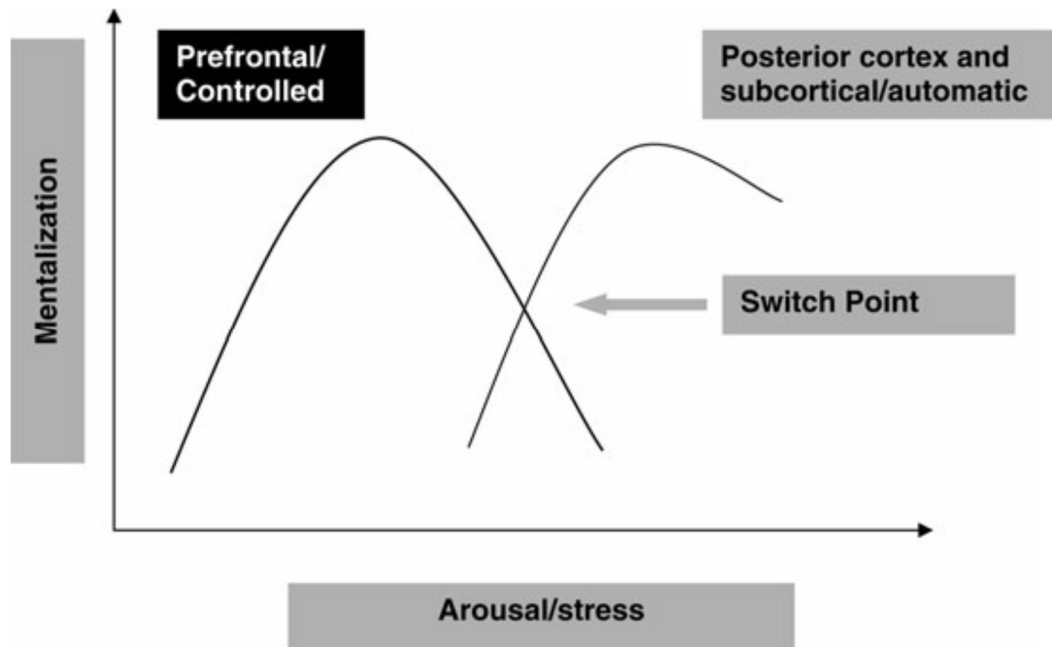


Figure 5. Fonagy's Biobehavioral Switch Model⁴³

Under the biobehavioral switch model, the activation and deactivation of the attachment system is closely related to emotional arousal and stress levels. When arousal levels increase beyond a certain “switch point,” the human brain switches from the *controlled* mentalizing associated with prefrontal cortex regions to the *automatic* mentalizing generated in the posterior cortex and subcortical regions like the amygdala. As described above, controlled mentalizing is associated with skillful self- and affect regulation capacities. Automatic mentalizing is related to the reemergence of suboptimal “prementalistic” modes of mentalization like “psychic equivalence” (equating internal and external reality) and the “pretend mode” (separating internal and external reality) (Luyten et al., 2012, 44-45). Furthermore, Fonagy hypothesizes that differences in switch point thresholds, the strength of the “switch” to automatic mentalizing, and

⁴³ Reproduced from Fonagy and Luyten (2009, 1367): “Figure 1. A biobehavioral switch model of the relationship between stress and controlled versus automatic mentalization (based on Luyten, Mayes, et al., 2009).” In Peter Fonagy and Patrick Luyten (2009), “A Developmental, Mentalization-Based Approach to the Understanding and Treatment of Borderline Personality Disorder,” *Development and Psychopathology*, 21(4): 1355-1381.

the “time to recovery” after stress to controlled mentalizing are all directly related to an individual’s attachment history and current attachment style (see Mikulincer and Shaver, 2007a).

Specifically, Fonagy contends that securely attached individuals have a “high” threshold for the switch from controlled/cortical to automatic/subcortical mentalizing (and thus can keep mentalizing “online” longer while under stress). They also have a “moderately” strong automatic mentalizing switch response; and a “fast” recovery time back to controlled mentalization.

Anxious attachment individuals, who *hyperactivate* the attachment system through strident proximity-seeking bids to force the caregiver to provide better attention and care, have a “low (hypersensitive)” threshold. They have a “strong” automatic mentalizing switch; and a “slow” recovery time to controlled mentalization. In turn, avoidant individuals, who *deactivate* the attachment system by suppressing attachment-related needs for love and support, have a “relatively high” (“hypo-responsive”) threshold which fails under increasing stress. They also have a “weak” automatic mentalizing response that increases under stress; and a “relatively fast” recovery time.

Finally, disorganized attachment individuals, who have incoherent attachment responses and/or oscillate between anxious and avoidant styles, have an “incoherent” threshold (“hyper-responsive, but often with frantic attempts to downregulate”). They also have a “strong” automatic mentalizing response; and a “slow” recovery time (Luyten et al., 2012, 47).

In Figure 6, below, I have reconstructed Fonagy’s chart (Fonagy et al., 2010, 70) which depicts the threshold for switch, strength for automatic response, and recovery of controlled mentalization times for each attachment style.

Attachment Category	Threshold for Switch	Strength of Automatic Response	Recovery of Controlled Mentalization
Secure	High	Moderate	Fast
Hyperactivating	Low: hyperresponsive to stress	Strong	Slow
Deactivating	Relatively high: hyporesponsive to stress, but with failure under increasing stress	Weak, but moderate to strong under increasing stress	Relatively fast
Disorganized	Incoherent: hyperresponsive to stress, but with frantic attempts to downregulate	Strong	Slow

Figure 6. Complex Relations Between Attachment, Stress, and Mentalization ⁴⁴

Conclusion

Psychoanalytic critics sometimes grumble that mentalization and mentalization-based therapy are nothing but “old wine in new bottles” (Allen, 2006, 24). Fonagy and colleagues readily agree that there is nothing radically new in the mentalization and mentalization-based therapy models. As we have seen, the ability to understand the behavior of self and others in terms of underlying mental states is one of the fundamental capacities that make us human. However, Fonagy argues that mentalization theory provides a rich, new empirical research framework to operationalize key psychoanalytic concepts—such as containment, maternal affective mirroring, the observing function of the ego, symbolization, psychological mindedness, and reality testing—and to demonstrate their “relevance” in investigating individual differences

⁴⁴ Reconstructed from Peter Fonagy et al. (2010, 70): “Table 2-4: Attachment strategies, arousal, and controlled versus automatic mentalization.” In Fonagy et al., “Attachment and Personality Pathology.” In John F. Clarkin, Peter Fonagy, and Glen O. Gabbard, eds., *Psychodynamic Psychotherapy for Personality Disorders: A Clinical Handbook*, 37-88 (Washington, DC: American Psychiatric Publishing).

in the mother-infant bond and in child development (Fonagy et al., 1991; Steele and Steele, 2008, 134).

Moreover, mentalization theory's partial origination in attachment theory helps us to locate mentalization theory within the vast conceptual and empirical literature of attachment theory, discussed in the last two chapters. As we have just seen, investigating the complex contextual interrelations between mentalization, attachment history, and current stress levels is one of the main focuses of mentalization theory and mentalization-based therapy research today (Luyten et al., 2012).

In the next chapter, I will present the third major theory of this dissertation, the mindfulness meditation research model. In Chapter V, I will then present a developmental neuroscience framework that can integrate attachment, mentalization, and mindfulness, and account for their developmental interrelations.

People threatened by fear go to many refuges:
To mountains, forests, parks, trees, and shrines.
None of these is a secure refuge; none is a supreme refuge.
Not by going to such a refuge is one released from all suffering.
But when someone, going for refuge to the Buddha, Dharma, and Sangha
Sees, with right insight, the Four Noble Truths:
 Suffering,
 The arising of suffering,
 The overcoming of suffering,
 And the Eightfold Path leading to the ending of suffering,
Then this is the secure refuge; this is the supreme refuge.
By going to such a refuge one is released from all suffering.

The Buddha, *The Dhammapada*, 188-192⁴⁵

CHAPTER IV:

MINDFULNESS MEDITATION THEORY AND RESEARCH⁴⁶

With the models of attachment theory and mentalization explicated in the last three chapters, in this fourth chapter I will turn to an examination of the theoretical, empirical, and neuroscientific research on mindfulness meditation. I will focus on both the traditional Buddhist philosophies that provide the historical and theoretical context for mindfulness meditation, as well as the Western clinical and scientific operationalizations of mindfulness that have proven influential in recent years.

⁴⁵ Gil Fronsdal, *The Dhammapada: A New Translation of the Buddhist Classic with Annotations*, foreword by Jack Kornfield (Boston: Shambhala Publications, 2006), 50-51.

⁴⁶ Parts of this chapter include expansions of a section written for Gay and Kreiselmaier, “Translational Neuroscience of Religion,” in Niki Kasumi Clements, ed., *Religion: Mental Religion* (New York: Macmillan, 2016).

In this chapter, I will first introduce the concept of mindfulness, discuss its recent rise in the American cultural and scientific scene, and then describe its sources in Buddhist religious and meditative practices. Then, I will define mindfulness as it is used in Western clinical and research contexts, and describe recent attempts to operationalize and measure the construct using psychological instruments. Next, I will discuss the three major forms of meditative practice that have been operationalized and used in clinical and psychological research (i.e., focused attention, open monitoring, and lovingkindness meditations). Then, I will present the three major mindfulness-based interventions used in clinical and health psychology today (e.g., MBSR, MBCT, and ACT), and describe research on its clinical effectiveness. Finally, I will present recent research on the neurocognitive mechanisms proposed to underlie mindfulness meditation.

Introduction to Mindfulness

As an entrance into the concepts of mindful metacognitive awareness and meditation, consider the following clinical vignette provided by psychologist Shauna Shapiro (Shapiro and Carlson, 2009, 33):

Alicia, a 28-year-old woman, was experiencing significant depression and anxiety resulting from a recent breakup with her fiancé. During therapy she continued to retell her story of the breakup and remained entrenched in a belief that she would never have children or a family. She believed things would always be this way. I invited her to examine the emotions beneath her static, unchanging story. Were they themselves static and unchanging? As she began to pay attention, anxiety became predominant in her experience. I asked her to stay with that feeling; what did she notice about it? She said her thoughts were racing: For example, where should she live, what should she do next, how could she live without him? I invited her to let go of these thoughts that were feeding the emotion of anxiety, and to simply be with the unadorned experience of anxiety itself. What was it like? Was it constant and unchanging? Or was it more wavelike, washing over her and then settling? As she directly experienced the anxiety, she felt how it changed within her. She noticed that it often arose when she was replaying one of her stories about the breakup. When she simply sat with the bare emotion itself, the anxiety often lasted only a few moments and then passed away. She noticed that underneath the anxiety was a deep sadness. She was able to feel into this sadness, the loss of her fiancé, the loss of a dream. She directly experienced the sadness in her body, felt

its shape and texture, watched it move and change, watched the intensity of it rise and pass away. She was surprised that her emotions were so ephemeral. At first she believed she was constantly sad and anxious. And yet she was seeing that this was not true, that her experience was changing moment by moment. She recognized that nothing stays the same, not the relationship she was clinging to, or the misery of the breakup she was trying to escape. She began to rest in the changing nature of things, experiencing the rising and passing away with greater equanimity and clarity....(Shapiro and Carlson, 2009, 33).

The experiences of Alicia illustrate many of the most important concepts and processes described in the mindfulness meditation and mindfulness-based interventions literature. For example, rather than attempting to change or reframe the *content* of her thoughts and beliefs (e.g., “It is not the end of the world if I breakup with my fiancé,” “I can find another man to have a family with”), Alicia was instead encouraged to notice and “lean into” the sensations and emotions within her body and conscious experience awareness. Discovering and examining the layers of emotions led her to the feelings of sadness underneath. Fully allowing herself to experience and engage with this deep emotion led to the discovery of the changing flux and flow of her experience, and thus to emotional relief and a greater sense of peace. Finally, Alicia’s attention also included a focus on body awareness, rather than merely on mental thoughts and emotions.

Mindfulness in the American Cultural, Academic, and Clinical Scenes

Like the growth of attachment and mentalization theory, research on mindfulness meditation has grown exponentially in the last three decades. Unprecedented levels of interest in mindfulness meditation have occurred in the U.S. culture at large, in the sciences, and in clinical settings (see Michaelson, 2013; Wilson, 2014). I will discuss each in turn. First, the increase in the visibility and influence of mindfulness in American society in recent years is nothing short of remarkable. In 2014, *Time Magazine* asserted that America was in the midst of a “Mindfulness

Revolution” (Pickert, 2014), while *The New Republic* declared 2014 as the “Year of Mindfulness” (Robb, 2014).⁴⁷ It is easy to see their reasoning. Although Pew Research Center data indicates that Buddhists only make up 0.7% of the U.S. population,⁴⁸ a *National Health Statistics Reports* survey reported that 8% of Americans in 2012, almost 25 million people, engaged in some form of meditation or contemplative practice (Clarke et al., 2015).⁴⁹

The increase of mindfulness meditation practice in the U.S. population is reflected in its penetration into American culture. Scores of TED Talks on Buddhism and mindfulness have been produced in the last several years,⁵⁰ as well as thousands of YouTube videos. Numerous bloggers on the *Huffington Post*, *Beliefnet*, and *Reuters FaithWorld* web sites are devoted to the topic. Dozens of university courses across America and in Europe explore mindfulness practices and Buddhist philosophy. Several academic journals and magazines devoted to mindfulness have recently sprung up.⁵¹ Mindfulness programs are also being set up in *Fortune 500* companies, inner-city schools, prisons, and even, controversially, the U.S. military (Purser and Loy, 2013). Finally, as evidence of the reach of mindfulness in our media age, hundreds of thousands of Americans watched CNN anchor Anderson Cooper’s mindfulness segment on CBS’s *60 Minutes* in 2014; watched Oprah Winfrey’s one-hour *Super Soul Sunday* interview of MBSR founder Jon Kabat-Zinn in 2015; and read Arianna Huffington’s 2014 book, *Thrive*.⁵²

⁴⁷ See <http://time.com/1556/the-mindful-revolution/>; <https://newrepublic.com/article/120669/2014-year-mindfulness-religion-rich>.

⁴⁸ Retrieved on 12-22-15, from <http://www.pewforum.org/2015/05/12/americas-changing-religious-landscape/>

⁴⁹ In this survey, “meditation” included “mantra” meditation (e.g., Transcendental Meditation and Herbert Benson’s relaxation response); “mindfulness” meditation (e.g., *Vipassana* and Zen Buddhist meditation, MBSR, and MBCT); “spiritual” meditation (e.g., Christian centering prayer and contemplative prayer); and meditation engaged in as part of other practices (e.g., yoga, tai chi, and qi gong).

⁵⁰ See https://www.ted.com/search?cat=talks&per_page=12&q=buddhism

⁵¹ E.g., *Mindfulness* <http://link.springer.com/journal/12671>; *The Journal of Clinical Mindfulness & Meditation* <http://clinical-mindfulness.org/publications/journal/>; *Mindful* <http://www.mindful.org/magazine>

⁵² See <http://www.cbsnews.com/news/the-newly-mindful-anderson-cooper/>; <http://www.oprah.com/own-super-soul-sunday/What-It-Means-to-Be-Mindful-Video>.

Second, interest in mindfulness meditation has spread to the academy and to the halls of science. Neuroscientists and psychologists are partnering with Buddhist religious leaders, religious studies scholars, and philosophers of mind to investigate the effects of meditation on the brain and mind (e.g., Ie, Ngnoumen, and Langer, 2014; Brown, Creswell, and Ryan, 2015a). Due to these efforts, empirical and neuroscientific research on mindfulness has grown exponentially in the last decade. References in Google Scholar to “mindfulness” have increased from a few hundred articles or books per year in the 1980s to almost 15,000 per year in 2014 (Brown et al., 2015b, 2). A recent search of the ProQuest online database with the subject heading of “mindfulness” also yielded over 6000 academic research articles, chapters, and books on mindfulness themes, and an additional 1600 dissertations and theses, to date.⁵³ Moreover, major university research centers and international institutes have been established in the last several decades, such as the University of Massachusetts Medical School’s Center for Mindfulness, the UCLA Mindful Awareness Research Center, the Oxford Mindfulness Centre, and the 14th Dalai Lama’s Mind and Life Institute.⁵⁴ The result of this burgeoning research literature has been a much broader interest in and acceptance of meditation in “respectable” scientific and academic circles, whereas before it might have been dismissed as “flaky,” New Age, mumbo-jumbo (Kabat-Zinn, 2011, 282).

Finally, mindfulness meditation has been incorporated into several mentalization-based interventions to treat clinical and health psychology populations. In 1979, the molecular biologist Jon Kabat-Zinn first brought mindfulness into the American medical laboratory and clinic by creating the Mindfulness-based Stress Reduction (MBSR) program at the UMass Medical

⁵³ Search conducted on 12-22-15, from <http://search.proquest.com.proxy.library.vanderbilt.edu/>

⁵⁴ See <http://www.umassmed.edu/cfm/>; <http://marc.ucla.edu/>; <http://www.oxfordmindfulness.org/>; <https://www.mindandlife.org/>

School. As popularized in Kabat-Zinn's *Full Catastrophe Living* (1990), MBSR is an eight-week, group format course which melds mindfulness meditation with Hatha yoga poses to treat medical patients suffering with chronic pain, stress, and illness. Kabat-Zinn deliberately downplayed MBSR's connections with Buddhist religion and philosophy, and constructed a secularized version of mindfulness that was concordant with the values and methods of Western medicine and scientific research (Kabat-Zinn, 2011).

The popularity of MBSR grew in the 1990s with Bill Moyers' 1993 PBS special, and an accumulating research base demonstrating its effectiveness (Didonna, 2009). By the 2000s, mindfulness had "crossed-over" into mainstream American medicine, as MBSR programs spread to medical centers and hospitals across the country. Finally, Kabat-Zinn's work also inspired the creation of other mindfulness-based interventions, including Mindfulness-Based Cognitive Therapy (Segal, Williams, and Teasdale, 2013), Acceptance and Commitment Therapy (Hayes, Strosahl, and Wilson, 2012), and Dialectical Behavior Therapy (Linehan, 1993). Research suggests that all four mindfulness-based interventions are effective in treating a range of affective, anxiety, personality, and health psychology disorders (Didonna, 2009; Chiesa and Serretti, 2010).

With this much cultural visibility and prominence, a perhaps inevitable backlash against mindfulness is also fully underway. The critiques have been wide-ranging. Some Buddhist scholar-monks and priests have charged that the mindfulness movement has stripped mindfulness meditation from its religious roots in Buddhist scriptures, communal rituals, and ethics (Sharf, 2015), and that the definitions and techniques of mindfulness in MBSR are distortions of those given in the early Pali scriptures (Bodhi, 2011). Another group has decried the "medicalization" and "psychologization" of the *Dharma* (Buddhist teachings) by the

mindfulness therapies. Happiness and health in this world seems far afield from the traditional Buddhist goals of the cessation of craving and liberation (Sanskrit: *nirvana*; Pali: *nibbana*) from the endless cycles of rebirth (Lopez, 2008, 2012). A third group of scholars have indicted the “McMindfulness” commercialization and marketing of mindfulness as a cure-all or panacea. They argue that mindfulness has become one more capitalist tool to generate wealth and produce more tranquil, efficient workers (Carrette and King, 2006; Zizek, 2012; Purser and Loy, 2013).⁵⁵ Finally, cultural and media critics lament the inundation of mindfulness in the media and the culture at large and describe it as the latest fad destined to fade. Some critics even state that they have tried meditation but find it boring or too hard!⁵⁶ I will return to these issues later in this chapter and in Chapters V, VI, and the Conclusion.

Mindfulness in its Context of Buddhist Philosophy and Meditation

In order to contextualize the use of mindfulness in Western research and clinical settings, it will be helpful to briefly summarize the role and place of mindfulness meditation in Buddhist practice. Mindfulness (Pali: *sati*)⁵⁷ originates from the philosophy and meditative practices of the 2500-year-old, South, Central, and East Asian religion of Buddhism (Gethin, 1998; Harvey, 2013). Buddhism derives from the life, teachings, and the monastic community founded by Siddhārtha Gautama, the Buddha (“the awakened one”). The Buddha was an Indian renunciate sage or “striver” (*samana*) who likely lived in the fifth century B.C.E. (Gethin, 1998, 14). The Buddha’s path or way (*magga*) can be considered a “system of training” in ethics, meditation, and wisdom that leads to the cessation of suffering (Gethin, 1998, 65). This is understood

⁵⁵ See http://www.huffingtonpost.com/ron-purser/beyond-mcmindfulness_b_3519289.html;
<http://www.theguardian.com/lifeandstyle/2015/oct/28/mindfulness-free-market-commodity-risk>.

⁵⁶ See http://www.nytimes.com/2015/10/10/opinion/can-we-end-the-meditation-madness.html?_r=1 ;
<http://www.theguardian.com/commentisfree/2015/jul/16/mindfulness-mental-health-breath>

⁵⁷ All technical terms will be rendered in Pali, unless specified as Sanskrit.

traditionally as liberation from the endless rounds of rebirth and re-death (Sanskrit: *samsara*) through the thirty-one realms of existence.

“Living Buddhism” today can be divided into three major traditions. The first is the southern tradition of *Theravada* (“Doctrine of the Elders”) Buddhism, which exists today in Sri Lanka and South East Asia. *Theravada* Buddhism can trace its beginnings to the early centuries B.C.E., adheres to an ancient Pali canon of scriptures, and is considered to be “*generally* closer in doctrine and practice” to ancient Indian Buddhism (Gethin, 1998, 1). The second is the eastern tradition of *Mahayana* (“Greater Vehicle”) Buddhism, found today in China, Korea, and Japan (e.g., Chan, Zen, and Shin or “Pure Land” Buddhism). *Mahayana* Buddhism emerged in the early centuries C.E., has its own set of more recent Sanskrit scriptures, and has been influenced by Chinese Confucianism and Daoism. Finally, the third tradition is the northern tradition of Tibetan Buddhism, which exists in Tibet, Mongolia, and Nepal. Tibetan Buddhism emerged in the later centuries of the first millennium C.E. It mixes *Mahayana* doctrines with Indian tantric practices and its own indigenous shamanic (*Bon*) religion (Gethin, 1998, 1-2).

The philosophies, psychologies, and meditative techniques vary widely between and within these three major Buddhist traditions. However, the Buddhist studies scholar Rupert Gethin, among others, has argued persuasively that a “common heritage” of early, fundamental Buddhist ideas, texts, and practices is shared by and lies at the foundation of all three living traditions. All Buddhist communities at different times and places built over this common foundation and “worked out its implications” with new theories and terminology (Gethin, 1998, 3, 43; Williams, 2012, xi). These foundational ideas include the Four Noble Truths and the Noble Eightfold Path. As we will see, the *Vipassana* or Insight meditation traditions, which influenced MBSR, directly derive from this common heritage. Briefly summarizing the Four

Noble Truths and the Noble Eightfold Path will provide context for the theoretical and scientific discussions that follow.

The Four Noble Truths and the Noble Eightfold Path

Buddhist traditionalists contend that the Buddha expounded the Four Noble Truths in a deer park outside present-day Benares, India, in his first sermon after his awakening experience (Williams, 2012, 30).⁵⁸ The Four Noble Truths are often likened to a “medical diagnosis” of the existential condition of human beings. The Buddha is the physician, and the noble truths describe the disease, its etiology, the prognosis, and its cure (Gethin, 1998, 63).

The first noble truth is “the reality of suffering” (*dukkha*). According to the Buddhist framework, human experience and the world is characterized by a constant sense of *dukkha*, translated as anguish, dis-ease, and “unsatisfactoriness.” We experience illness, injury, and mental and physical pain; everything in this world, even happiness, is subject to change and impermanence (*annica*) and eventually dies or passes away; and the world and even our very selves are enmeshed in a complex, dynamic web of interdependent causes and conditions (Gethin, 1998, 60-61). One of the most distinctive and challenging concepts of Buddhism is that what we identify as our self is actually a collection of more fundamental psycho-physical elements (*khandhas*): bodily sensations, feelings, perceptions, mental habits, and conscious awareness. When examined closely in meditation, adherents claim there is no essential “self” that inheres behind or within this collection. There is only a succession of changing and conditioned mental and physical events (*dhammas*) that arise and pass away. In this very specific

⁵⁸ In the Pali canon, this sermon is recorded as the *Dhammacakkappavattana Sutta* (“The Discourse Setting in Motion the Wheel of Dhamma.” The Pali terms for the Four Noble Truths can also be translated as the “four ennobling realities” or four truths of “the Noble Ones.” See Gethin, 1998, 60; Williams, 2012, 30.

sense, Buddhism denies the existence of an eternal, unconditioned, or inherently-existing self or soul (*anattā*) (Gethin, 1998, 145-147).⁵⁹

The second truth is “the cause of suffering is craving” (*tanha*). Craving in the Buddhist context is not a simple liking or desiring, but a deep-rooted, unquenchable thirst or greed (Gethin, 1998, 70). According to Buddhism, we attempt to find happiness by craving that which is pleasurable, clinging or attaching (*upadana*) to what seems permanent, and identifying with or trying to make things our own. The objects of craving can take many forms, including pleasurable sense objects, power, religious worldviews, and the idea of an essential soul. Moreover, we are averse to or hate (*dosa*) losing our attachments. Unfulfilled craving or loss can generate anger and depression. But in the Buddhist view, craving pleasure and hating loss demonstrates a fundamental ignorance or delusion (*moha*) about the way things “really are.” Since the world and the self are conditioned and impermanent (the first noble truth), we can never be truly satisfied with the objects we crave, and feel anger and loss when they cease or pass away. Suffering inevitably ensues. These three mental “defilements” (*kilesa*) of greed, hatred, and delusion combine to form the suffering that humans experience (Gethin, 1998, 68-74).

The third truth is “there is a cessation of suffering,” achieved in *nirvana*. *Nirvana* literally means “to blow out” or “extinguish.” In the Buddhist context, this refers to extinguishing the “fires” of greed, hatred, and delusion (Gethin, 1998, 75). In basic terms, the Buddhist solution to suffering is to “let go”: let go of craving for pleasure and permanence, let go of attaching to

⁵⁹ Most schools of Buddhism only deny the “ultimate” sense of self as an eternal, inherently-existing soul. They do not deny the “conventional” sense of self we use as a label for the phenomena we experience while acting and suffering in the world of *samsara*. Nor do they deny the “I” we use as a term of reference in language and discourse. For philosophical analyses of the conditioned nature of reality and the doctrine of no-self, see Collins, 1982; Gethin, 1998; and Garfield, 2015.

worldviews (even, ultimately, Buddhism itself), and let go of identifying with your experiences and labeling it a substantial “self.” Exactly what *nirvana* means experientially or ontologically (e.g., “the unconditioned realm,” “the deathless”) is “undetermined” in the Buddhist tradition. The Buddha was reportedly circumspect on the topic and later Buddhist schools have given differing interpretations through the ages.⁶⁰ What most interpretations appear to agree on is that attaining the cessation of greed, aversion, and delusion and cultivating their opposites (non-attachment, lovingkindness, and wisdom) *just is* to attain the highest state of happiness and freedom, *nirvana* (Gethin, 1998, 74-79).⁶¹

Finally, the fourth truth is “there is a path leading to the cessation of suffering,” the Noble Eightfold Path. The eightfold path is the practical means for “rooting out” greed, hatred, and delusion and replacing them with the wholesome qualities of non-attachment (*alobha*), lovingkindness (*metta*), and wisdom (*panna*) (Gethin, 1998, 80). The eight items are traditionally grouped in three categories: wisdom includes the items of right view and right intention; ethical conduct (*sila*) consists of right speech, right action, and right livelihood; and meditative concentration (*samādhi*) is comprised of right effort, right mindfulness (*sati*), and right concentration. In this scheme, wisdom refers to directly experiencing or “seeing” (*vipassana*) the four noble truths; ethical conduct refers to curtailing unwholesome actions (e.g., lying, stealing) and cultivating wholesome ones (e.g., generosity); and concentration refers to the practices of meditation (Gethin, 1998, 80-84). In general, the Buddhist path usually progresses from practicing rituals and devotions (e.g., chanting, pilgrimages, and generous giving or *dana*), to

⁶⁰ Gethin (1998, 77) contends there are three “dimensions” of *nirvana* in the early Pali texts: the “event” of awakening, during which greed, aversion, and delusion cease; the experiential “domain” known during awakening, which is described metaphorically as “the unconditioned” or “the deathless”; and the “final condition” after death of those like the Buddha whom are believed to be liberated from *samsara*.

⁶¹ Contemporary “modern” and secular Buddhists tend to interpret *nirvana* as either the reduction (rather than the complete cessation) of attachment and self-centeredness *in this world*, or as a “non-dual” experience in which the subject-object split is dissolved. See Batchelor (1997) and Harris (2014).

cultivating moral virtue and adhering to ethical precepts, to stilling the mind and achieving wisdom in meditation (Gethin, 1998, 164-165). However, the eightfold path is conceived as “spokes on a wheel” that develop and function interdependently. As Gethin articulates,

The psychological understanding that underlies this is not hard to see. In order to see the four truths, the mind must be clear and still; in order to be still, the mind must be content; in order to be content, the mind must be free from remorse and guilt; in order to be free from guilt, one needs a clear conscience; the bases of a clear conscience are generosity and good conduct (Gethin, 1998, 83).

Tranquility, Insight, and *Brahma-viharas* Meditations in the Buddhist Path

So what is the role of meditation in this Buddhist framework? The common tradition describes three major kinds of meditative practice: tranquility (*samatha*), insight (*vipassana*), and *brahma-viharas* (“divine abodes”) meditations (Shaw, 2009). Historically, tranquility and insight meditation have been of greater importance. Tranquility meditation is designed to bring stillness, equanimity, and clarity to the mind. This is purported to dampen or suppress cognitive and emotional disturbances related to greed, hatred, and delusion. It is achieved by developing a “single-pointed” state of concentration (*samādhi*) on one object of meditation, such as the breath, the Buddha’s life or *Dharma* teachings, or even death. As the mind wanders, the meditator brings his/her attention back again and again, until the mind can rest stably and easefully on the object. The *Theravada* tradition describes eight stages of meditative absorption (*jhanas*) in the object, which are reported to correspond to increasingly non-sensory, emotionless, and “formless” states of abstract absorption (Gethin, 1998, 174-186; Gunaratana, 2009).

Insight meditation, by contrast, is designed to enable the meditator to directly “see” and experience the conditioned and non-substantial nature of reality. The Buddhist tradition has summarized these inessential qualities as the “three marks” of existence: all phenomena are

impermanent (*anicca*), unsatisfactory (*dukkha*), and non-substantial or “not self” (*anatta*) (Gethin, 1998, 187). One classic method of insight meditation is to observe the real-time “arising and passing away” of phenomenal events (*dhammas*) experienced in the body; the feelings; the mind; and finally, in all three at once (Anālayo, 2003). The *Theravada* tradition describes seven “purifications” and eight “knowledges” of the mind acquired during advanced stages of insight meditation, which are reputed to correspond to increasing depths of experiential insight and knowledge of reality as impermanent, unsatisfactory, and not-self (Gethin, 1998, 188-194).

Although there is some dispute regarding their roles and order of practice, the Buddhist common tradition depicts tranquility and insight meditation as working together along the path to *nirvana* (Gethin, 1998, 175). The *Theravada* tradition has maintained that a foundational level of stillness, clarity, and stability (i.e., the fourth *jhana*) should first be achieved in tranquility meditation before then turning the mind to see deeply into the conditioned nature of the self and reality in insight meditation. With the last stage of insight obtained, *nirvana* is reported to be achieved when the meditator directly sees, in a “single flash of transcendent insight and peace,” the three marks of existence and the four noble truths (Gethin, 1998, 188). The meditator is now said to be an *arahant* (“noble one”). His/her ways of being, thinking, and acting have been transformed and the fires of greed, hatred, and delusion have been permanently “rooted out” or eradicated.⁶²

Finally, a third style of meditation is also described in the Buddhist literature: the four *brahma-viharas* (Sanskrit: “divine abodes” or “immeasurables”; Salzberg, 1995; Wallace, 2010). The four *brahma-viharas* are lovingkindness, compassion, sympathetic joy, and equanimity. The

⁶² *Mahayana* traditions, like Zen, and Tibetan Buddhism more often frame awakening as insight into the “emptiness” (Sanskrit: *śūnyatā*) of all phenomena, including the *Dharma* and *nirvana*. See Garfield, 2015.

term refers to profound emotional states generated in meditation which are said to correspond to the experiences of *Brahma* gods in their celestial realms (Gethin, 1998, 187).⁶³ The cultivation of these meditative states are purported to be “antidotes” to negative emotions like anger, greed, jealousy, or lust. Practitioners meditate upon these states in relation to themselves, and then “radiate” the states outward towards the four directions of the earth. Some scholars have argued that the *brahma-viharas* were a separate path to awakening in the early tradition (e.g., Gombrich, 2005).

In the Pali texts, lovingkindness (*metta*) refers to the wish for all sentient beings (including oneself) to be happy, well, and at peace. The tradition likens lovingkindness to the feelings of love a mother holds for her child. Compassion (*karuna*) is the wish for all sentient beings to be free of suffering and to find liberation from *samsara*. Compassion can be compared with a mother’s feelings toward her child who is sick or in pain. Sympathetic joy (*mudita*) refers to “the delight in the good fortune of others and the wish for it to continue” (Gethin, 1998, 187). It is equated with the feelings of a mother who is happy at her adult child’s successes. Finally, equanimity (*uppekha*) is the ability to stay balanced in the face of sorrow as well as pleasure. Equanimity is likened to the feelings of mother to an adult child that is busy with his own independent life; it is thus a state of poise and calmness rather than indifference (Gethin, 1998, 187; Shaw, 2009, 81-82).

As the reader will likely notice, the lovingkindness meditations, especially, are steeped in attachment-related images and processes. I will describe the techniques of these three types of

⁶³ Pali texts suggest that those who cultivate the *brahma-viharas* will be reborn in corresponding *Brahma* heavenly realms. See Gethin, 1998; Shaw, 2009.

meditation, and their operationalization in Western clinical and scientific settings, in more detail later in this chapter.

Scholarly Disputes Regarding the Definition and Techniques of Mindfulness

So what is the definition and role of “mindfulness” in meditation and in the Buddhist path? Unfortunately, there is no simple or definitive answer to this question (Dunne, 2015). As we have seen, mindfulness was accorded a prominent place in Buddhist philosophy as the seventh item of the Noble Eightfold Path. Historically, the Pali term, *sati* (Sanskrit: *smṛti*), was first translated as “mindfulness” in English by T. W. Rhys Davids in 1881. It has become standard since (Gethin, 2011, 264). In Indian philosophy, *sati/smṛti* originally meant “to remember,” but the Buddha or his early followers changed the meaning to something like “reflexive observation,” or “lucid awareness” (Bodhi, 2011, 22-26). Gethin (2015, 32) summarizes that *sati* in the Pali texts is “a kind of lucid sustaining of attention on the object of awareness, in which the mind is both aware of the object and, in some sense, aware that it is aware....” Mindfulness can thus be applied to a variety of objects of varying complexity, such as the breath or the Buddha’s teachings in tranquility meditation or the flux of experience in insight meditation.

So far, so good. However, in recent years there has been a vast amount of debate amongst Buddhist and religious studies scholars about the definitions and use of mindfulness in modern clinical and empirical settings.⁶⁴ Much of this debate has centered on Jon Kabat-Zinn’s MBSR. As mentioned above, Kabat-Zinn deliberately downplayed MBSR’s connections with Buddhist religion in order to make it more palatable for Western medical and scientific settings. He

⁶⁴ See the special issues of *Contemporary Buddhism* in 2011 and of *Mindfulness* in 2015: <http://link.springer.com/journal/12671/6/1/page/1>; <http://www.tandfonline.com/toc/rcbh20/12/1#.VoneHE8-ZH8>

provided this classic definition of mindfulness, which has shaped most subsequent efforts in the field: “paying attention in a particular way: on purpose, in the present moment, and non-judgmentally (Kabat-Zinn, 1994, 4). Central to Kabat-Zinn’s instructions for meditation in MBSR is developing the quality of “bare attention,” which is defined as a minimal, non-conceptual, and non-reactive attending to the sensations in the body and the flow of the mind without internal comment or judgment (Kabat-Zinn, 2006, 442).

In his 2011 target article and response-to-commentaries article in *Contemporary Buddhism*, Kabat-Zinn traced the roots of his definition of mindfulness to three sources: the modern Burmese *Vipassana* movement (discussed below); his own training and qualifications as a teacher in Zen Buddhism; and his study of yoga and the non-dual Hindu philosophy of *Advaita Vedanta* (2011, 289). Kabat-Zinn stated he was struck by the convergences between these schools of thought, and he believed they articulated a “universal dharma” of the mind that could transcend sectarian disputes in Buddhism and be applicable to all peoples in secular settings. Furthermore, his use of the term “mindfulness” and its definition was never intended to be comprehensive, but was instead an “umbrella term” that stood in as a “place-holder for the entire dharma” (Kabat-Zinn, 2011, 290). His goal was always to help relieve the suffering of cancer and pain patients. The subtleties of textual and theoretical analysis could be left to future scholars.

It is Kabat-Zinn’s original definition of mindfulness and its historical roots that are the target of the flood of scholarly critiques of MBSR. As we have seen, mindfulness is only one item of the eightfold path, and “concentration” in general is depicted in the Pali texts as always working together with “wisdom” and “ethical conduct” to enable the practitioner to reach *nirvana*. One group of scholars (e.g., Sharf, 2015) have criticized Kabat-Zinn for focusing solely

on mindfulness to the exclusion of the rest of the path, and for therefore stripping meditation from its roots in the *Lebenswelt* (“lifeworld”) of Buddhist scriptures, rituals, and ethics.

Another group of Pali textual scholars (e.g., Bodhi, 2011; Dreyfus, 2011) have critiqued Kabat-Zinn’s specific construal of mindfulness as “nonjudgmental” and “bare attending.” In early Pali texts,⁶⁵ the “lucid awareness” of mindfulness is paired with another mental quality called “clear comprehension” (*sampajanna*). This refers to the cognitive understanding and interpretation of meditative phenomena in relation to the *Dharma* teachings of Buddhism, such as impermanence, not-self, and the distinction between wholesome versus unwholesome qualities. A nonjudgmental, non-conceptual attitude of “bare attention” does not align with this more cognitively-oriented depiction.

Finally, a third group of scholars (e.g., McMahan, 2008; Wilson, 2014; Braun, 2013, 2014) contend that MBSR’s roots in the Burmese *Vipassana* movement, Zen Buddhism, *Advaita Vedanta*, and yoga demonstrate that MBSR is a form of “Buddhist Modernism.” In one way or another, all four have been shaped by internal reform movements that evolved in the wake of European colonialism and were accommodations to Western intellectual currents of modernity. Forms of Buddhist or Hindu Modernism are popular in America in contemporary times *precisely because* they have stripped meditation from its “Oriental” sociocultural roots and have “privileged” individual practice and a non-conceptual style of universal religious experience (see Harrington and Dunne, 2015).

Fascinatingly, Emory Buddhist Studies scholar John Dunne (2011, 2015) has countered the above three critiques by arguing that what is significant in MBSR’s definition of mindfulness

⁶⁵ E.g., the *Satipatthana Sutta*, translated variously as the “Discourse on the Establishments of Mindfulness” or the “Discourse on the Applications of Mindfulness”; see Anālayo (2003) and Gethin (2015), respectively.

as non-conceptual, present-centered, and non-judgmental is not necessarily that it diverges from the early Pali texts or reflects a Buddhist Modernism, but that it accords so closely with *Mahayana* doctrines and practices of “non-dualism” (Sanskrit: *advaya*). Traditions within Zen and Tibetan Buddhism *specifically do* recommend that practitioners perceive meditative experience non-conceptually and non-judgmentally, in the effort to dissolve the split between subject and object and thus reach *nirvana* (Dunne, 2015, 259). Moreover, these traditions preceded the modern era by centuries. Dunne’s point is that there is no monolithic conception of “pure” Buddhism or “true” definition of mindfulness by which to judge MBSR. Rather, there are a great diversity of Buddhist traditions and practices. MBSR and the contemporary *Vipassana* movement are simply the latest iteration in our era. Besides, as Gethin argues (2011, 276), it is an open question whether such subtle textual and technical distinctions make a difference in actual meditative practice, especially for MBSR beginners.

With this heeding in mind, I will adhere to Gethin’s definition of mindfulness described above: “a kind of lucid sustaining of attention on the object of awareness, in which the mind is both aware of the object and, in some sense, aware that it is aware” (2015, 32). In my view, this definition is compatible with Kabat-Zinn’s definition and with much of the clinical and empirical research that it influenced. But as these debates have shown, it needs to be recognized that mindfulness can be applied to a variety of meditative objects in tranquility and insight meditation, and encompasses a range of levels of conceptual comprehension and ethical discrimination.

Moreover, in light of this dissertation’s emphasis on the attachment-related and developmental roots of mindful awareness, it is important to note that Dunne states that the non-dual meditative practices of Zen and Tibetan Buddhism were usually preceded by years of

intense preparatory training in Buddhist communal rituals, devotions, scriptural readings, and ethical cultivation (2011, 85). As I will discuss in more detail in Chapter VI and the Conclusion, it is my hypothesis that the communal factors of Buddhist practice found in *Sangha* relationships and rituals may be important for progress on the Buddhist path, even for secular practitioners who reject traditional Buddhist metaphysics.

Mindfulness in Western Clinical and Scientific Research Contexts

Having examined the roots of mindfulness in Buddhist religion, philosophy, and meditation, I now turn for the rest of this chapter to exploring the use of mindfulness in Western clinical and scientific settings. As noted above, empirical, neuroscientific, and clinical outcome research on mindfulness meditation has grown exponentially in recent decades. Psychologists, neuroscientists, and clinical researchers are now partnering with religious studies scholars, philosophers of mind, and Buddhist leaders to investigate the effects of meditation on the mind and brain.

During the last thirty years, the medical and mental health benefits of Buddhist meditative practice have been increasingly recognized (Didonna, 2009; Baer, 2014; Brown et al., 2015a). Based largely on Kabat-Zinn's definitions, mindfulness meditation has been operationalized for use in clinical settings and in scientific research. These operationalizations attempt to translate mindfulness meditation concepts and techniques into existing Western psychological models of human functioning. In this context, meditation can be defined as "mental training" to improve foundational psychological capacities, such as attention, the regulation of emotion, and bodily awareness, as well as to promote wellbeing and stress reduction. Accumulating research suggests that improvements in these core capacities are

associated with reductions in the symptoms of a variety of psychological and health disorders, as well as the enhancement of general mental and physical wellbeing (Didonna, 2009; Baer, 2014).

In the psychological literature, mindfulness usually refers to four major ideas (Davidson, 2010; Vago and Silbersweig, 2012). These include: a) the *state* of paying attention to the present moment with an attitude of openness and non-judgmental acceptance (see Kabat-Zinn, 2005); b) a dispositional *trait* assessed with at least eleven psychological measurements; c) the three major styles of *meditative practices* discussed above; and d) *clinical interventions* like Mindfulness-Based Stress Reduction (Kabat-Zinn, 2005) and Mindfulness-Based Cognitive Therapy (Segal, Williams, and Teasdale, 2013).

For the next three sections, I will describe the state and trait measurements of mindfulness, the three meditative practices, and then the mindfulness-based interventions of MBSR and MBCT.

Mindfulness as a State and Trait

First, mindfulness in empirical research contexts can refer to psychological states and traits of human functioning (Chiesa, 2013). Since the 1990s, researchers have designed numerous psychological instruments to measure mindfulness states and traits. These instruments can be used to gather “stand alone” data on mindfulness capacities in subjects, or used as outcome variables to measure the effectiveness of mindfulness-based interventions for clinical and non-clinical populations. The majority of the tests assess components of Kabat-Zinn’s operational definition of mindfulness in MBSR. As we have just seen, there are problematic theoretical and methodological features of Kabat-Zinn’s definition that stem in part from the diversity of views on mindfulness and meditation in the texts and traditions of Buddhism.

However, his definition of mindfulness as non-conceptual, present-centered, and non-judgmental does appear to capture several crucial features of the construct (see Baer, 2011; Chiesa, 2013).

Mindfulness as a State

First, mindfulness can refer to a momentary or transient *state* or *mode* of mental functioning that consists of attending to experience in a particular way. There appears to be only one state measure of mindfulness: the Toronto Mindfulness Scale (TMS; Lau et al., 2006).⁶⁶ Bishop and colleagues (Bishop et al., 2004) began by devising an influential operationalization of mindfulness, which focused explicitly on Kabat-Zinn's definition. The model consists of two components. The first component is the "self-regulation of attention so that it is maintained on immediate experience." It consists of an array of "metacognitive skills," such as sustaining attention on the present moment, attention switching when lost in thought, and the inhibition of "elaborative mental processing" (Bishop et al., 232). The second component is an "orientation that is characterized by curiosity, openness, and acceptance"; this follows Kabat-Zinn's emphasis on non-judgmental attention. Finally, Bishop defined the goal of mindfulness as insight into "how automatic, habitual patterns of overidentification and cognitive reactivity to sensations, thoughts, and emotions increase...emotional distress" (Lau et al., 2006, 1447).

Bishop and colleagues then created the TMS to test the two components of their operationalization and determine its predictive validity (Lau et al., 2006). The TMS is a 13-item self-report measure that is given to subjects immediately after participating in meditation. Subjects rate their agreement with statements such as "I approached each experience by trying to accept it, no matter whether it was pleasant or unpleasant" (Lau et al., 2006, 1467). Factor

⁶⁶The MAAS also includes a "state" version, but the full test measures mindfulness as a trait.

analysis of the test items suggested that Bishop's second component of "curiosity, openness, and acceptance" "loaded" on two subscales: *Curiosity* and *Decentering*. However, the first component failed to load onto any factors. Bishop found that TMS scores improved after MBSR training, and increases in the Decentering subscale scores predicted improvements in stress and mood disturbances (Lau et al., 2006, 1461).

Mindfulness as a Trait

Second, mindfulness can refer to a dispositional *trait* that is comprised of a pattern of cognitive, affective, and behavioral tendencies that endure through time. Trait mindfulness can be assessed before, after, or in the absence of mindfulness training. Trait mindfulness assessment has occupied most of the research efforts in the field. To date, there are at least seven self-report instruments that measure this trait. The more prominent scales include the Mindful Attention Awareness Scale (MAAS; Brown and Ryan, 2003); the Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, and Allen, 2004); and the Five Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, and Toney, 2006).⁶⁷ The FFMQ has the advantage of being constructed from test questions drawn from five other mindfulness scales, including the MAAS and KIMS. It can thus be considered as representative of efforts in the field.

To construct the FFMQ, Baer and colleagues (2006) conducted exploratory factor analyses of the total pool of test items of the five tests. The analyses yielded a 39-item self-report measure, which loaded on five major factors. These factors are: *observing*, which is the capacity to attend to internal and external experience; *describing*, or noting and labeling internal thoughts and feelings; *acting with awareness*, or staying present-focused rather than becoming lost in the

⁶⁷ One other scale, the Non-Attachment Scale (NAS; Sahdra et al., 2010), has been used in attachment research. I will introduce this scale in Chapter V.

past or future; *nonjudging of inner experience*, or taking a non-evaluative/non-judgmental stance; and *nonreactivity to inner experience*, or allowing thoughts and feelings to come and go without getting caught up in them (Baer et al., 2006, 34-35). Moreover, statistical analysis indicated that four of the factors (excluding *acting with awareness*) were significantly correlated with meditation experience. These four also mediated the relationship between meditation experience and psychological wellbeing (Baer et al., 2008, 339). Finally, increases in *acting with awareness*, *nonjudging*, and *nonreactivity* predicted improvements in psychological symptoms, such as depression, anxiety, and psychoticism (Baer et al., 2006, 41).

Criticisms of Mindfulness Scales

While the self-report state and trait instruments have yielded impressive findings, it is important to note that mindfulness assessment research has been the subject of several critiques in recent years. The most cogent of the critiques are those of Paul Grossman (Grossman, 2008; Grossman and Van Dam, 2011). Amongst his complaints are that: the operational definitions of mindfulness significantly diverge across the different scales; test constructors do not appear to have in-depth knowledge or practice in Buddhist meditation and rely on popular definitions of mindfulness; there may be self-biased discrepancies between how mindful test subjects “really are” versus how mindful subjects report they are; and that the scales rely on “reverse-scored items,” which may falsely conclude that low ratings of one trait (e.g., mind-wandering) implies the presence of its opposite (e.g., mindfulness) (Grossman and Van Dam, 2011, 226-233).

The mindfulness researcher Ruth Baer (2011, 241-243) has responded to the critiques. While acknowledging the methodological difficulties in assessing mindfulness, she argues that self-report measures are necessary if mindfulness research and clinical interventions are to

develop into reputable fields of clinical science. In order to elucidate the neuropsychological mechanisms of mindfulness and evaluate the effectiveness of mindfulness-based interventions, sound psychological instruments that accurately measure valid operational definitions of mindfulness are inevitably necessary. The challenge now is to improve these instruments (see also Dimidjian and Segal, 2015).

Mindfulness as Meditative Practices

Second, mindfulness can refer to a set of *meditative practices*. As we have seen, the traditional Buddhist scriptures describe three main types of meditation practice: tranquility, insight, and *brahma-viharas* meditations. Each of these corresponds to a contemporary form of meditation that has been operationalized for use in Western research and clinical settings: focused attention, open-monitoring, and lovingkindness (or, alternatively, compassion) meditation. I will describe each type below, focusing on their differing techniques and how they have been “translated” into psychological models of mental functioning.⁶⁸

The first meditation style is Focused Attention, which corresponds to tranquility (*samatha*) meditation (Lutz et al., 2007; Lutz et al., 2008). Like *samatha*, Focused Attention is characterized by the development of “one-pointed concentration” on a single meditative object like the breath. When the mind wanders, attention is brought back to the breath, again and again. Using cognitive psychology models, Focused Attention has been operationalized into four attention regulation components. First, meditators “sustain selective attention” on a chosen object to the exclusion of other stimuli, and then “monitor” the quality of the attention and any engagement with distractors. This “monitoring” capacity is viewed as a subset of “metacognitive

⁶⁸ For overviews of the types of meditation used in scientific research, see Lutz, Dunne, and Davidson, 2007; Lutz, Slagter, Dunne, and Davidson, 2008; Shaw, 2009; and Lutz, Jha, Dunne, and Saron, 2015.

awareness.” Next, when mind-wandering is detected, attention is “switched” or disengaged from the distractor, and then “redirected” back to the chosen object. Recent research has delineated the neural systems underlying each of these attentional components, which will be presented later in this chapter (Hasenkamp et al., 2012, 751). Finally, as with tranquility meditation, the purpose of Focused Attention is to develop mental stillness and equanimity. These qualities have been operationalized as decreases in cognitive elaboration and emotional reactivity and an increase in response inhibition (Vago and Silbersweig, 2012, 13).

The second type of meditation is Open Monitoring meditation, which corresponds to Insight (*Vipassana*) meditation. Like *Vipassana*, Open Monitoring is involved in observing the flux and flow of the phenomenal events of the body, senses, and mind, without focusing on any one meditative object. Novice Open Monitoring meditators mentally “note” each phenomena (e.g., “breathing,” “thinking”), while experts can rest in a state of “effortless awareness” on the stream of consciousness without mental notation (Lutz et al., 2008, 164). Open Monitoring has been operationalized as an expansion of the “metacognitive monitoring” system that monitors the quality of attention in Focused Attention. The Focused Attention meditator transitions to Open Monitoring by phasing out the selective attention to one primary object. Metacognitive monitoring is then “distributed” to all bodily and mental events, termed “metacognitive awareness.” A key aspect of metacognitive awareness is “dis-identifying” with or “decentering” from the stream of internal phenomenal “events.” When the mind gets caught up in or “fuses” with the internal stream, attention is brought back to metacognitive awareness (Lutz et al., 2008, 164). As with Insight meditation, the aim of Open Monitoring is to gain insight into and freedom from the conditioned nature of experience. This has been operationalized as increases in

cognitive and emotional flexibility gained through the “deautomatization” of biased cognitive-affective habits and schemas (Vago and Silversweig, 2012, 13).

Finally, the third type of meditation is lovingkindness (*metta*) and compassion (*karuna*) meditation, which are the two most frequently practiced *brahma-viharas* (“divine abode”) meditations (Salzberg, 1995; Dalai Lama, 2001). Lovingkindness and compassion meditations seek to calm the mind by cultivating these positive emotions, which counter negative emotions like anger and fear. Lovingkindness meditation focuses on cultivating love for all beings, while compassion meditation fosters the wish for all beings to be free from suffering. In the popular literature (e.g., Salzberg, 1995), the procedures of lovingkindness and compassion meditations are usually described as generating positive feelings of love and compassion for one’s self, then a loved one, a neutral person, an “enemy,” and finally the entire universe. The task is to feel love and compassion for each individual, with equal measure. When each person (and then all sentient beings) is visualized, the meditator internally repeats some variant of the following mantra:

May all beings [or a specific individual] find love and happiness. May all beings be free from danger and fear. May all beings be free from pain and sorrow. May all beings live with ease and peace (Salzberg, 1995, 30-31).

Lovingkindness and compassion meditations have been operationalized in the psychological literature as “ethical enhancement” exercises that promote emotional regulation. Declarative (episodic) memories of positive and negative persons are held in mind during the generation of prosocial concern, and negative associations are extinguished and reconsolidated (Vago and Silversweig, 2012, 14-15). Research indicates that lovingkindness and compassion meditations decrease negative emotions like depression, anxiety, and anger, and increase empathy and compassion for self and others (see Hofmann et al., 2011).

Mindfulness-Based Interventions

Finally, mindfulness can refer to a group of *mindfulness-based interventions*. Mindfulness-based interventions integrate Western psychological models of psychotherapy with mindfulness meditation practices and techniques derived from Buddhism. As mentioned above, the most prominent and well-researched mindfulness-based interventions are Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 2005); Mindfulness-Based Cognitive Therapy (MBCT; Segal, Williams, and Teasdale, 2013); Acceptance and Commitment Therapy (ACT; Hayes, Strosahl, and Wilson, 2012); and Dialectical Behavior Therapy (DBT; Linehan, 1993). All four of these mindfulness-based interventions are supported by psychological outcome research that has indicated their effectiveness in treating a range of affective, anxiety, personality, and somatic disorders (see Didonna, 2009; Chiesa and Serretti, 2010; Baer, 2014).

All mindfulness-based interventions appear to share several major theoretical suppositions. As discussed in the Introduction, traditional cognitive-behavioral therapy (CBT) and many forms of psychodynamic psychotherapy focus on changing *mental content*. In this view, negative emotions and destructive behaviors are, in part, the product of maladaptive beliefs or distorted internal objects. Revising and restructuring these internal schemas promotes positive psychological change (e.g., Beck, 2005; Blatt, 2008). In contrast, MBSR and the “third wave” CBT therapies (e.g., MBCT, DBT, and ACT) focus on changing *mental processes*.⁶⁹ Therapeutic change for mindfulness-based interventions comes not from revising cognitive distortions, but by “changing our relationship” with our mind. Mindfulness-based interventions cultivate “psychological acceptance,” the compassionate and nonjudgmental acceptance of the totality of

⁶⁹ In Steven Hayes’ nomenclature, behavior therapy was the “first wave” of American psychological therapy, CBT was the second wave, and ACT and other mindfulness-based therapies are the third. See Hayes et al., 2012.

our present experience, including painful thoughts and emotions (Hayes et al., 2012, 77). Attempting to directly change, suppress, push away, or alter the “frequency or form” of painful thoughts, emotions, and memories is termed “experiential avoidance,” and is held to lead to negative outcomes like depression and anxiety (Hayes et al., 2012, 72).

The central meditative skill cultivated in all mindfulness-based interventions is metacognitive awareness. As described in the last section, metacognitive awareness is the capacity to “dis-identify” with or gain “psychological distance” from our mental states (Segal, Williams, and Teasdale, 2013, 183). In various models, metacognitive awareness is known as “decentering” (Segal et al., 2013), “reperceiving” (Shapiro and Carlson, 2009), “cognitive defusing” (Hayes et al., 2012), “disembedding” (Safran and Muran, 2000), and “de-automatizing” (Deikman, 1966). It may be the “metamechanism” which underlies mindfulness in all mindfulness-based interventions (Shapiro and Carlson, 2009, 94). In the case of depression, clients learn to decenter from ruminative thoughts and painful affects by grounding their awareness in their breath or the flow of mental experience during meditation. This allows them to observe the painful mental states as they arise and pass away. Through the course of treatment, clients gain an experiential realization that negative cognitions and affects are ephemeral states of mental experience. They are not “inherent” aspects of the self, nor are they necessarily accurate depictions of reality.⁷⁰

As is evident, metacognitive awareness bears a strong family resemblance to the Buddhist idea that emotional liberation comes from direct insight (*vipassana*) into the conditioned and non-substantial nature of reality, as cultivated in Insight meditation. It is found

⁷⁰ Note the similarities with Fonagy’s mentalization model, such as the distinction between psychic equivalence (equating internal and external reality) and pretend mode (separating internal and external reality); also, how “experiencing a thought as only a thought is a developmental achievement” (Fonagy et al., 2003, 427). I will discuss these connections further in Chapter V.

in the “monitoring” component of Focused Awareness and the “metacognitive monitoring” capacity of Open Monitoring. It is also assessed in all the state and trait scales of mindfulness. Finally, as will be discussed below, metacognitive awareness is usually posited as one of the major variables that mediate psychological change and mental wellbeing as a result of the mindfulness-based interventions, as well as the neurobiological changes that occur in the neural systems underpinning attention control and emotional regulation (Hölzel et al., 2011).

For the rest of this section, I now turn to describing and analyzing two major mindfulness-based interventions. While mindfulness meditation is a central focus of instruction and practice in MBSR and of MBCT, there is dispute over the centrality of meditation practice for DBT and ACT (see Chiesa and Malinowski, 2011). The evidence base is also much larger for MBSR and MBCT than the other mindfulness-based interventions, and these two models have spawned related treatment approaches such as Mindfulness-Based Relapse Prevention (MBRP), Mindfulness-Based Eating Awareness Training (MB-EAT), and Mindfulness-Based Chronic Pain Management (MBCPM) (see Didonna, 2009; Baer, 2014). For these reasons, I will focus on MBSR and MBCT research in this section.

MBSR

First, MBSR, as discussed above, was created in 1979 by Jon Kabat-Zinn, the molecular biologist and professor of medicine emeritus at the UMass Medical School. As described in Kabat-Zinn’s *Full Catastrophe Living* (1990), MBSR was originally designed to treat chronic pain patients who had “fallen through the cracks” of the medical system (Kabat-Zinn, 2011, 294). It has now has been used as a treatment for a variety of psychological and health disorders, such as depression and anxiety. MBSR is structured in an eight-week, group program format. Up

to thirty-five students meet weekly with an MBSR-certified group leader for a two-to-three hour class. There is one six-hour silent retreat, which occurs on a weekend between the sixth and seventh classes. The MBSR curriculum takes students through a progressive program of didactic instruction and group practice in a variety of techniques. These include body scan meditations; sitting focused awareness, open monitoring, and lovingkindness meditations; walking meditations; and gentle Hatha yoga poses. Students are given instructional materials and guided meditation tapes for use in daily informal home practice, which is recommended for forty-five minutes per day.

MBSR classes emphasize group discussion of the didactic material and “sharing” of personal experiences encountered during group and home meditation practice. Students are also encouraged to incorporate mindfulness awareness practice throughout the day while engaged in work activities or in relationships, and to think of mindfulness as a “way of being” rather than a compartmentalized home practice. As described above, Buddhist philosophy and religion are deliberately downplayed during MBSR classes, in order to make the material compatible with medical and clinical settings. In all activities and group discussion, Kabat-Zinn’s iconic definition of mindfulness is emphasized: paying attention on purpose, in the present-moment to one’s inner experience, with an attitude of non-judgmental compassion and acceptance (Kabat-Zinn, 1990).

Over the last twenty years, over 120 randomized controlled trials (RCTs) have been conducted on the effects of MBSR interventions on psychological functioning and wellbeing (Khoury et al., 2013). Although the methodological limitations of early studies have frequently been criticized, many of the newer RCTs do appear to meet more stringent methodological criteria, such as using “active” control groups (see Chiesa and Serretti, 2009; Goyal et al., 2014).

Overall, the research indicates that MBSR is effective in reducing self-reported levels of anxiety, depression, rumination, PTSD-related “avoidance symptoms,” and pain-related and other “medical symptoms” (Keng et al., 2011, 1044). In both clinical and non-clinical populations, MBSR is also effective in improving self-reports of positive emotions, a “sense of spirituality,” empathy, forgiveness, self-compassion, “satisfaction with life,” and quality of life (Keng et al., 2011, 1044). Critics of the MBSR research argue that future research needs to more effectively tease out the “specific” effects of mindfulness meditation practice on improvements in psychological functioning from “non-specific” effects like MBSR group participation and support (see Khoury et al., 2014).

MBCT

Second, MBCT was created in the late 1990s by psychologists John Teasdale (University of Cambridge), Mark Williams (University of Oxford), and Zindel Segal (University of Toronto). All three psychologists were noted researchers of the cognitive therapy of depression. They became interested in synthesizing MBSR techniques with CBT when evidence began to accrue that while CBT was an effective treatment for depression, it was not especially effective in preventing subsequent depressive relapses (Segal et al., 2013, 24). MBCT was thus initially designed as a “maintenance” treatment procedure to help prevent depressive relapse in patients who suffer from recurrent depression but whose symptoms were currently in remission. The focus in MBCT is on targeting “vulnerability processes” that are implicated in the reactivation of depression, such as episodes of sadness and dysphoria that trigger negative automatic thoughts. By learning to decenter from and observe the arising and passing away of negative moods and thoughts, MBCT “loosens the connection” between the two and prevents relapse (Segal et al.,

2013, 160). Recent evidence suggests that MBCT is effective as a treatment for a variety of mood, anxiety, and health disorders (Sipe and Eisendrath, 2012).

Like MBSR, MBCT is designed as an eight-week group program format. As described in their self-help book, *The Mindful Way Through Depression* (Williams, Teasdale, and Segal, 2007), up to twelve students meet weekly with an MBCT-certified group leader for two-hour classes. There is also a one-day silent retreat, which occurs between the fifth and sixth classes. The MBCT curriculum includes didactic instruction and group practice in many of the same techniques as MBSR. These include body scan meditations, sitting FA and OM meditations, walking meditations, and gentle Hatha yoga poses. Interestingly, MBCT instruction does not include lovingkindness or *metta* meditation, although compassionate acceptance of feelings and thoughts is emphasized throughout the course (Shapiro and Carlson, 2009, 51). Students are also given basic instruction about depression, the stress response, and cognitive theory and therapy, are taught to monitor and observe the connection between negative moods and automatic thoughts. Finally, like MBSR students are given instructional materials and guided meditation tapes for use in daily informal home practice. In the last two sessions, explicit plans for relapse prevention are discussed (see Williams, Teasdale, and Segal, 2007).

A recent meta-analytic review of 6 RCTs conducted since 2000 indicate that MBCT is associated with a 43% reduction in depressive relapse risk in patients who had suffered three or more prior episodes of depression. Two of the studies also indicated that MBCT was “at least as effective as maintenance antidepressant medication” (Piet and Hougaard, 2011, 1032). Moreover, a growing body of “preliminary” research also suggests that MBCT may be effective as the primary treatment for depression (rather than just relapse), as well as for a variety of mood, anxiety, and health disorders (see Keng et al., 2011; Marchand, 2012; Khoury et al.,

2013). Finally, MBCT is now listed by the British National Institute for Health and Care Excellence (NICE) as an effective treatment for recurrent depression. The British government recently recommended that MBCT be “made available to 580,000 people who suffer recurrent relapses into depression, at an initial cost of £10m.”⁷¹

Mediation Analyses of the Mechanisms of Mindfulness-Based Interventions

In recent years, several research groups have begun the process of elucidating the specific underlying mechanisms by which mindfulness-based interventions lead to therapeutic change (see van der Velden, et al., 2015; Gu et al., 2015). The analysis of psychologist Jenny Gu and colleagues at the University of Sussex is noteworthy for its use of “mediation analyses.” Mediation analyses attempt to identify “the indirect influence of a treatment (X) on an outcome (Y) through a mediator (M).” They have been described as the “first step” in discovering the causal mechanisms of a treatment program (Gu et al., 2015, 3). Gu used meta-analytic and structural equation modeling statistical procedures to analyze twenty high-quality randomized controlled trials of mindfulness-based interventions in the literature. All twenty of the studies administered a standardized protocol of MBSR or MBCT to experimental groups, used some type of state or trait measure to assess levels of mindfulness before and after the eight-week mindfulness-based intervention, and correlated pre- and post-test mindfulness levels with a battery of psychological tests of other cognitive processes and personality traits, such as self-compassion and psychological flexibility.

Gu analyzed six mechanisms that were tested as mediators in the twenty RCT studies: mindfulness, assessed with the state and trait measures described above and which included

⁷¹ Quotation retrieved from <http://www.theguardian.com/lifeandstyle/2015/oct/20/mindfulness-in-the-mainstream-an-old-solution-to-modern-problems>. See also <http://themindfulnessinitiative.org.uk/>.

some version of metacognitive awareness as a variable; “repetitive negative thinking,” which was defined as intrusive rumination about the past and worry about the future; self-compassion, or the attitude of non-judgmental acceptance of thoughts and behavior; psychological flexibility, or the capacity to “fully embrace” inner experience in the present moment without attempts at avoidance or change (equivalent to “psychological acceptance” discussed above); and cognitive and emotional reactivity, defined as “the extent to which a mild state of distress coupled with stress reactivates negative thinking and emotional patterns” (Gu et al., 2015, 5-8).

Using their statistical procedures, Gu and colleagues discovered that there is “strong, consistent evidence” for cognitive and emotional reactivity as underlying mechanisms of the effects of mindfulness-based interventions on psychological outcomes; “moderate and consistent evidence” for mindfulness and repetitive negative thinking as mechanisms; and “preliminary but insufficient evidence” for self-compassion and psychological flexibility as mechanisms (Gu et al., 2015, 8). In addition, Gu determined that mindfulness and repetitive negative thinking (rumination and worry) are “significant mediators” of the effects of mindfulness-based interventions on mental health outcomes like depression, anxiety, stress, and negative affect. In other words, MBSR and MBCT interventions influenced the mechanisms of mindfulness, rumination, and worry, and changes in these mechanisms (i.e., increases in mindfulness and decreases in rumination and worry) mediated the improvements in psychological functioning that resulted. Gu and colleagues concluded that their mediation analyses were “largely consistent” with the proposed theoretical underpinnings of MBSR and MBCT, as well as the operationalized components of state and trait mindfulness measures like the TMS and the FFMQ (Gu et al., 2015, 8).

Meta-Analytic Research on the Clinical and Health Benefits of Mindfulness-Based Interventions

Finally, I will briefly explore evidence for the effectiveness of mindfulness-based interventions for clinical and health disorders. In recent years, there have been several meta-analytic reviews of RCT trials of MBSR, MBCT, and other mindfulness-based interventions for psychiatric and medical-related disorders (e.g., Hofmann et al., 2010; Khoury et al., 2013; Goyal et al., 2014). The largest and most comprehensive of these reviews appears to be the study conducted by Khoury and colleagues (2013). In their study, 209 RCTs with over 12,000 subjects were analyzed with meta-analytic statistical procedures.⁷² The studies were weighted according to their methodological rigor (e.g., pre- and post-test design, wait-listed control group, active controls groups). The results indicated that the mindfulness-based interventions produced “large and clinically significant” effect sizes for the reduction of symptoms in anxiety and depression (Hedge’s $g = .72; .66$, respectively), and these gains were largely maintained at follow-up (Khoury et al., 2013, 767). The effect sizes for the reduction in symptoms of other psychological disorders (e.g., PTSD, personality disorders, psychosis, substance abuse, and ADHD) were “moderate” (Hedge’s $g = .57$), while the effect sizes for pain- and stress-related medical disorders (e.g., cancer, fibromyalgia, arthritis, headaches, obesity) were “small” (Hedge’s g ranging from $.28$ to $.43$).

Khoury and colleagues also found that mindfulness-based interventions were more effective in reducing the symptoms of psychological and medical disorders than psychoeducational interventions, supportive therapies, relaxation procedures, and art therapies. However, there was no difference in the effectiveness of mindfulness-based interventions

⁷² The mindfulness-based interventions in Khoury’s study included MBSR, MBCT, mindfulness-based relapse prevention protocols, and other mindfulness meditation-based protocols. ACT and DBT RCTs were excluded from the review as mindfulness meditation is not usually formally taught in their curriculums. See Khoury et al., 2013.

compared with CBT, traditional behavioral therapies, or pharmacological treatments (Khoury et al., 2013, 769). Finally, Khoury and colleagues found that mindfulness-based interventions increased test subjects' levels of mindfulness by the end of treatment; that there was a "strong positive correlation" between the mindfulness levels of participants and their clinical outcomes; and that therapists' personal experience and expertise in mindfulness meditation "moderated" participants' clinical outcomes more than the therapists' "general clinical training." Khoury concluded that "MBT [mindfulness-based therapy] is an effective treatment for a variety of psychological problems, and is especially effective for reducing anxiety, depression, and stress" (Khoury et al., 2013, 763).

Neuroscientific Research on the Neural Mechanisms of Mindfulness⁷³

In the last section of this chapter, I will review neuroscientific research on the possible neurocognitive mechanisms of mindfulness. Although the neuroscientific study of the mind and consciousness is still in its infancy, considerable progress has been made in elucidating the neural correlates of psychological experience in the last several decades, especially since the advent of neuroimaging techniques in the 1980s. The same progress is occurring in investigating the neural correlates of meditative practices and religious experience (e.g., McNamara, 2006; Lutz et al., 2007).

Especially since 2000, researchers appear to be converging toward the elucidation of major neurocognitive mechanisms that may underlie the mindfulness construct. These include attentional control processes, and emotion regulation capacities (see Hölzel et al., 2011; Vago

⁷³ This section is an expansion of a neuroscience of mindfulness section in Gay and Kreislermaier, 2016.

and Silbersweig, 2012; Lazar, 2013; and Tang, Hölzel, and Posner, 2015).⁷⁴ Mindfulness meditation training appears to be associated with significant changes in the neural functioning and the physical structures of the brain regions involved with each of these mechanisms. Describing the neuroscientific research of these two mechanisms will illustrate efforts in this new, burgeoning field of the neuroscience of mindfulness.

Attentional Control

First, the development of attentional control is considered to be foundational for all three types and all stages of meditation training (Anālayo, 2003). Much of mindfulness meditation is dedicated to calming and stabilizing the mind, becoming aware when the mind wanders to thoughts of the past or future, and returning over and over to the present moment of experience. As discussed above, many schools of Buddhism advocate developing attentional control, first, for novice meditators through Focused Attention (*samatha*) on the breath and body, before then progressing to the Open Monitoring (*vipassana*) of whatever comes into conscious experience. But the development of attentional control is central for *Vipassana* meditation as well, as adherents believe the mind must be stable to directly experience the conditioned nature of experience and the self (Gethin, 1998).

Research on attentional control in mindfulness meditation can be mapped within existing, well-researched psychological models of attention. The University of Oregon psychologist Michael Posner and colleagues (e.g., Petersen and Posner, 2012; Tang and Posner, 2015) have identified three attention system subcomponents in human attention processing. First, *alerting* is

⁷⁴ Two other mechanisms that have been investigated in the literature are body awareness and self-referential processing capacities. Due to space constraints, I will not review them here. For reviews of all four processes, see Hölzel et al., 2011; et al., 2011; Vago and Silbersweig, 2012; Lazar, 2013; and Tang, Hölzel et al., 2011; and Posner, 2015.

a sustained state of vigilance for incoming stimuli. It is modulated by the neurotransmitter noradrenaline, which originates in the locus coeruleus of the midbrain (Tang and Posner, 2015, 81). An everyday example of alerting is waiting for an alarm clock to ring. In mindfulness meditation, alerting may be associated with sustained efforts to focus on and maintain one's attention on the breath or the body to the exclusion of other bodily sensations, emotions, or thoughts, as in Focused Attention (*samatha*).

Second, the *orienting* network selects specific information from incoming sensory stimuli. Orienting is involved with the frontal eye field and the inferior and superior parietal cortex (PC; Petersen and Posner, 2012; Tang and Posner, 2015, 81). A common example of orienting is keeping one's eye on and tracking only the quarterback during every play of a football game. In mindfulness meditation, orienting appears related to re-directing awareness back to the selected meditation object after noticing that one's thoughts have drifted during Focused Attention meditation (van Vugt, 2015, 191; Chiesa et al., 2011, 452).

Third, the *executive attention* network monitors and resolves conflict between incompatible mental activities and sensory inputs. Executive attention is associated with the anterior cingulate cortex (ACC), the lateral prefrontal cortex (LPFC), and parts of the insula and basal ganglia (Tang and Posner, 2015, 81). An example of executive attention is the Stroop test, which presents subjects with color words printed in mismatched ink colors and measures delays in their recognition of the word (e.g., the word "blue" is printed in red ink instead of blue ink, causing "sensory conflict"). In mindfulness meditation, executive attention may be related to monitoring whether one's mind has wandered during Focused Attention (*samatha*) meditation, as well as the more advanced Open Monitoring (*vipassana*) of all experiences which enter the

stream of consciousness, without focusing on any explicit meditation object (van Vugt, 2015, 191; Chiesa et al., 2001, 452).

Research suggests that mindfulness meditation can improve performance in all three attentional systems (see Tang and Posner, 2015). Executive attention has been shown to improve in subjects in short-term meditation training (after 5 days; Tang et al., 2007), after one month of integrative body-mind training (IBMT; Tang et al., 2007; 2012), and after a three-month intensive mindfulness retreat (Slagter et al., 2007). Orienting capacities improved after eight weeks of MBSR training (MacCoon et al., 2014), and after a three-month *samatha* retreat (MacLean et al., 2010). Alerting, by contrast, appears to improve more in later phases of subjects' mental training, such as after one-month (Jha et al., 2007) and three-month meditation retreats (MacLean et al., 2010).

Functional magnetic resonance imaging (fMRI) studies indicate that mindfulness meditation is associated with neural activation in all three attention networks, as well. Enhanced activation in the rostral ACC (Hölzel et al., 2007; Tang et al., 2009) and the LPFC (Allen et al., 2012) brain regions have been found in meditator groups versus controls, which are associated with executive attention. Enhanced activation has also been found in the parietal cortex (Golden and Gross, 2010) in meditator groups versus controls, which is associated with orienting. Interestingly, ACC activation was decreased among expert monastic meditators. This possibly reflects a state of “effortless attention” achieved through intensive, long-term practice (Brefczynski-Lewis et al., 2007).

Finally, research suggests that mindfulness meditation training is associated with structural or anatomical changes in the three attention networks. In other words, mindfulness

training has real, physical effects in the brain that can be measured. “Morphometric” changes, which are physical changes in brain volume or density, have been discovered in the neural attention networks of mindfulness meditation practitioners using structural MRI (see Fox et al., 2014). Increased grey matter cortical thickness and white matter integrity were found in the ACC in meditator groups versus controls (Grant et al., 2010; Tang et al., 2010). Decreases in age-related deterioration in grey matter volume in the putamen, part of the basal ganglia, were also found in meditators (Pagnoni and Cekic, 2007).

Emotion Regulation

Second, in mindfulness meditation practice, emotion regulation skills are associated with the development of mental equanimity and inner freedom from distorted, habitual cognitive-affective reactions (Vago and Silbersweig, 2012). As we have seen, a calm and stable mind is thought to be critical for the development of insight into the conditioned nature of the self and reality. Fascinatingly, in the *Theravada* tradition mindfulness of the emotions is related to three of the four meditative objects of mindfulness training, in addition to the body (*Satipatthana Sutta*; Anālayo, 2003). These three are: 1) mindfulness of “feelings” (*vedanā*), defined as lucid awareness of the “pleasant, unpleasant, and neutral” qualities of mental experience; 2) mindfulness of the “mind” (*citta*) or the stream of consciousness, which include emotions like joy, greed, sadness, or aversion; 3) and mindfulness of the *dhammas*, which in this context are specific mental qualities important in Buddhist psychology and the path to *nirvana*. Affect-oriented *dhammas* include the “five hindrances” to enlightenment (desire for sense objects, ill-

will, sleepiness, excitement and depression, and doubt); and five of the “seven factors” of enlightenment (vigor, joy, tranquility, concentration, and equanimity)⁷⁵ (Gethin, 2015, 13).

As with attentional control, emotion regulation in mindfulness meditation can be mapped within well-researched psychological and neuroscientific models of the emotions and affect regulation. In psychology, emotion regulation can be defined as strategies to modulate ongoing emotional experiences and responses. Prominent researchers like Stanford University psychologist James J. Gross have delineated a variety of emotion regulation strategies (Gross, 2014). These range from behavioral strategies like avoidance and exposure to “cognitive control” strategies like selective attention and reappraisal (discussed below; see Ochsner and Gross, 2005; Richard and Lauterbach, 2007).

Extensive empirical research suggests that mindfulness meditation is effective in improving emotional regulation. When compared with controls, test subjects who engage in mindfulness or mindfulness-based intervention protocols evidence significant increases in positive mood states like wellbeing or joy; and decreases in negative mood states, emotional reactivity, physiological reactivity, and distractive/ruminative thoughts (see Chiesa and Serretti, 2010; Hölzel et al., 2011). Which emotion regulation strategies mindfulness training may promote and improve are questions of ongoing scientific investigation.

As part of these investigations, researchers have examined the neural substrates associated with two strategies hypothesized to account for emotion regulation in mindfulness meditation practice: reappraisal and exposure. First, in the psychological literature reappraisal is defined as reinterpreting the meaning or context of a stimulus to alter one’s affective response. An example is managing your negative thoughts and mood by deciding your boss’s scowl during

⁷⁵ The other two factors are mindfulness and investigation of *dhammas*. See Gethin, 1992; Anālayo, 2003.

the morning meeting was more likely due to the boss's problems at home rather than your performance at work. Reappraisal is a "top-down" regulation strategy. Prefrontal attentional and executive control regions are hypothesized to "downregulate" or inhibit affect-generating neural regions, like the amygdala (Ochsner and Gross, 2008).⁷⁶ Functional and structural MRI research findings investigating mindfulness meditation are consistent with this hypothesis. In novice meditators (one to eight weeks) versus controls, enhanced activations in the dorsolateral PFC (Allen et al., 2012), dorsomedial PFC (Lutz et al., 2014), and ventrolateral PFC (Hölzel et al., 2013) were found. Decreased activation in the amygdala was also found (Hölzel et al., 2013; Lutz et al., 2014). Structural MRI research also showed increased cortical thickness in the orbitofrontal cortex (Luders et al., 2009), and decreased grey matter density in the amygdala (Hölzel et al., 2010).

The second emotion regulation strategy is exposure. Exposure is a well-researched behavioral therapy technique used to reduce fear conditioning and anxiety (see Richard and Lauterbach, 2007). An example is a person coping with her fear of spiders by getting into a relaxed state and gradually allowing herself to think about spiders; then view pictures of spiders; and finally, touch a real spider *in vivo*. These new safety experiences are encoded in memory and gradually "extinguish" the original fear response by replacing or "reconsolidating" (re-work) the old, fearful memories of spiders (Ost, 1997; Richard and Lauterbach, 2007). Recent evidence suggests that the neural underpinnings of this exposure process may consist of activations in a ventromedial PFC-hippocampus neural network. This network "downregulates" the amygdala and facilitates the recall of positive extinction memories (Banks et al., 2007; Milad et al., 2007).

⁷⁶ This is conceptually similar to intersubjectivity and MBT models described in Chapters II and III.

There are interesting similarities between mindfulness meditation and exposure therapy. In meditation, individuals turn toward whatever is present in experience and observe it with equanimity and acceptance. Researchers have hypothesized that the metacognitive awareness, non-reactivity, and heightened relaxation of mindfulness meditation may constitute an exposure situation (Hölzel et al., 2011). Physiological, fMRI, and volumetric research suggests this may be the case. Mindfulness meditation is associated with reductions in sympathetic autonomic reactivity (see Benson, 2000), fMRI activations in the medial PFC and hippocampus (Lazar et al., 2000), and deactivations in the amygdala (Goldin and Gross, 2010). As well, increased grey matter density associated with mindfulness meditation practice has been found in the hippocampus and vmPFC (see Hölzel et al., 2008; Luders et al., 2009).

The relationship between a mentalizing and a mindful stance in psychotherapy can be likened to a double helix: a pair of partially overlapping spirals that converge and diverge, again and again. Mentalizing and mindfulness are distinct, but complementary and interweaving, ways of knowing and responding to experience....Both a mentalizing stance and a mindful one can enhance the therapist's capacity to help the patient to regulate affects more effectively, to feel a sense of agency, and to integrate previously dissociated experience. And both can enhance awareness and internal freedom by allowing us—as therapists and patients alike—to recognize the ways in which the mind mediates our experience of the world.

David Wallin, *Attachment in Psychotherapy*, 2007, 312

CHAPTER V:

A DEVELOPMENTAL SCIENCE MODEL FOR THE INTEGRATION OF ATTACHMENT, MENTALIZATION, AND MINDFULNESS

Having finally finished presenting the three central models of attachment theory, mentalization, and mindfulness in the previous four chapters, I now turn to an explication of a proposed model for their integration in a developmental science framework. At this point of my discussion I would not be surprised if the reader feels overwhelmed by the avalanche of concepts, theories, models, and techniques of attachment, mentalization, and mindfulness. These three constructs appear to provide very different conceptions of how therapeutic change occurs and what techniques best facilitate that change. As I stressed in the Introduction, attachment theory and Fonagy's mentalization theory are relational, intersubjective, grounded in development, conscious- and unconscious-oriented, reflective and verbally articulated, and past/present/future-oriented. Mindfulness therapies, on the other hand, are intrapersonal, non-

developmental, conscious-oriented, non-reflective, bodily- as well as mentally-focused, and present-oriented. Yet the empirical research presented throughout the last four chapters suggests both major approaches can treat many of the same affective, anxiety, and somatic disorders. Growing neuroscience evidence also suggests that both cause changes in the brain, often in differing neural structures and networks. The central research question of this dissertation, therefore, is: how might we understand and integrate all of these conceptual, clinical, and neuroscientific disparities and contradictions we see in the research literatures?

In this chapter and Chapter VI, I propose my solution. Attachment, mentalization, and mindfulness can be integrated with one another using developmental and evolutionary models. We see disparities in the therapeutic and neuroscientific literatures because psychotherapy and mindfulness meditation invoke *different* mechanisms in the brain, which have evolved in *different* periods of mammalian and human history. In order to reconcile their differences, we need to better understand human evolution over the last two million years and the neurodevelopment of children over the first six years of life.

In this chapter, I will take up the question of how attachment, mentalization, and mindfulness might be integrated with each other in contemporary developmental neuroscience models. Despite the many differences in these three constructs, a careful reading of the last four chapters indicates many instances of conceptual and neurobiological convergence. In my view, a developmental science model can bridge many of the differences and integrate many of the aspects of the three models. However, a more complete perspective of how attachment, mentalization, and mindfulness can be integrated will need to include biological and cultural evolution models. In Chapter VI, I will present these evolutionary models, as well.

It will also be important for the reader to recall my second major thesis of this dissertation, which I presented in the Introduction. I contend that Buddhism, like all religions, builds upon attachment-related foundations of love, protection, and support that have evolved over millions of years. Buddhist philosophies, rituals, and meditative practices are suffused with attachment-related themes. As I will discuss under Hypothesis # 2 below, “non-attachment” in Buddhist philosophy is not the same as “detachment” or “no attachment” in Western psychology. Attachment, mentalization, and metacognitive awareness can be seen as reciprocal and developmentally-interrelated processes. Moreover, I contend that Buddhist practitioners today, and even secular mindfulness meditators, are likely to gain from the attachment relationships and communal practices and rituals found in Buddhist *Sanghas* or in mindfulness communities.

I will take up my third central thesis of this dissertation, concerning how early human attachment bonds also shape the development of individuals’ moral sensibilities and empathy for others, in Chapter VI and the Conclusion.

My presentation in this chapter will be organized according to four psychological and clinical hypotheses, and one area for future research. First, I propose that traditional Tibetan Buddhist parenting and infant development models are compatible with modern attachment and mentalization models. Second, I will demonstrate that attachment, mentalization, and mindfulness are interrelated and interlocking psychological processes. Third, I contend that attachment, mentalization, and mindfulness are developmentally-interrelated processes. Fourth, I will argue that deficits in attachment and mentalization processes are partial causes of difficulties encountered in mindfulness meditation, and could help explain the scandals committed by prominent leaders of American Buddhist communities in recent years. Finally, at the end of the chapter I will discuss one fruitful area for future research and investigation: whether mindfulness

meditation can be productively integrated with Fonagy’s mindfulness-based therapy (MBT) model to form a “relational mindfulness MBT” model of psychotherapy.

Hypothesis # 1: Traditional Tibetan Buddhist Parenting and Infant Development Views are Compatible with Modern Attachment and Mentalization Models

First, as discussed in the Introduction, it is an oft-noted maxim that Buddhism and Buddhist philosophy do not have a model of developmental psychology and psychopathology (Engler, 1986; Rubin, 1996; Aronson, 2004). However, this adage needs to be amended to stating that Buddhism does not have a model of *modern* developmental psychology. Traditional Buddhist cultures emphatically do have *pre-modern* folk models of human development and psychopathology, which derive from indigenous religious practices and philosophies, folk medicines, and folk psychologies. In my view, the pre-modern Tibetan folk models of human development and parenting practices are highly consistent with the modern attachment and mentalization models and theories presented in this dissertation.

Although scholarly research on traditional *Theravada* and *Mahayana* Buddhist models of human development appears to be scarce, one recent book does chronicle the traditional birthing and child-rearing practices of Tibetan Buddhist cultures: *The Tibetan Art of Parenting* (1997, 2008).⁷⁷ The revised 2008 book was co-written by Anne Maiden Brown (a social psychologist and psychotherapist), Edie Farwell (a social and cultural anthropologist), and Dr. Dickey Nyerongsha (a Tibetan physician who now practices in California).⁷⁸ The authors compiled a model of traditional Tibetan birth practices, caregiving, and infant development informed by the

⁷⁷ Citation found in Harvey B. Aronson, *Buddhist Practice on Western Ground: Reconciling Eastern Ideals and Western Psychology* (Boston, MA: Shambhala, 2004), 238n. 1.

⁷⁸ Anne Maiden Brown, Edie Farwell, and Dickey Nyerongsha, *The Tibetan Art of Parenting: From Before Conception through Early Childhood*. Rev. ed. (Boston: Wisdom Publications, 2008).

small number of references in sacred texts like the *Tibetan Book of the Dead*; by traditional Tibetan medicine which draws from classical Indian, Chinese, Persian, and Greek sources; and by their own ethnographic observations and interviews with families from the exiled Tibetan Buddhist refugee community in Dharamsala, in northern India (Brown et al, 2008, 7).

Fascinatingly, the traditional models of parenting and infant development they describe are heavily influenced by Tibetan Buddhist philosophies of karma, reincarnation, and the *bardo* or “intermediate” state of consciousness where sentient “mental beings” or spirits exist between death and re-birth in a new material body (Brown et al, 2008, 38-41). Tibetan Buddhists believe that the karmic merits of both the spirits waiting in the *bardo* state to be reborn and the parents attempting to conceive determine when, where, and to whom a spirit will incarnate. From their research, Brown et al. (2008) describe seven stages of parenting and infant development: preconception, conception, gestation, birthing, bonding, infancy, and early childhood. They contend that the Tibetan perspective represents an “integrated view of birth... in which the physical, emotional, mental, spiritual, relational, and environmental elements of birth form one whole—a respected, unbroken continuum of life and interconnected experience” (Brown et al, 2008, 1).

In this section, I will first briefly describe each of Brown and colleagues’ seven stages. Next, I will discuss another account of contemporary Tibetan parenting and infant attachment processes, the moving 2015 HBO documentary, “Tashi and the Monk.” The film chronicles the transformation of an abandoned girl at a children's home and orphanage run by a Tibetan monk. Finally, I will describe the implications of the book and the documentary for my integration of attachment theory, mentalization, and mindfulness.

Seven Stages of Tibetan Parenting Practices and Infant Development

The first stage the authors describe is preconception. Preconception is “a time for preparing body, mind, emotions, and spirit to invite a child into the womb and family” (Brown et al., 2008, 19). Fascinatingly, Tibetans believe that the quality of the *chi* energy of the parents karmically “attracts” the *chi* energy of the intermediate *bardo* spirit that will incarnate. In order to attract the most spiritual and moral spirit possible to enter the family, parents endeavor to cleanse and purify their minds and bodies. This may take the form of reassessments of their life plans and goals, changes in their physical and dietary habits, and engagement in spiritual practices (e.g., prayers, mantras, rituals, prostrations, pilgrimages, and blessings from a lama). Communication with the *bardo* spirit that may be conceived is thought to also occur through dreams and emotions or intuitions (Brown et al., 2008, 19-20).

The second stage is conception, where “the spirit seeking incarnation is attracted by the specific energetic quality of the parents, even as they engage in intercourse” (Brown et al., 2008, 37). As with preconception, the total karmic environment during conception is considered important, and parents are encouraged to meditate on love, compassion, and gentleness while avoiding anger, attachment, and jealousy. Once conception has occurred it is believed that the fetus “forgets” its past life memories until later in gestation. Traditional Tibetan medicine prescribes a variety of treatments for infertility, which is believed to occur due to “dysfunctions of the energetic system” caused by a combination of congenital, psychological, and/or karmic problems (Brown et al., 2008, 38).

The third stage is gestation. Spirituality is considered to be important during the gestation stage, and spiritual practices and rituals performed by the mother during pregnancy are believed to benefit the mother and baby. In addition, traditional Tibetan medicine prescribes a variety of

treatments (i.e., herbs, massages, and baths) and special diets to ensure the health of mother and child. Dreams by the mother are also considered significant, and are believed to be portents of the child's personality and later life. Dreams are also especially helpful to locate reincarnations of important lamas. In the twenty-sixth week of gestation, it is believed the child begins to remember its past lives again; it will retain these memories until eight years old. If there are problems in pregnancy, lamas are also often employed to perform ceremonies, rituals, and divinations, and to bless pills for consumption (Brown et al., 2008, 60-61).

The fourth stage is birth. Tibetans believe that “[e]ach birth connects lives from beginningless time and boundless space” in the infinite cycle of rebirths (Brown et al., 2008, 88). Being reborn as a human is treasured and believed to be extremely rare, as this is the realm where one can compassionately help all sentient beings to achieve enlightenment. Most Tibetans birth at home, with midwives and the whole extended family attending and assisting. Spiritual and cultural rituals are performed which honor the event and tie the child to the Tibetan culture. For example, immediately after birth words of blessings and “auspiciousness” are recited, before the umbilical cord is cut and the placenta buried. One beautiful blessing reads:

My child, you have been born from our hearts. May you live a hundred years and see a hundred autumns, may you have a long and glorious life, overcoming all ills and enjoying complete happiness, prosperity and fortune (Brown et al., 2008, 99).

The fifth stage is bonding. Bonding is believed to begin during preconception (through dreams) and in the womb, and “develops through the love, closeness, and depth of relationship between parents and child” (Brown et al., 2008, 122). After birth, there is a three to four day period of exclusive family bonding, before the child is ritually cleansed and then introduced to the community in a “welcoming ceremony.” To facilitate bonding, the baby has continuous body contact with the mother and the family; nursing begins soon after birth; and “[w]ater, sun, touch,

fresh air, and massage also provide the baby with needed nourishment and connection to the earth” (Brown et al., 2008, 123). Interestingly, the mother continues to cultivate her own positive thoughts and emotions during infancy, as it is believed she “feeds” her feelings to the baby through her milk. A naming ceremony is also performed, during which the Dalai Lama or another high lama gives the child its name. This further serves to bind the child to his/her religious and cultural heritage.

The sixth stage is infancy. Tibetans believe that infants have a purity and simplicity of mind and “retain special gifts, sensitivities, and capacities adults no longer have.” These include the ability to see and hear spirits and to remember past lives (Brown et al., 2008, 147). Buddhist medical folklore identifies six stages of infant development during the first two years of life: the first time the child waves, sits up, teethes, crawls, stands and walks, and speaks words. Rituals celebrate these developments, and facilitate the health and safety of infants by countering negative spirits. Fascinatingly, traditional Tibetan medicine recognizes postpartum depression, and treats it through massages, “herbal steamings,” and meditative practices (Brown et al., 2008, 158). The entire extended family is involved in raising the infant. The mother in particular nurses the child, stays in constant physical contact, and teaches the child its first words, the family tree, and the deities in the family shrine. Before the Chinese occupation of Tibet and the Dalai Lama’s escape to India in 1959, babies in the second week of life were taken to the Jokhang Temple in Lhasa, Tibet, to pay their first homage to Lord Buddha (Brown et al., 2008, 153).

Finally, the seventh stage is early childhood. Movingly, Tibetans believe that every developmental milestone of a child should be celebrated and recorded. There are rituals associated with honoring the child’s first smile, the first step, the first word, etc. As noted above, it is believed that a child has “a natural phase of simplicity of mind before it is developmentally

ready to interrelate experiences, senses, emotions and thoughts with its situation and past experience” (Brown et al., 2008, 171). As a result, Tibetan children are taught holistically through imitation, memorization, touch, and movement. After age eight, children can be taught through more analytical means.

Harmony in familial and peer relationships is also highly valued in the Tibetan culture, rather than competition and individual expression (as in the West). Children are taught to value compassion, honesty, and sharing with others, including siblings, peers, and all sentient beings. Discipline is used to aid in teaching a child, but an emphasis is placed on correction over punishment (the Dalai Lama was actually spanked as a child with a switch!; see Brown et al., 2008, 185). Finally, traditional Tibetan medicine identifies twenty-four “childhood disturbances” that can afflict the young. These include “spirit disorders” like “nightmares, images, and projections,” as well as medical disorders like the measles or Down syndrome. Causes for the disorders are sought in a combination of physical, emotional, and spiritual factors, and treatments are inclusive of each (Brown et al., 2008, 172).

As a summary of their research, the authors interviewed Lama Gyatso, a respected local Buddhist leader and scholar, and an uncle of one of the Dharamsala families interviewed for their research. They asked Gyatso the following question: “If you could raise a child in an ideal way, so that it would be the best world citizen it could be, what would you do? If you were to recommend the best Tibetan childraising practices to Westerners, what would they be?” Lama Gyatso responded,

The most important aspect of Tibetan birth for people in other cultures to know is the value and use of spiritual ritual and initiations. When the baby smiles for the first time, celebrate it. When the baby walks for the first time, that is significant. Write it down. Capture the magic and celebration of each new development in an infant's life. Massage

and bodily touch from the moment of birth are also essential to full development. And breastfeeding needs to happen as soon after birth as possible (Brown et al., 2008, 200).

“Tashi and the Monk”: The Jhamtse Gatsal Children’s Community

Second, traditional Tibetan parenting and child-rearing practices are also chronicled in the poignant 2015 HBO documentary film, “Tashi and the Monk.”⁷⁹ Directed by Johnny Burke and Andrew Hinton, the documentary focuses on the interactions between a Tibetan Buddhist monk named Lobsang Phuntsok and a wild, abandoned five-year-old girl named Tashi Drolma. Earlier in his career, Phuntsok had been specially trained by the Dalai Lama to help teach Tibetan Buddhism in the West. However, in 2006 Phuntsok felt called to return home to the impoverished region where he was born, the Tawang district of Arunachal Pradesh, India, to found the Jhamtse Gatsal Children’s Community. Located on a remote mountaintop in the foothills of the Indian Himalayas, Jhamtse Gatsal is a home, community, and school which houses and educates nearly ninety at-risk, abandoned, and orphaned children and adolescents drawn from the surrounding villages.⁸⁰ In Tibetan, *jhamtse gatsal* means “garden of love and compassion,” and this name aptly describes the monk’s care of the children and the mission of the community.

In a moving scene, Phuntsok tells the children that he founded Jhamtse Gatsal because he, too, had an unhappy childhood (8:58). He was born to an unwed, teenage mother, and never knew his father. Because of her shame, he was abandoned by his mother immediately after birth and was taken in by his grandparents. Phuntsok was violent and delinquent as a child, and was sent to live in a monastery. There, the love and care of one monk changed Phuntsok’s life. He

⁷⁹ The film, trailer, and clips can be viewed at <http://tashiandthemonk.com/>.

⁸⁰ For more on the Jhamtse Gatsal community, see <http://jhamtsegatsal.org/about/>. See also Jhamtse International, a U.S. non-profit organization and Buddhist Center which supports the community: <http://jhamtseinternational.org/>.

decided he wanted to help change the lives of other unwanted and unloved children by providing for them a home and family grounded in love, compassion, and wisdom, just as the monk had done for him. Jhamtse Gatsal takes in young children and commits to raising and educating them through adolescence, until they can attend college or work as adults. As seen throughout the film, the children grow to consider Phuntsok as their father, the female teachers and *Ama las* (“house mothers”) as their mothers, and the other children as their brothers and sisters.

In a staff meeting with teachers and a house mother early in the film, Phuntsok refers to Tashi as “the naughtiest student at Jhamtse. She’s a troublemaker” (7:25). Tashi’s mother died from a severe illness, and her father is an alcoholic who abandoned her. The staff report that Tashi has been at the community for six months, and is “not getting better.” Tashi fights with other students, never shares, and suffers from enuresis. In several scenes, Tashi tells her doll she will “cut your throat,” describes dreams in which ghosts eat her parents and try to kill her, and appears to injure herself by grabbing and yanking on barbed wire in the fields. As described in Chapters I and II, these behaviors could be consistent with disorganized attachment. Phuntsok tells the staff, “we have to think about how help her change” (7:49).

Throughout the forty-one minute film, we watch Tashi’s slow, gradual improvement. Phuntsok counsels her when she is “naughty” and acts out in class; and assigns an adolescent boy to act as her “older brother” to be with her and teach her “right and wrong.” Midway through the film, Tashi progresses enough to share walnuts with another child. By the end, Tashi laughs and plays with her “sisters” and “brothers,” makes up with another child and hugs him after they fight, and participates in schoolwork and chores without fuss. Finally, we see Tashi become excited when Phuntsok asks her to become an “older sister” to a new group of children coming in to the community (37:23).

Four scenes from the film are particularly illustrative of the parental caregiving and love described in attachment and mentalization theory. In the opening scene, Phuntsok gives the group of children, lined up after the sounding of a bell, this message before sending them off for their day (Phuntsok speaks in slightly broken English):

When you look, today, at this kind of growing community, in some ways, all of us are basically abandoned or not really a wanted person. Everybody kind of give up the hope on us. But in this place you are welcome, and you have the opportunity to change. And we will be with you no matter what. This is a community of love and compassion. We need to move forward together, supporting each other, caring [for] each other. And these little ones, even the naughtiest ones, are the most amazing seed of compassion and love. Someday, they will blossom (1:48).

In a second scene, Tashi is sent to Phuntsok's office by her teacher after Tashi acts out in class—punching and spitting on a classmate, and then marking all over his class assignment paper with a colored marker. The teacher sees her behavior, and drags a sobbing Tashi to see Phuntsok. Tashi tries to yank away from the teacher's hand, and finally flops on the ground in front of his office and refuses to get up. She is clearly frightened and appears to expect to be punished, perhaps violently. Phuntsok meets with Tashi in the office.

[Phuntsok sits with Tashi, who is sobbing. He rubs her shoulders, then holds her chin in his hand, and finally sits compassionately with her while she cries. Phuntsok, speaking]: “No more tears” [Tashi still crying]. “Did you beat Maling” [another student]? [Tashi cries and shakes her head, “no”]. “Did you spit on him? Have you done something wrong?” [Tashi shakes her head, “no”]. “What did your teacher say?”.... [Phuntsok pauses, then picks up her hand]. “Give me your hand” [examines and touches her fingers]. “You have a wound on your hand. How did you get it? Does it hurt?” [Tashi looks at their hands, stops crying, and starts sniffing]. “Did you get some ointment for it? Look. I have one, too” [shows Tashi the wounds on his own hand]. “Mine hurts. Does yours?” [Tashi sniffles, looks at his hand, then up at his face].

[Phuntsok holds Tashi's hand, then speaks]: “Are you happy here?” [Tashi nods, “yes”]. “Nobody beats you here?” [she shakes her head, “no”]. “What should you do in class?” [Tashi, with her head down, shyly says, “study”]. “That's right, study.... Sometimes being naughty is OK” [Tashi look up at him and nods, “yes”]. “But the rest of the time you have to study and listen to your elders.” [Tashi nods, “yes”]. “When you grow up like me [raises his hand over his head], you will be very happy. Now you have to stop crying and smile” [Phuntsok wipes her tears off her face; Tashi stops sniffing]. “Shall I

walk you to your class?” [Tashi looks to the side, thinks, and nods “OK.” Phuntsok takes her by the hand and walks her out of his office] (4:58).

In a third scene, a dozen young children attend a Buddhist ritual with an *Ama la* (“house mother”). The house mother and the children light several dozen small, votive candles, and then sprinkle incense into a small altar fire. The house mother sings the following verses of a Tibetan lullaby, which the children repeat together:

In this great big world/ there is so much love and care. But there is no kindness greater/
than my mother’s love (25:48).

Fourth, in the final scene of the film Phuntsok plays a game of “keep away” with a group of children. Phuntsok runs around the yard with the ball, and a pack of children tackle and gleefully pile on top of him while shrieking and laughing. In a voiceover, Phuntsok says,

I cannot undo my life, and go back to my childhood, and really live my childhood fully. But one thing that now, I know, is that I could help to give these children their childhood, that I missed in my life. When I see them laughing, screaming, and playing, I feel I am living my childhood. I’m lucky that we have eighty-five children now, and I missed only one childhood, but I got an opportunity to live eighty-five childhoods. I know, when I look back, why I am alive today. There’s something really special in my life happened [referring to the monk who believed in him and changed his life]. Kids who are here now found a safe home, and now they have this opportunity to dream about their future (39:02).

As the music swirls, Tashi and a group of children play on the side of a hill facing a valley before the Himalayas. Tashi exultantly yells out over the valley, “I am Tashi Drolma! My name is Tashi Drolma!” The film closes as she is carried up the hill on the back of an older child, and then a group of children walk with Phuntsok back to the community home.

Implications for the Integration of Attachment, Mentalization, and Mindfulness

For the purposes of this dissertation, the major takeaways from *The Tibetan Art of Parenting* and “Tashi and the Monk” is that Tibetan Buddhist folk medicine and folk psychology

models of parenting and infant development are consistent with attachment and mentalization theories. For example, human attachment, bonding, and love are emphasized throughout the traditional seven stages of infant development. Tibetan parents and the entire extended family keep in constant physical and emotional contact with the children, and rituals record and celebrate every milestone of a child's development. Likewise, Lobsang Phuntsok's and the house mothers' new attachment relations with the children of Jhamtse Gatsal provide powerful evidence that love and compassion can help overcome the deficits of even the most traumatic of developmental histories.

Similarly, mentalization processes appear to be operant in Tibetan parenting, as well. Parents "mentalize" about the future personalities and life paths of their children-to-be in the pre-conception, conception, and gestation stages; mirror their children's affects and facilitate the capacity for self-regulation; and transmit the Tibetan Buddhist culture to their children through rituals and instruction. As discussed in Chapter III, Fonagy has described all of these processes as important psychological and evolutionary functions of parental mentalization (Fonagy, 2006; Fonagy et al., 2015). In "Tashi and the Monk," Phuntsok also provides a moving illustration of affect mirroring, empathy, and the facilitation of self-regulation when he connects with, calms, and instructs Tashi in his office after she has attacked a fellow student.

In summary, as a recent reviewer of *The Tibetan Art of Parenting* in the *Journal of Prenatal and Perinatal Psychology and Health* stated,

[W]hen viewed through the lens of healthy infant attachment, Tibetan parenting on the whole seems exemplary, and would fulfill the requirements of any modern attachment handbook for optimal neurological, immunological, and psychological development. From birth, babies remain in close contact with their mothers, and are, thereafter, continuously carried and worn on an adult's body. Babies sleep close to their parents and are massaged daily. Breastfeeding is on demand and continues for years. Fathers are

closely involved and hands-on from the beginning. Children are rocked, sung to, encouraged to play, and held securely in a web of loving community (Grille, 2010).⁸¹

Hypothesis #2: Attachment, Mentalization, and Mindfulness are Interrelated and Interlocking Psychological Processes

Second, in line with Wallin (2007), Siegel (2007), and Allen (2013), I contend that attachment, mentalization, and mindfulness can be considered as distinct yet interlocking psychological processes.⁸² As discussed in the Introduction, the central puzzle that this dissertation attempts to resolve is why and how psychotherapy and mindfulness meditation are both effective in treating a variety of psychological and health disorders when they appear so antithetical in conception and technique. As an opening response to this question, I contend that attachment, mentalization, and mindfulness are much more interrelated than is often thought. As pairs and all together, there are significant areas of convergence between the three constructs.

Interrelating attachment, mentalization, and mindfulness does present methodological challenges. In some uses of the terms, attachment is a quality of relational bonds, mentalization is a psychological capacity, and mindfulness is a skill or capacity cultivated through meditation and other practices. There is a risk of “mixing apples and oranges” by comparing the three constructs. In my view, a way of resolving these methodological issues is to compare the three constructs in their forms as psychological processes.

As I discussed in Chapters I through IV, all three constructs have been examined and measured using psychological instruments: attachment using Shaver’s Experiences in Close

⁸¹ Robin Grille (2010), “Review of *The Tibetan Art of Parenting - From Before Conception through Early Childhood*,” *Journal of Prenatal and Perinatal Psychology and Health*, 24(4): 246-249.

⁸² Hypothesis #2 can be considered a static, “cross-sectional” view of the interrelations of the three processes. In Hypothesis #3, I will present a dynamic, developmental view of their relations across time.

Relationships scale (ECR; Shaver et al., 1998);⁸³ mentalization using the Reflective-Functioning Scale (RFS; Fonagy, Target, Steele, and Steele, 1998); and mindfulness using the Five Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, and Toney, 2006). The ECR measures an individual's strength of *attachment security* or *insecurity* in adult romantic relationships. The RFS measures an individual's awareness of the *representational* and *developmental* nature of mental states underlying behavior in self and others. The FFMQ measures five mindfulness factors in individuals (*observing, describing, acting with awareness, nonjudging of inner experience, and nonreactivity to inner experience*). All of these factors may be related to the "metamechanism" of metacognitive awareness, which underlies mindfulness in all of the mindfulness-based interventions (Shapiro and Carlson, 2009, 94).

Importantly, all of these scales produce continuous dimensional scores measuring individuals' developmental levels of the three constructs. These scores range from -1 to 11 points, depending on the scale. A person can thus have higher or lower capacities or levels of the three constructs, and can progress (e.g., through therapy) or regress (e.g., through divorce) on the scales based on new experiences. Moreover, as I will discuss later in this chapter, Shaver and his colleagues (Sahdra et al., 2010; Caldwell and Shaver, 2013) have recently correlated attachment styles with mindfulness and non-attachment scores, using advanced statistical procedures.

In this section, I thus contend that despite their dissimilarities all three constructs can be compared and interrelated as psychological processes. The developmental levels of the three processes of a given individual can be measured, compared, and correlated. As I will propose under

⁸³ Main's Adult Attachment Interview instrument (AAI; Main et al., 1985), discussed in Chapter I, yields a security category, rather than a *dimensional score*. For my purposes, I will use Shaver's ECR scale, instead.

Hypothesis #4 below, a fascinating area for future research would be to elucidate the precise inter-correlations of all three processes in much greater detail.

As an aid for visualizing the interlocking nature of the three processes, I propose that attachment, mentalization, and mindfulness can be represented as three interlocking circles in a Venn diagram: each process has some elements that are distinct, some elements it shares with one other construct, and some elements it shares in common with all. Figure 7 illustrates these relations. In the overlapping sections of the circles, I have proposed common psychological functions that the three constructs appear to share. In the center section, I propose two functions that all three processes may share in common: psychological flexibility and the maturity of the dialectical relations between individuation and relatedness.⁸⁴ Demonstrating the functional similarities of the three constructs will in some instances require textual and philosophical analyses of what the Buddhist tradition actually states about these psychological processes, as the reader will see below.

There are also convergences in the neural development of the three processes, but I will postpone this analysis until the discussion under Hypothesis #3. Moreover, in Chapter VI, I will delineate Paul MacLean's (1990) triune brain account of how the neurobiological substrates of the three processes may have evolved over the last two hundred million years in our mammalian and hominid ancestors.

One final caveat: Figure 7 does not depict all of the theoretical, functional, and neurobiological similarities and differences between these three constructs. An exhaustive

⁸⁴ My three-circle Venn diagram is inspired, in part, by Geoff Goodman's (2014, 120) two-circle Venn diagram depicting the relations between mentalization and mindfulness. His diagram illustrates the psychological functions he believes are "common" versus "distinctive" to the two constructs, which draw upon the categories of the Five Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, and Toney, 2006). See my discussion of the FFMQ in Chapter IV.

analysis of this sort is beyond the scope of this section, and could take up an entire chapter (or volume), in itself.⁸⁵ I will highlight and briefly analyze only the issues most relevant for this dissertation. For more detailed analyses of the convergences of the three processes, see Allen (2006), Goodman (2014), and Kim (2015).

⁸⁵ For example, many Buddhist-influenced psychoanalytic theorists have also explored the parallels between mindfulness and the psychoanalytic concepts and techniques of “evenly hovering attention,” free association, abstinence, and technical neutrality. See Engler, 1986, 2003; Suler, 1993; Epstein, 1995, 2007; and Rubin, 1996, 2009. These concepts can be easily fitted onto the Venn diagram in Figure 7.

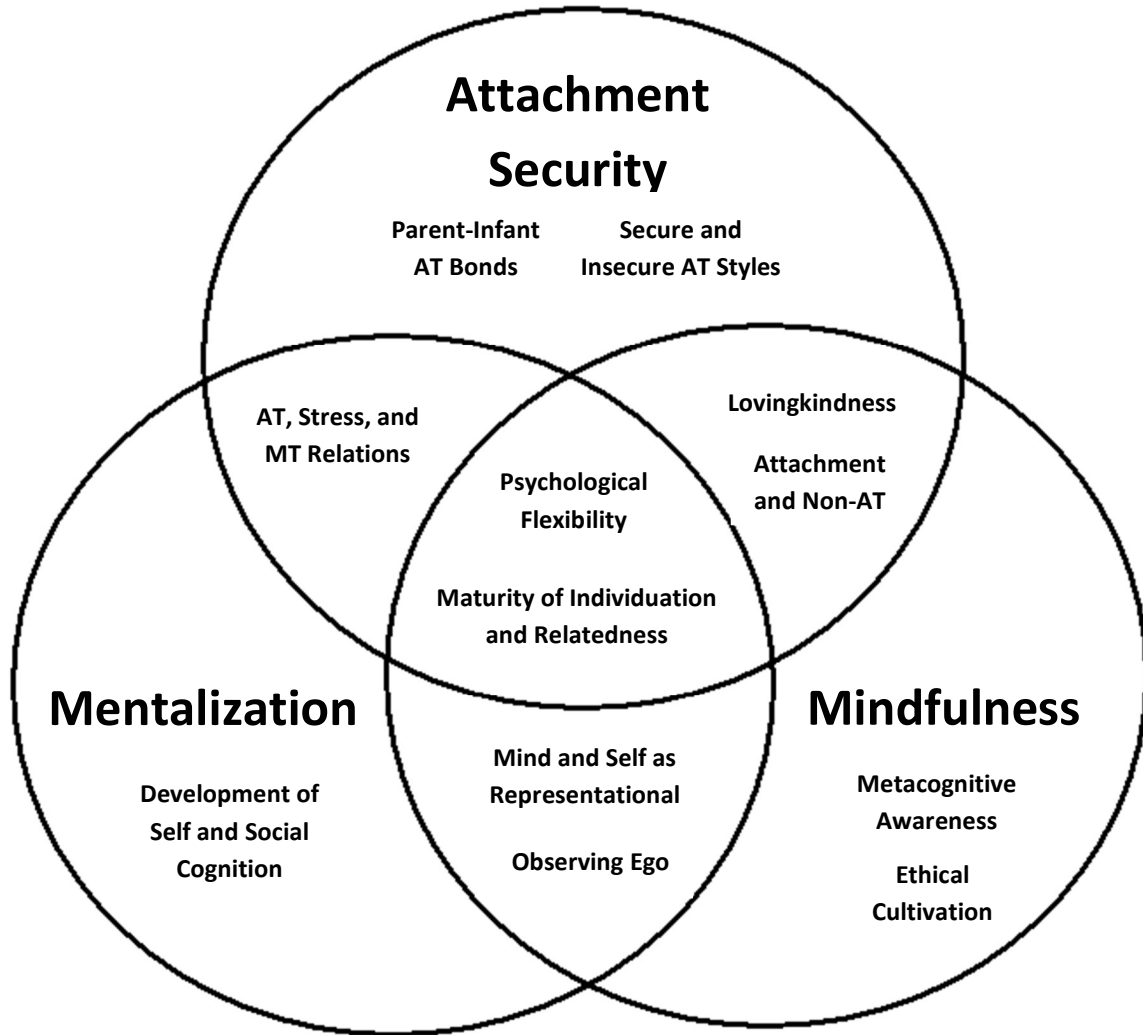


Figure 7. Interrelations Between Attachment, Mentalization, and Mindfulness Processes⁸⁶

Attachment and Mindfulness Convergences

First, I contend that attachment and mindfulness processes converge regarding the definition of “nonattachment” in the Buddhist texts and tradition. At first glance, the human need for love and attachment bonds with significant others would appear the antithesis of ancient Buddhist ascetic and monastic traditions that espouse renunciation and withdrawal (Harvey,

⁸⁶ Venn diagram template retrieved on 5-29-16, from <https://mrtylerslessons.files.wordpress.com/2015/02/three-way-venn-diagram.gif>

2013). However, Buddhist scholars maintain that the path cultivates “nonattachment” to emotions, objects, and relationships, rather than “detachment” from them or “no attachment” at all (Gowans, 2003; Desbordes et al., 2015).

It will be useful to demonstrate this in detail. As discussed in Chapter IV, the Four Noble Truths of Buddhist philosophy identify “craving” (*tanha*) and “attachment” (*upadana*) as the origin of the suffering (*dukkha*) at the heart of human condition (see Gethin, 1998, 59-84). We have an unquenchable lust, greed, and compulsiveness for pleasurable objects and states (e.g., sex, health, wealth, loving families); and we “stick to,” fixate on, and identify with these objects to make them permanently our own (Second Noble Truth). But since all things in this world, including our very selves, are conditioned and impermanent (*annica*), we feel sadness or hatred (*dosa*) when things change or pass away (First Noble Truth). *Nirvana*, the “awakened” state of unsurpassed happiness and inner freedom, is attained through the replacement of the “fires” of craving, hatred, and “delusion” (*moha*) with their opposites of nonattachment, lovingkindness, and wisdom (Third Noble Truth) (see Chapter IV).

Crucially, nonattachment (*alobha*) in the Buddhist tradition does not mean a cessation, suppression, detachment from, or indifference toward our emotional experiences or relationships with others. Instead, it is the cessation of this extreme form of compulsiveness, fixation, and identification with our experiences. Buddhist scholar and therapist Harvey Aronson defines nonattachment as the ability to fully engage in the flow of life “with balanced presence and a deep sense of spacious freedom,” free from internal pressure, fixation, or compulsion (2004, 182).

Indeed, in the *Theravadin* Buddhist tradition an *arahant* (“noble one”) who purports to have attained *nirvana* in this life continues to feel emotions like happiness, love, and sadness, feels pain, gets tired and sick, and dies. But unlike the novice, the *arahant* reportedly does not crave or cling to these phenomena but fully experiences them with freedom and equanimity as they arise and pass away (Gowan, 2003, 143).⁸⁷ Understood in this way, nonattachment is equivalent to the metacognitive awareness and decentering processes described in the MBSR, MBCT, and ACT literatures (see Chapter IV).⁸⁸ Thus, despite the concept’s origination in ancient ascetic and monastic practices, nonattachment is compatible, in principle, with a full engagement in loving attachment relations (see Gowans, 2003, 135-147; Aronson, 2004, 151-198).

Second, I maintain that attachment and mindfulness processes converge in regards to loving and compassionate relations. I see three reasons why this is the case. First, as discussed in Chapter IV, the cultivation of lovingkindness and compassion are integral components of the Buddhist path. Lovingkindness (*metta*) is an antidote to one of the three “fires” that are said to tether human beings to *samsara*. The compassionate desire to end the suffering (*dukkha*) of others is also the highest ideal of the *Mahayana* bodhisattva path (Gethin, 1998, 228). As well, the *brahma-viharas* practices (“divine abodes”; lovingkindness, compassion, sympathetic joy, and equanimity) is one of the three main types of Buddhist meditation (Gombrich, 2005).

Finally, the Noble Eightfold Path (Fourth Noble Truth) identifies ethical conduct (*sila*) as one of

⁸⁷ According to the *Theravadin* Buddhist tradition, the nonattached intentions and behavior of an *arahant* do not produce the karmic fruits that anchor an individual to the endless cycle of death and rebirth (*samsara*). For discussion of traditional accounts of the experience of *arahants* after death, see Gethins, 1998; Gowans, 2003.

⁸⁸ In the Buddhist texts, nonattachment and mindfulness share functional similarities but are distinct in definition and role. In Chapter IV, I followed Gethin in defining mindfulness as “a kind of lucid sustaining of attention on the object of awareness, in which the mind is both aware of the object and, in some sense, aware that it is aware” (2015, 32). Interestingly, the definition of nonattachment presented here is similar to the “nonreactivity to inner experience” and “nonjudging of inner experience” mindfulness factors of the FFMQ (Baer et al., 2006). See Desbordes et al., 2015; Sahdra et al., 2016.

the three major categories of the Buddhist path, along with wisdom and concentration. These three categories function interdependently: cultivating wholesome actions and virtues, such as lovingkindness and compassion, leads to a clear conscience; which contributes to a still mind in meditation; which contributes to experiential insight (*vipassana*) into the insubstantial nature of self and reality (Gethin, 1998, 80-84).

Second, as I will discuss further in Chapter VI, many scholars have noted that traditional Buddhist practice places a great importance on positive social and communal interactions. These include *roshi/guru/teacher* attachment relationships, *Sangha* community relations, and communal rituals, and “taking refuge” in the Three Jewels of the Buddha, the *Dharma*, and the *Sangha* (e.g., Aronson, 2004; Sharf, 2015). As with ethical conduct, the positive mental states generated in these relationships are important contributors to gaining wisdom on the Buddhist path. Third and finally, as I detailed at length under Hypothesis #1, human attachment, bonding, and love are replete in the pre-modern Tibetan folk medicine and folk psychology models of parenting and infant development. *The Tibetan Art of Parenting* (2008) demonstrated how Tibetan parents and the extended family keep in constant physical and emotional contact with their children, and rituals record and cherish every milestone of a child’s development. Likewise, “Tashi and the Monk” (2015) showed how Lobsang Phuntsok and the house mothers’ loving and compassionate attachment relations with the children of Jhamtse Gatsal can help overcome the deficits of even the most traumatic of developmental histories.

I will present a developmental science model that integrates attachment, mentalization, and mindfulness processes under Hypothesis #3, below. Under Hypothesis #4, I will present recent research by psychologist Phillip Shaver that has discovered correlations between attachment styles and Buddhist nonattachment.

Mentalization and Mindfulness Convergences

Second, I contend that mentalization and mindfulness processes appear to converge in two ways: the representational nature of the mind and world, and the traditional psychoanalytic capacity of the observing function of the ego. First, the Buddhist philosophy/mindfulness literatures and Fonagy's conception of mentalization appear to agree that conscious experience is representational or constructed in nature. To briefly reiterate, the Buddhist philosophical tradition posits that conscious experience can be reduced to a collection of more fundamental psycho-physical elements called the five *khandhas* or "aggregates": sensory and bodily sensations, feelings (attraction, repulsion, or neutrality), perceptions, mental formations and habits, and conscious awareness (Gethin, 1998, 145-147; see Chapter IV).

When closely examined during meditative practice, we see that what we identify as our "self" is merely a succession of changing and conditioned mental and physical events that arise and pass away.⁸⁹ Included in these aggregates are "I-making" or "self-ing" processes (*ahaṃkāra*) that construct our basic sense of personhood and identity (Ganeri, 2007; cited in Thompson, 2015, 325). At a fundamental level, we just are this conditioned collection of mental and bodily elements, while still retaining a sense of agency and continuity of identity within it. No eternal, immutable, essential, substantial, or inherently-existing self or soul inheres behind, owns, or directs the flux and flow of experience (see Collins, 1982; Gethin, 1998; Gowans, 2003; Garfield, 2015).

From a completely different philosophical and therapeutic tradition, Fonagy also maintains that mentalization, conscious experiences, and our sense of self are representational

⁸⁹ As several scholars have noted, the Buddhist philosophy of the self has similarities with eighteenth-century Scottish philosopher David Hume's "bundle theory" of the self. See Collins, 1982; Kapstein, 2001; Ganeri, 2007.

processes (see Chapter III). The mind mediates our experiences of the inner and outer world by “re-presenting” reality. Our mental representations are always perspectival (from our individual subjective perspective) and fallibilistic (they can be wrong). They can thus be more or less accurate, more or less distorted, and more or less in accord with the representational perspectives of others (Allen et al., 2008, 2-4). Fonagy has presented a sophisticated model of how mentalization and the sense of self may develop through affective mirroring within secure parent-infant attachment bonds, the stages through which infant mentalization and self-development may pass, and the neurobiological structures that may underlie these processes (Fonagy et al., 2002; 2012).

The question of the metaphysical nature of the insubstantial self in Buddhist literatures is a complex and vexing philosophical issue. It would appear quite removed from Fonagy’s depiction of the mentalization of self and others and the five stages of a child’s development of an agential sense of self (*the physical/social agent, teleological agent, intentional agent, representational agent, and the autobiographical self*; see Chapter III). However, several Buddhist-oriented psychoanalysts have argued that the two traditions need not necessarily be in contradiction (e.g., Engler, 1986, 2003; Suler, 1993; Epstein, 1995, 2007; Rubin, 1996, 2009). As these scholars point out, most schools of Buddhist philosophy only deny an “ultimate” sense of an eternal and essential self or soul that inheres behind and “owns” the mental and bodily aggregates of experience. They do not deny the “conventional” sense of self, personhood, and agency we experience while acting and suffering in the world of *samsara*, nor the “I” we use as a label or term of reference in language and discourse.⁹⁰ As long as the concept of an essential self or soul is relinquished, then attachment theory, psychoanalysis, Fonagy’s mentalization theory

⁹⁰ In Buddhist philosophy, the traditional distinction between “ultimate” and “conventional” levels of truth is called the “two truths” theory. For discussion, see Collins, 1982; Gethin, 1998; and Garfield, 2015.

and mentalization-based therapy, and the Western scientific mindfulness literatures can be commended for the knowledge they discover about our conditioned and inessential neurobiological and psychological processes (see Thompson, 2015).⁹¹

Second, I posit that mentalization and mindfulness theories converge around the traditional psychoanalytic capacity of the “observing function of the ego.” In basic terms, the observing function is a “self-objectification” process, the ability of a subject to take itself as its own object (Freud, 1934, 80). After his shift to the structural model of the mind, Freud (1923) and later ego psychologists came to view the strengthening of the observing function as an important analytic goal that facilitated therapeutic change. Individuals with a strong observing function can simultaneously “rise above the self” to observe the conscious and unconscious operations (e.g., transference-related affects, drives, and defenses) that play out within the analytic relationship, while still experiencing them in full (Miller et al., 1965, 161). These observations can then be interpreted and “worked through” to produce insight and lasting psychological change.

The observing function was given its classic formulation by Sterba (1934), who held that analysis induces a “dissociative split” in the analysand’s ego. The “experiencing” part of the ego remains “bound” to transference-related affects and drives, while the “observing” ego is free from the transference and “in harmony with reality” (Sterba, 1934, 122). Through interpretation, the analyst “allies” with the observing ego to help the analysand observe and test reality. Later ego psychologists described a sequence through which the observing function develops and expanded the methods for its strengthening, such as through identification (e.g., Miller et al.,

⁹¹ For a fascinating synthesis of Buddhist philosophy, Western phenomenology, the neurosciences, and complexity theory, see the works of the late Francisco Varela (Varela, Thompson, Rosch, 1991) and Evan Thompson (2007, 2015). Both authors examine the neurobiological substrates of the “I-making” or “self-ing” psychological processes, while denying the existence of a substantial or essential self or soul.

1965). More recently, contemporary ego psychologists use the observing ego capacity to facilitate a “close process” examination of the analysand’s defenses in the present-moment transference relationship (e.g., Gray, 1994; Busch, 2014; for discussion, see Eagle, 2011).

The observing function of the ego clearly converges with the mindfulness and mentalization processes I have described in this dissertation. For example, numerous Buddhist-oriented psychoanalysts have linked mindfulness with the observing ego (e.g., Deikman, 1982; Engler, 1986; Suler, 1993; Epstein, 2007). The subject-object therapeutic split and the present-moment observation of drives and defenses within the analytic relationship appears to be quite similar to the capacity to closely observe and “decenter” or “defuse” (dis-identify) from the flux and flow of thoughts, emotions, and bodily sensations described in the mindfulness, MBSR, and ACT literatures (see Chapter IV).

Similarly, psychoanalytic theorist Morris Eagle (2011, 224) contends that mentalization and the observing function of the ego have a “strong family resemblance.” To my knowledge, Fonagy has not cited the observing ego literature as an influence. However, American and British ego psychology theories regarding the observing function of the ego were developing at the same time as British object relations theories about containment, metabolization, and internalization. Fonagy’s formulations about the development of the “reflective function” of mentalization through affective mirroring within secure parent-infant attachment bonds provides a sophisticated framework for understanding how the observing function may develop, how it may go awry through inadequate mirroring, and how the analyst may help the client “kick start” these processes again within the therapeutic relationship. Under Hypotheses #3 and #4 and the final section on “relational mindfulness MBT” below, I will discuss how mindfulness meditation

may strengthen or enhance mentalization/observing ego processes, as well as how attachment and mentalization dysfunctions can diminish mindfulness.

Attachment and Mentalization Convergences

Third, as I described in detail in Chapter III, the overlap between attachment and mentalization concepts, theories, and models are legion. Fonagy sees attachment as his own “secure base” (Fonagy, 2015, 355), and his mentalization formulations are steeped in Bowlby’s theorizing, Ainsworth’s and Main’s empirical assessment research, and Shaver’s research on adult attachment styles. Fonagy has also incorporated the latest attachment-related research from the developmental neurosciences into his mentalization theory and mentalization-based therapy models (Fonagy et al., 2002; Allen et al., 2008; Luyten et al., 2012).

In my view, the functional relations between the two processes are best captured by Fonagy’s recent depiction of the complex, contextual interrelations between attachment history, stress levels, and mentalization. As I discussed in Chapter III, Fonagy has proposed a “biobehavioral switch” model to describe these relations (see Fonagy et al., 2010; Luyten et al., 2012). Under this model, high levels of emotional arousal and stress “activate” the attachment system, which then “deactivate” mature levels of mentalization. When arousal levels increase beyond a certain “switch point,” the human mind and brain shift from “controlled” mentalizing associated with prefrontal cortex regions to “automatic” mentalizing generated in the posterior cortex and in subcortical regions like the amygdala. As described in Chapter III, controlled mentalizing is associated with skillful self- and affect regulation capacities, while automatic mentalizing is related to “prementalistic” modes of mentalization characteristic of affective and personality disorders (Fonagy et al., 2012, 19-33; Luyten et al., 2012, 44-45). Furthermore, an individual’s switch point “threshold,” the strength of the “switch” to automatic mentalizing, and

the “time to recovery” back to controlled mentalizing are all directly related to that individual’s attachment history and current attachment style (see Chapter III).

In my view, Fonagy’s biobehavioral switch model provides a powerful lens for understanding the complex relations between attachment and mentalization. As I will discuss under Hypothesis #4 below, I also contend that Fonagy’s model can be used to describe the functional relations between attachment history, stress levels, mentalization, and mindful metacognitive awareness.

Attachment, Mentalization, and Mindfulness Convergences

Fourth and finally, how might attachment, mentalization, and mindfulness meaningfully interrelate as a whole? I propose at least two possible ways (see Figure 7). First, I contend that the three constructs converge around psychologist Steven C. Hayes’s concept of “psychological flexibility.” As briefly introduced in Chapter IV, Hayes is the originator of the “third wave” CBT model of Acceptance and Commitment Therapy (ACT; Hayes et al., 2004, 2012). Hayes maintains that psychological flexibility is the central “core construct” of ACT. He defines psychological flexibility as “contacting the present moment as a conscious human being, fully and without needless defense—as it is and not as what it says it is—and persisting with or changing a behavior in the service of chosen values” (Hayes et al., 2012, 96-97). Hayes maintains psychological flexibility consists of six “normal” psychological processes that together, when in balance, comprise psychological health. When inverted, they constitute the psychopathological construct of “psychological inflexibility” or rigidity, which is the focus of ACT cognitive-behavioral and mindfulness-based treatments.

The six normal psychological processes that make up psychological flexibility are: 1) “experiential acceptance” (versus “experiential avoidance”), which is the capacity to engage with “unwanted private content” with curiosity and self-compassion while refraining from attempts at “suppression, control, or escape”; 2) “cognitive defusion” (vs. “cognitive fusion”), the ability to perceive thoughts, feelings, and memories as “ongoing experiences to be had” rather than “literal truths that organize the world”; 3) “self-as-context” (vs. “attachment to the conceptualized self”), the ability to observe the “I-here-nowness” of self-experience without over-attachment or over-identification; 4) “flexible attention to the present moment,” the capacity to stay focused on the present rather than “inflexibly attend” to the “remembered past or imagined future”; 5) “chosen values” (vs. “disruption of values”), the ability to “opt for...and connect with” one’s chosen, positive values when faced with a given situation; and finally, 6) “committed action” (vs. “inaction, impulsivity, or avoidant persistence”), the ability to “link specific actions” with one’s chosen values, in “successively larger patterns” of behavior (Hayes et al., 2012, 60-66).

In my view, the six processes of psychological flexibility capture many of the important aspects of the attachment, mentalization, and mindfulness models I have explicated in the last four chapters. For example, “experiential acceptance,” “cognitive defusion,” “self-as-context,” and “flexible attention to the present moment” processes converge with the metacognitive awareness cultivated in mindfulness meditation; the capacity to understand and “play with” the representational nature of mind developed in mentalization therapy; and the coherent, collaborative, and emotionally-engaged AAI transcripts produced by adults with a “secure-autonomous” attachment (see Chapters I, III, and IV). Likewise, “chosen values” and “committed action” processes are incorporated into the “ethical conduct” (right speech, right action, and right livelihood) spokes of the Noble Eightfold Path and cultivated in lovingkindness

meditation in MBSR, and are characteristic of the conduct of securely attached adults as measured by Mikulincer and Shaver's ECR social-personality research (Chapters II and III). "Chosen values" and "committed action" processes also bear a strong similarity to several of the traditional goals of therapeutic change in psychoanalysis, such as the development of identity, authenticity, and agency (e.g., see McWilliams, 1999; Gabbard, 2010).

Second, I contend that all three constructs converge around the dialectical, developmental interactions between individuation and relatedness. I draw this concept from the models of human development of the late Yale psychologist and psychoanalyst Sidney Blatt (2008), as well as from Beatrice Beebe's microinteraction studies (Beebe and Lachmann, 2002; discussed in Chapter II). In both Blatt's and Beebe's models, human life is presented as a function of two interrelated challenges: finding mutual and satisfying interpersonal relations, and finding a coherent and integrated sense of self (Blatt, 2008, 3). Both Blatt (self-definition vs. relatedness) and Beebe (self-regulation vs. mutual relation) maintain that both tasks are dialectically related. Development in self differentiation and integration leads to more mature levels of interpersonal interaction, while mature, reciprocal relations increase self-regulation and individuation. Dysfunctions in either process lead to vicious cycles of deterioration in the other, as well.

Under Blatt's and Beatrice's developmental models, the perplexing interrelations of attachment, mentalization, and mindfulness become clearer. The loving and empathically-attuned attachment and mentalization interactions experienced within secure attachment bonds (relatedness) cultivate the self-regulation capacities to mindfully approach, accept, and decenter from unwanted mental experience influenced by the past (individuation). This allows the individual to act with greater psychological flexibility in the present moment. Similarly, the greater metacognitive awareness capacities and familiarity with the representational nature of the

mind fostered by mindfulness meditation and mentalization-based therapy (individuation) cultivate more enriched and satisfying interpersonal relations (relatedness), on and off the cushion and the couch. Finally, as I will discuss in Chapter VI, I also contend that the social components of traditional Buddhist practice, such as *roshi/guru/teacher* attachment relationships, student Sangha relations, ethical cultivation, and communal rituals (relatedness) may be essential to progress in wisdom or experiential insight (*vipassana*) into the conditioned and insubstantial nature of self and mental phenomena (individuation), as well.

In my view, Hayes' construct of psychological flexibility and Blatt's model of the developmental interrelations of individuation and relatedness encapsulate a great number of the intersections between attachment, mentalization, and mindfulness processes. In addition, Blatt's model adds a developmental dimension that is lacking in Hayes' construct. I turn to the developmental interrelations between the three processes, next.

Hypothesis #3: Attachment, Mentalization and Mindfulness Are Developmentally-Interrelated Processes

Next, in Hypothesis #3 I propose that the reciprocal relations between attachment, mentalization, and mindfulness can be mapped within contemporary developmental neuroscience models (e.g., Hart, 2008, 2011; Schore, 2012; Siegel, 2012). As discussed earlier in this chapter, although the Buddhist tradition has a pre-modern model of human development rooted in Buddhist folk psychology and folk medicine, it does not have a modern theory of human development comparable to those of Western academic psychology (e.g., Engler, 2003; Aronson, 2004). In this section, I will attempt to fill this void, using the attachment, developmental

neuroscience, and mentalization models I have presented throughout the last four chapters of this dissertation.

In brief, I propose that secure parent-infant attachment bonds in the first years of life lay down neurodevelopmental, IWM, and affect regulation foundations in the infant that enable optimal mentalization and mindfulness processes to later develop. Inadequate parental caregiving leads to neural, cognitive, and affective dysregulations that impair subsequent mentalization and mindfulness development (see Hart, 2011). Each process thus has a different developmental timescale: attachment processes develop first, then mentalization, and finally mindfulness processes. The developmental level of each process reciprocally affects the levels of the other processes, as well. As a heuristic aid, these developmental progressions and interactions are depicted in Figure 8, below.

To explicate these relations, in this section I will briefly review Allan Schore's neurodevelopmental model of affect regulation, which I detailed in Chapter II. Then, I will present Susan Hart's neuroaffective psychology model of human development, which she draws from the research of Schore, Stern, Beebe, and others. Finally, I will discuss five implications of Schore's and Hart's models for the integration of attachment, mentalization, and mindfulness in this dissertation.

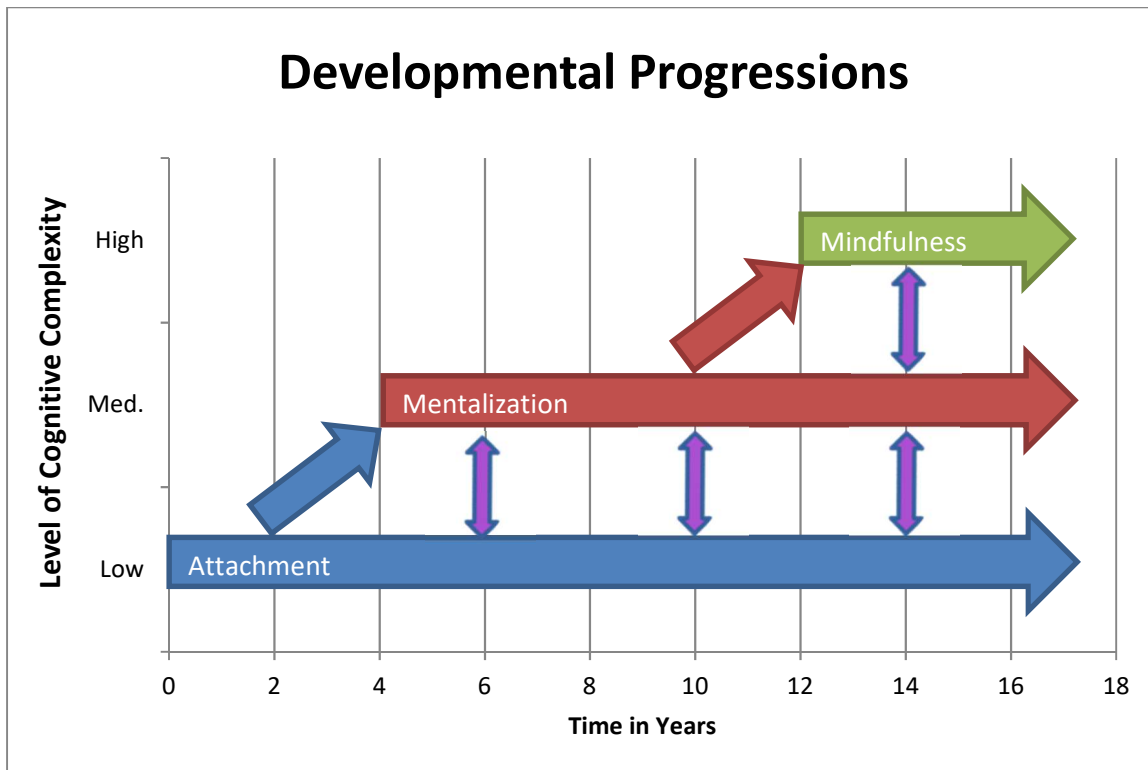


Figure 8. Developmental Progressions of Attachment, Mentalization, and Mindfulness

Review of Schore’s Neurodevelopmental Affect Regulation Model

First, I will briefly review UCLA researcher Allan Schore’s influential neurodevelopmental affect regulation model, described in Chapter II. Schore’s “regulation theory” (1994, 2003a, 2003b, 2012) focuses on the neurophysiological development of unconscious emotional processing centers located in right hemisphere of the infant’s brain. The infant’s unconscious right-brain processes synchronize and “communicate” with the mother’s unconscious right brain, creating an “intersubjective field” between mother and infant within the attachment bond. Moreover, dyadic mother-infant regulation processes (“interactive regulation”) facilitate the internalization of affect regulation abilities in the child (“autoregulation”) (Schore, 2014, 389). Countless affect-regulating, “rupture and repair” microinteractions between mother

and infant affect the developmental maturation of the infant's neural structures and are stored as implicit IWM's that influence the individual's ability to cope with stress throughout life.

Schore contends that the mutual affect regulation system is a necessity because of the physiological immaturity of the infant brain. Evidence indicates that the infant brain undergoes a massive "growth spurt" from the last trimester of pregnancy to the end of the third year. For the first two postnatal years, the infant's right hemisphere matures earlier and is "dominant" over the left. Early unconscious emotional processing is lateralized in the infant's right "limbic system," which is a vertical, hierarchically-ordered network of neural structures that mature at different points in time (Schore, 2013, 42-44). The subcortical limbic regions of the insula, amygdala, and hypothalamus mature first, from the third trimester to the second month of life. They are associated with the production and regulation of unconscious, automatic "survival system" functions, such as the autonomic nervous system (ANS) "fight, flight, and freeze" responses and the HPA stress system (see Porges, 2007).

Later in the first year, the two higher-level cortical structures of the limbic system mature: the anterior cingulate cortex (ACC) in the third to ninth months and the orbitofrontal cortex (OFC) in the ninth to eighteenth months (Schore, 2013, 41). The ACC is involved in social, play, and caregiving behaviors. The OFC enables executive-level, but still unconscious, coordination of emotional processing through the "top-down" inhibition and modulation of the lower limbic emotional systems (e.g., attachment needs, joy, fear, and anger). Finally, it is only with the maturational growth of the left hemisphere, beginning in the middle of the second year, that the child can begin to use language and higher-order reasoning processes (e.g., mentalization) to consciously represent, understand, and voluntarily modulate the right-brain

limbic system emotional processes. During the third year of life, the left hemisphere finally becomes dominant over the right (Schore, 2013, 44).

Schore asserts that the rapid, unconscious, and nonverbal affective processing of the right limbic system continues to operate automatically in human functioning throughout life, below the level of conscious processing. The right limbic processes of the mother “connect” with the right limbic system of the infant, creating the “intersubjective field” between mother and child. Moreover, because the infant’s ACC does not mature until the third to ninth month and the OFC until the tenth, the child does not have the physical capacity to regulate his/her own emotional states. If the mother cannot contain and modulate the child’s emotions, the child is vulnerable to the possibility of long-term neurological impairments in the limbic system due to the chronic presence of hyper-aroused, toxic emotional states like terror, rage, depression, and shame (Schore, 2014, 389).

Recently, Schore (2012) and other researchers (e.g., Hart, 2011; Montgomery, 2013; Hill, 2015) have hypothesized that anxious infant attachment may be a result of neurochemical dysregulations in the limbic system control of the *sympathetic* “fight or flight” system of the ANS; avoidant attachment from neurochemical dysregulations in the control of the *parasympathetic* “freeze” system; and disorganized attachment from decoupled *oscillations* between the two. Schore therefore contends that it is a physiological and psychological necessity that the mother functions as an adequate “prefrontal cortex” for the child: the securely-attached mother regulates the child’s neural and emotional development through the skillful use of her own properly-functioning communicative and affect regulation systems.

Susan Hart's Developmental Neuroaffective Psychology Model

Second, in two recent books (2005; 2011), German psychologist Susan Hart has provided a comprehensive synthesis of the recent developmental neuroscience and neuropsychology literatures. Hart calls her model “developmental neuroaffective psychology.” It is a blend of the conceptual and neuroscientific theories of Daniel Stern (1985, 2004), Allan Schore (1994; 2001a; 2001b; 2012), Daniel Siegel (2007; 2012), Colwyn Trevarthen (2005), Ed Tronick (2007), and Beatrice Beebe and colleagues (2001; 2014). Notably for this dissertation, Hart also incorporates Peter Fonagy’s clinical, developmental, and neuroscientific models of mentalization (Fonagy et al., 2002; Fonagy et al., 2012), as well as Paul MacLean’s (1990) and Jaak Panksepp’s (1998) material on the triune brain and evolutionary neuroscience (which I will discuss in Chapter VI). Hart’s analysis is useful for synthesizing the physiological, neuroscientific, and observational research on mother-infant dyadic interactions, as well as tracing their possible effects on normal and pathological neuroaffective development from childhood through adolescence.⁹²

In the third chapter of her recent book, *The Impact of Attachment* (2011; 66-123), Hart provides an insightful list of nine “psychodynamic levels of mental organization,” which range from early infancy through adolescent development. As her first five levels are directly informed by and track Schore’s stages of infant neurodevelopment during the first three years of life, I will focus on Hart’s final four levels.⁹³

⁹² See Hill (2014) for another useful synthesis of attachment theory, developmental science, and Fonagy’s mentalization theory. Konner (2010) also synthesizes many of the same theories.

⁹³ For reference, Hart’s first four stages are: 1) Age 0 to 2 months: The Domain of Being in the World; 2) Age 2- 6 months: Domain of Interactions and Protoconversations; 3) Age 12-18 months: Domain of Emergent Socialization; and 4) Age 1.5 to 2 years: Domain of Verbal and Cognitive Processing (Hart, 2011, 71-99).

5). Age 2 - 4 Years: Domain of the Narrative and Understanding Other Minds

First, Hart calls her fifth stage of neurodevelopment, “the domain of the narrative and understanding other minds,” which extends from age 2 to 4 (Hart, 2011, 99-106). As can be discerned from the title, this stage overlaps with the beginnings of Peter Fonagy’s stages of mentalization development, which I detailed in Chapter III. In terms of neurodevelopment, Hart follows Schore’s research (1994) to indicate that the child’s right OFC and left dorsolateral PFC (DLPFC) only begin to cooperate beginning in the third year of life, when significant “myelination” occurs in the corpus callosum. With this change, a new “transfer of dominance” occurs from the right to the left hemispheres (Hart, 2011, 105). Explicit narrative memories now begin to be stored in the left hemisphere, and are only accessible through the developing left brain language processes. The left brain explicit processes also begin to be able to inhibit the implicit, nonverbal right brain processes, as the left brain becomes dominant over the right.

Hart states that with these new neural growth patterns, a “qualitative shift” occurs in the child’s subjective world. Specifically, the mentalization processes that Fonagy chronicles start to develop (Fonagy’s *intentional* and *representational agent* stages). At this point, the child begins to be able to mentalize or understand the thoughts and emotions of self and others; to perceive him/herself as an “object” in the world that others can observe; and to predict other peoples’ behavior based on their emotions (Hart, 2011, 99). Hart states that this period also corresponds with Stern’s (1985) depiction of the narrative sense of self.

6). Age 4 - 7 Years: Domain of Symbolization

Next, Hart’s sixth stage is the “domain of symbolization,” extending from age 4 to 7 (Hart, 2011, 106-109). Hart states that during these years, the child’s PFC and corpus callosum

continue to organize and develop. Most importantly, the child's DLPFC begins a "prolonged period of growth" that extends through puberty (Hart, 2011, 106). Two major psychological functions develop during these years. First, the child develops a much more sophisticated capacity to understand, utilize, and interpret reality with symbols and narratives. The child can now use "self-speech" to control and moderate his/her behavior, and the child's moral understanding becomes more integrated. Second, the child's mentalization capacities expand and become more sophisticated (Fonagy's stage of *autobiographical selves*). The child develops a sense of "self-coherence" through time, organized in autobiographical narratives and memories. With the growing capacities of symbolic language and thought, the child can also now engage in highly complex social interactions, using advanced mentalization abilities to monitor the self and the other in real time.

7). Age 7 - 13 Years: Abstraction and the Domain of Logical Thinking

Hart's seventh stage is called "abstraction and the domain of logical thinking," from age 7 to 13 (Hart, 2011, 109-113). During these years, the PFC continues to grow and mature, and becomes much more connected and integrated with the parietal lobe, the site of gestures and movement. Due to these new connections, the child develops capacities for the "cognitive integration" of thoughts, gestures, symbols and language. For example, the child can "put feelings into words" or reflect upon emotions currently being experienced (Hart, 2011, 110). The child also first begins to be able to perform more advanced forms of abstract thinking and logic. The child can think hypothetically, understand probabilities, and "test" possibilities (Hart, 2011, 108). The child's working memory also expands dramatically during this period, which brings a new capacity to "stop and think" before reacting, thus regulating his/her emotions.

Finally, Hart states that “more mature forms of identity formation” also begin to emerge during these years (Hart, 2011, 109). The child’s advanced mentalization abilities merge with the new capacities for logical thought and cognitive and affective control. As a result, the child develops sophisticated abilities to reflect on his/her own social identity, to compare “actual versus ideal selves,” and to reflect upon ethical situations and behaviors with a more sophisticated sense of conscience.

8). Puberty: Domain of Individuation

Finally, Hart’s last stage of neurodevelopment is the “domain of individuation,” which begins in puberty (Hart, 2011, 113-122). During these years, dramatic new neurodevelopmental events occur in the teenage brain. The flooding of the brain with sex hormones at the beginning of puberty triggers, at first, an increase in synaptic growth. But this growth is then followed by a second major stage of neural and synaptic pruning (Hart, 2011, 114). Several neurodevelopmental and psychological changes occur in the adolescent brain. First, the adolescent experiences a change in the “dopamine balance” from the PFC to the limbic system. The adolescent’s limbic system becomes more reactive, triggering increases in emotional reactivity and instability. Second, grey matter density decreases dramatically in the adolescent’s PFC and temporal lobes. The cortex may lose up to half of its synapses during the teenage years. This often results in dramatic, sometimes permanent personality changes, as the left brain PFC may lose some of its dominance and control of the right brain emotional processes. Finally, the teenage years see a continuation of the development of the adolescent’s executive functions, such as attentional control; impulse inhibition (at least when the adolescent is not suffering from mood swings!); spatial and mathematical abilities; and deliberative reasoning, planning, problem-solving, and effortful control (Hart, 2011, 114-116).

Implications of the Schore and Hart Neurodevelopmental Models for this Dissertation

Finally, Schore's (2012) and Hart's (2011) neurodevelopmental models have important implications of for my integration of attachment, mentalization, and mindfulness processes. Most significantly, Schore's and Hart's neurodevelopmental models clearly indicate that attachment, mentalization, and mindfulness have different beginning points in human development (see Figure 8). I will make five points.

1). First, the neurodevelopmental and empirical data presented throughout Chapters I, II, III, and V indicate that attachment processes develop first. As we have seen, attachment functions likely begin to develop even before birth, during the final trimester. The neurobiological maturation and functioning of the limbic system in the first several years of life is profoundly influenced by the quality of the parent-infant attachment bond (Schore, 2012). Optimal parental attunement and mirroring of the child's needs fosters healthy affective, self, and attentional neurodevelopment. Inadequate parental attunement, as well as trauma and deprivation, result in profound impairments in neurophysiological development as well as the affect- and self-regulation and attention processes.

2). Second, Fonagy's (Fonagy et. al, 2012) and Hart's (2011) models demonstrate that mentalization capacities develop next. "Proto"-mentalization processes begin to develop by age two, with full theory of mind capacities to attribute mental states to self and others beginning by age four. The full-flowering of the extended, autobiographical self develops in children by age six, while the full complexity of mentalization capacities continues to develop through the late teens. Moreover, Fonagy's empirical and neurobiological evidence clearly indicates that the quality of the parent-infant bond, including the quality of the parent's mentalization of the

child's internal world, has a profound effect on the development of the child's mentalization capacity to understand the thoughts and feelings of self and others.

3). Third, as indicated in Figure 8, I hypothesize that mindful metacognitive awareness capacities only begin to develop by age twelve and into adolescence. I base this hypothesis on Hart's depiction of the time sequence of the neurocognitive development of the child's cognitive, attentional, and working memory processes. As I have just described, it is only during Hart's final two stages of neurodevelopment (i.e., Age 7 - 13 Years: Abstraction and the Domain of Logical Thinking; and Puberty: Domain of Individuation) that the child and adolescent develop left DLPFC-related, advanced executive functioning and working memory capacities. These include advanced capacities for attentional control, effortful control, affect regulation, impulse inhibition, and "cognitive integration" or the ability to observe and reflect on emotions in real time. As discussed in Chapter IV, all of these capacities are central to mindful metacognitive awareness and the ability to "decenter" from the flux and flow of experience in meditation.

4). Fourth, as Figure 8 indicates I also hypothesize that mindfulness capacities are affected by the quality of earlier attachment and mentalization neurodevelopment. As we have seen, the quality of parental attunement and mirroring of the child's needs has a profound effect on the child's affective, self, and attentional neurodevelopment in the first several years of life, as well as on the development of the child's mentalization capacity in years two through six. Because mindful metacognitive awareness capacities consist, in part, in the abilities to control attention, regulate affect, and inhibit impulses, the quality of mindfulness would be clearly related to the functioning of our attentional systems and emotions. If inadequate parental mirroring, abuse, or neglect were experienced by an individual in childhood, then the profound impairments in affective, self, and attentional neurodevelopment that ensue would have a

profound effect on that person's ability to decenter from and observe the flux and flow of thoughts and emotions.

5). Finally, the arrows in Figure 8 suggest that mindfulness-related practices can have an effect on mentalization and attachment processes, as well. The abundance of empirical and neurobiological data I examined in Chapter IV indicates that this is true. As was shown, mediational and meta-analytic studies indicate that mindfulness-based interventions are effective in reducing depression, anxiety, stress, and negative affect, and are effective treatments for a variety of psychological and health disorders (Khoury et al., 2013; Gu et al., 2015). Mindfulness-based interventions also increase levels of mindfulness and metacognitive awareness. Empirical and neuroscientific research on mindfulness meditation indicates that mindfulness training is effective in improving attentional control and emotion regulation capacities. It is associated with significant changes in the neural functioning and the physical structures of the brain regions involved with these two capacities (Hölzel et al., 2011; Tang, Hölzel, and Posner, 2015). The implication of this outcome, empirical, and neuroscientific research is that higher-level neocortical processes (associated with mindfulness), which develop later in the lifespan (i.e., adolescence), can have positive neurocognitive and psychological effects on other higher-level neocortical processes (mentalization, which overlaps neuro-cognitively with mindfulness) and lower-level subcortical processes (attachment) which develop earlier in life.

In Chapter VI, I will explore evolutionary neuroscience evidence that may help explain why this is the case.

Hypothesis #4: Deficits in Attachment and Mentalization Are Partial Causes of Difficulties Experienced in Mindfulness Meditation

Fourth, I maintain that attachment research on secure, insecure, and disorganized attachment styles and mentalization insights about the complex contextual interrelations between attachment, stress levels, and mentalization can be of significant benefit to mindfulness meditation practitioners. As I have noted above, traditional Buddhist psychology has highly sophisticated *pre-modern* models of human mental functioning drawn from traditional folk psychology. But it can benefit from drawing on *modern* models of psychology that are grounded in clinical, empirical, and neuroscientific research. Traditional Buddhist models also say very little about severe psychological disorders and pathological processes (Engler, 1986; Rubin, 1996; Aronson, 2004). The marriage of these three traditions may help explain common kinds of concentration or avoidance problems encountered in meditation, and the decompensation suffered by some practitioners when meditating.

Importantly, knowledge of attachment styles, projective identification and transference enactments, and the contextual interrelations between attachment, stress levels, and mentalization may also provide insight into several recent and highly visible cases in American Buddhist *Sanghas*: the sexual, substance abuse, and financial scandals perpetrated by Zen and Tibetan *Sangha* leaders (Rubin, 1996; Engler, 2003; Schoen, 2013; Oppenheimer, 2013). In these cases, Asian- and American-born Buddhist leaders were considered to be enlightened or spiritually advanced practitioners, yet still acted out. This presents serious challenges in

understanding how and why these leaders engaged in these behaviors, and how American Buddhist communities can make sure these scandals do not occur again.⁹⁴

To address these issues, I will first discuss previous theoretical analyses by psychoanalytic scholars that examine problems encountered in meditation by Western practitioners. Next, I will present recent empirical research by Phillip Shaver and his colleagues that investigates the interaction between mindfulness processes and secure and insecure attachment styles. Finally, I will hypothesize about the possible complex, contextual interrelations between attachment styles, stress levels, mentalization, and mindfulness.

Previous Theoretical Analyses of Psychological Problems Encountered in Meditation

First, since the 1980s many prominent Buddhist scholars and psychoanalysts have noted a variety of difficulties in meditating that are commonly experienced by American Buddhist practitioners. Some of these difficulties relate to challenges Americans face in growing up in our modern, individualistic society, and some relate to problems experienced by those with severe psychological disorders.

One of the first scholars to note these unique Western challenges was Harvard psychologist Jack Engler. Engler proposed this famous maxim: “you have to be somebody before you can be nobody” (1986, 31). By this, Engler meant that a certain level of psychological development has to occur before the kinds of “not-self” spiritual attainments discussed in the Buddhist literatures can be obtained. Using object relations models, Engler chronicled a number of psychotic and borderline-level “developmental arrests” that Western meditators may have that

⁹⁴ To be clear, it is only a small segment of the total number of Zen and Tibetan Buddhist leaders in American who have engaged in this behavior. See Oppenheimer, 2013; Schoen, 2013.

may need to be addressed in intensive psychotherapy, first. More recently, Engler amended his maxim based on criticism from other theorists (e.g., Epstein, 1995; Rubin, 1996). Engler now maintains that psychological and spiritual development may develop simultaneously, reaching interrelated yet distinct developmental levels (2003). Western practitioners may still need to seek out psychotherapy, but need not do this first before engaging in serious meditation practice.

Next, psychologist John Welwood introduced the concept of “spiritual bypassing.” Welwood noticed a tendency in 1970s American Buddhist communities to “use spiritual practice to bypass or avoid dealing with certain personal or emotional ‘unfinished business’” (2000, 11). For the spiritual seeker who was unmoored from the traditional American ideals of work, marriage, and family, the Buddhist monastic virtue of “giving up the self” held a certain appeal. However, Welwood states that these seekers “create a new ‘spiritual’ identity, which is actually an old dysfunctional identity—based on avoidance of unresolved psychological issues—repackaged in a new guise” (Welwood, 2000, 12). Welwood goes on to list a number of ways Westerners may tend to use spirituality for defensive purposes, including narcissism, grandiosity, and groupthink. Becoming aware of and addressing these defensive maneuvers may help the meditator progress along the spiritual path.

Buddhist scholar Harvey Aronson (2004) has also provided an insightful analysis of Western and Asian cultural, social, and religious values. Aronson’s analysis is especially valuable in chronicling the psychological differences between American Buddhists who grew up in an individualistic culture versus Asian practitioners who grew up in collectivistic cultures. According to Aronson, Western individualistic societies may produce a number of psychological problems that Asian Buddhist masters may not understand. As Aronson states, “There are a host of problems that individuals have that Buddhism was never designed to address, including the

whole spectrum of mental illness, from anxiety to depression to psychosis, and to the nuts and bolts of couples' issues" (cited in Loy, 2015, 26-27).

Finally, psychologist John Suler (1993) compiled an insightful list of ways that some Western meditators may pursue Buddhist forms of meditation "in the service of defense rather than self-awareness." As in Welwood's analysis, becoming aware of and addressing these problems may foster progress along the Buddhist path. Engler (2003) provided the following concise summary of Suler's (1993) list:

These include using practice to (1) pursue narcissistic perfection and invulnerability, (2) calm fears of individuation, (3) avoid responsibility and accountability, (4) rationalize fears of intimacy and closeness, (5) suppress unwanted or conflictual feelings, (6) avoid anger, self-assertion, and competitiveness by adopting a passive-dependent style, (7) satisfy super-ego needs for self-punishment for feelings of unworthiness, shame, or guilt, (8) escape from internal experience, (9) devalue reason, intellect, and reflection on one's motives and behavior, (10) substitute for grief and the need for mourning in the face of loss (Engler, 2003, 49-50).

Shaver's Nonattachment Scale (NAS) and Attachment Styles

The psychoanalytic and psychological analyses of Engler, Welwood, Aronson, and Suler provide valuable clinical insights into the possible psychodynamic reasons that bring Western individuals to Buddhist meditative practices and many of the problems in meditating that these Western practitioners may encounter. However, with the exception of Aronson (2004), these theorists do not appeal to the attachment, mentalization, or developmental science models I have discussed in the dissertation.

Under Hypothesis #2 of this chapter, I described fascinating intersections between mindfulness and attachment concepts and processes. Recently, several prominent attachment theorists have noticed functional similarities between Buddhist conceptions of

nonattachment/attachment and Western attachment theory conceptions of secure and insecure attachment styles (e.g., Aronson, 2004; Wallin, 2007). For example, the Buddhist description of attachment (*upadana*) as “stickiness,” clinging, and fixation is quite similar to Main’s insecure-preoccupied category of adult attachment. As discussed in Chapter I, this AT style is characterized by the perseveration of intense, negative memories and emotions related to past attachment care (Main et al., 1985). Likewise, the balanced presence, freedom, and equanimity of Buddhist nonattachment (*alobha*) appear similar to the coherence, emotional engagement, and metacognitive awareness found in secure-autonomous adults.

Fascinatingly, recent empirical research by noted attachment researcher Phillip Shaver (see Chapters I and II) appears to confirm these connections. Shaver and colleagues (Sahdra et al., 2010) developed the Nonattachment Scale (NAS) to examine the correlation between attachment style and Buddhist nonattachment. The NAS consists of thirty self-report items, which load on the single factor of nonattachment. Similar to my analysis above, Shaver operationalized nonattachment as “psychological flexibility (lack of fixation), nonreactivity (even mindedness), more quickly recovering from upsets, allowing, releasing, supporting others’ capacity to choose, and a sense of ease” (Sahdra et al., 2010, 118). Attachment style was measured with Shaver’s Experiences in Close Relationships scale (ECR; Shaver et al., 1998). As discussed in Chapter II, the ECR is a 36-item self-report measure that assesses experience in current adult romantic relations. It purports to tap into internal working models (IWMs) of self and others that shape our personalities and relations with others.

In confirmation of his hypotheses, Shaver’s results indicated that nonattachment was significantly inversely correlated with anxious ($r = -.55$) and avoidant ($r = -.26$) attachment styles (Sahdra et al., 2010, 122). Moreover, to test the NAS scale’s convergent and discriminant

validity Shaver correlated the NAS with a number of other prominent clinical, social, personality, and mindfulness scales. Shaver's results indicated that nonattachment was inversely correlated with dissociation and alexithymia ("disconnection from one's thoughts and feelings"). Nonattachment was positively correlated to "mindfulness, acceptance, nonreactivity, self-compassion, [and] autonomy," as well as "social connectedness, empathy, and generosity" (Shaver et al., 2010, 125; see article for details).

Mediation Research on Mindfulness and Insecure Attachment Styles

More recently, Shaver followed up this research by investigating the "cognitive-emotional patterns" that mediate the relationship between attachment styles and dispositional mindfulness (Caldwell and Shaver, 2013, 299). As discussed in Chapter II, Shaver's research (Mikulincer and Shaver, 2007a) indicates that anxious attachment is associated with a "hyperactivation" of the attachment system in order to coerce better parental or relationship partner attention and care. The hyperactivating style is mediated by "high levels of rumination and high levels of negative emotion" (Caldwell and Shaver, 2013, 300). By contrast, avoidant attachment is associated with a "deactivation" of the attachment system and a minimization of attachment needs in order to maintain connection with the parent or partner. Shaver's research shows that the deactivating style is mediated by "high levels of emotional suppression and limited understanding and clarity about emotional states" (Caldwell and Shaver, 2013, 300).

In the present study (Caldwell and Shaver, 2013), 93 adults completed questionnaires that measured adult attachment (using the ECR), rumination, thought suppression, attentional control, and mindfulness (using the MAAS; see Chapter IV). Shaver used correlational, regression, and mediational statistical analyses to examine the relationship between insecure attachment style and dispositional mindfulness. Shaver's results indicated that the hyperactivating anxious

attachment style predicted lower levels of mindfulness, and that their relationship was mediated by the cognitive-emotional variables of rumination and low attentional control. By contrast, the deactivating avoidant attachment style also predicted lower levels of mindfulness, but their relationship was mediated by the variables of thought suppression and low attentional control (Caldwell and Shaver, 2013, 299). In line with his attachment model (Mikulincer and Shaver, 2007a), Shaver interpreted the rumination, thought suppression, and low attentional control as unconscious defensive behaviors. Rumination upon their attachment relationships “helps” anxious attachment individuals to coerce better attention and care. Suppressing thoughts about the attachment relationship “helps” avoidant attachment persons maintain connection with a dismissing or unavailable partner.

Finally, one last issue for attachment researchers to examine is the correlation between disorganized attachment styles and meditation. To my knowledge, Shaver and other attachment researchers have not investigated this issue. According to anecdotal reports in the clinical literatures, some Buddhist practitioners decompensate when engaging in intensive meditation on multi-week or multi-month Buddhist retreats. For example, Brown University psychologist Willoughby Britton has studied adverse experiences reported by Western students of mindfulness meditation in her “Varieties of Contemplative Experiences Project.”⁹⁵ It may be that some of the decompensation experienced by these practitioners is associated with schizophrenia or other severe neurodevelopmental disorders. Some could be related to disorganized attachment styles, linked to early experiences of trauma and abuse.

⁹⁵ See <https://vimeo.com/brittonlab> ; <https://www.brown.edu/academics/contemplative-studies/research>

Implications of Shaver's Attachment and Mindfulness Research

I see two major implications of Shaver's research for my dissertation. First, Shaver's research provides the first empirical evidence to delineate the kinds of problems that anxious versus avoidant attachment individuals may experience during meditation. According to his model (Mikulincer and Shaver, 2007a), anxious attachment individuals may be more likely to experience an "uncontrollable stream" of negative memories, thoughts, and worries about their loved one's unavailability and their own helplessness and unlovability. This flood of negative thoughts and emotions would clearly interfere with mindful metacognitive awareness of the flow of conscious experience. By contrast, avoidant attachment individuals may be more likely to "defensively exclude" or suppress emotions, thoughts, fantasies, and memories during the meditation session, as these experiences risk activating the attachment system in the presence of a dismissing and unresponsive loved one (Mikulincer et al., 2009, 300). The suppression and exclusion of thoughts and emotions would interfere with mindful metacognitive awareness as well, as the identification and observation of experience is central to mindfulness.

As can be seen, rumination and thought suppression also appear to be related to basic, fundamental problems identified in the Buddhist meditative tradition. As I indicated in Chapter IV and under Hypothesis #2 above, rumination appears related to the sticky attachment to experience (*upadana*). Thought suppression appears related to the avoidance of or aversion to experience (*dosa*). The attachment research thus converges with the theoretical and phenomenological accounts of meditation problems in the ancient Buddhist literatures.

Moreover, Shaver interprets his results as indicating that attachment security and nonattachment are developmentally interrelated. Shaver states that the "background sense of security and safety" of securely-attached adults, which directly derives from repeated,

internalized experiences of sensitive attunement and care by our parents and by our loved ones today, “may make it easier for a person to experience the mindfulness and nonattachment that Buddhism champions” (Shaver et al., 2016, 237). Shaver’s research may comprise the first preliminary confirmation of the developmental interrelations of attachment, mentalization, and mindfulness I have proposed under Hypothesis #3, above. Buddhist “non-attachment” and Western psychology “attachment” are not antithetical constructs.

Yet second, Shaver’s research does present another interesting puzzle. If attachment security and mindfulness levels correlate positively, then what explains the recent cases of Zen and Tibetan Buddhist masters acting out in American Buddhist communities? If these masters, presumably, had extremely high levels of mindful metacognitive awareness, should they not also have high levels of attachment security, since these processes correlate and overlap? Moreover, as discussed in Chapter II Shaver’s ECR test measures attachment security in adult romantic relations. Would not adult romantic relations be as, if not more, intense and complex as master-student relations in the *Sangha*?

Hypothesis: The Complex, Contextual Interactions of Attachment, Stress Levels, Mentalization, and Mindfulness

I see at least two answers to this puzzle. First, it may be that the kinds of projective identification and transference enactment dynamics described by previous Buddhist psychoanalytic scholars (Engler, Welwood, Aronson, and Suler) and by Peter Fonagy (e.g., the reemergence of pre-mentalistic modes of functioning and the projection of “alien” self-states) can explain many of these acting-out problems. As we have seen, traditional Buddhist models of the mind say very little about these kinds of unconscious relational processes (Engler, 1986;

Rubin, 1996; Aronson, 2004). It may be an idealization of Buddhist masters and Buddhist models of the mind to presume that all Buddhist masters would be immune to and/or cognizant of these deep, unconscious relational forces (see Rubin, 1996; 2011; 2013).

In my view, the second answer to this conundrum may lie in Fonagy's analysis of the complex, contextual interrelations between attachment, stress levels, and mentalization. To reiterate, Fonagy has proposed a "biobehavioral switch" model to describe these relations (Fonagy et al., 2010; Luyten et al., 2012). High levels of emotional arousal and stress "activate" the attachment system, which then "deactivates" mature levels of mentalization. When arousal levels increase beyond a certain "switch point," the human mind and brain shift from controlled mentalizing associated with prefrontal cortex regions to automatic mentalizing generated in the posterior cortex and in subcortical regions. Controlled mentalizing is associated with skillful self- and affect regulation capacities; automatic mentalizing is related to "pre-mentalistic" modes of mentalization characteristic of affective and personality disorders (Fonagy et al., 2012; Luyten et al., 2012).

Furthermore, an individual's switch point "threshold," the strength of the "switch" to automatic mentalizing, and the "time to recovery" back to controlled mentalizing are all directly related to that individual's attachment history and current attachment style. Secure attachment individuals have a high switch point threshold, a moderate strength of switch to automatic mentalizing, and a fast recovery time to controlled mentalizing. Individuals with avoidant, anxious, and disorganized attachment styles have deficits in these three factors.

I hypothesize that Fonagy's analysis of attachment history, stress levels, and mentalization can be extended to include interrelations with mindfulness levels, as well. In my view, this is plausible because mentalization and mindfulness processes and neurocognitive

mechanisms overlap, such as in attentional control and affective regulation capacities. If this hypothesis is correct, then a similar (or possibly, the same) switch point would exist in regards to mindful metacognitive awareness capacities. Past a certain threshold, high levels of emotional arousal and stress would “activate” the attachment system of a Buddhist practitioner, causing a “deactivation” of high levels of metacognitive awareness. The practitioners’ mind and brain would then shift from controlled mentalizing and mindful awareness associated with prefrontal cortex regions to automatic mentalizing and mindful awareness generated in the posterior cortex and in subcortical regions. Pre-mentalistic modes of mentalization and mindfulness characteristic of affective and personality disorders would then emerge (psychic equivalence, pretend mode, and teleological mode).

Under this scenario, then, American Buddhist masters could indeed have exceptionally high levels of attachment security, mentalization, and mindfulness, under normal circumstances.⁹⁶ However, as human beings, it could be that they are not immune to the effects of severe stress or duress. Under high levels of stress, the thresholds of Buddhist masters’ switch points could be surpassed, and their minds and brains would then shift to automatic mentalization and mindfulness capacities and subcortical neural regions. These are associated with pre-mentalistic modes of functioning characteristic of affective and personality disorders, like borderline personality disorder. Alien self pathogenic projections and transference enactments with students may play a role here, as well. These pre-mentalistic modes of functioning and alien self-state projections and enactments could be behind the sexual abuse, substance abuse, and financial scandals of these Buddhist leaders (Rubin, 1996; Engler, 2003; Schoen, 2013; Oppenheimer, 2013).

⁹⁶ Alternatively, it could be that some of these Buddhist masters also had antisocial tendencies or psychopathic personality structures, as well.

Therefore, if my hypothesis is correct, an understanding of the complex, contextual relations between attachment styles, stress levels, mentalization, and mindfulness could be of significant benefit to Buddhist scholars and to American Buddhist communities. Of course, my hypothesis is speculative at this point. Extensive future clinical, empirical, neuroscientific and even longitudinal research would need to be conducted to verify my claims and to tease out the possible contextual interrelations between attachment style, stress levels, mentalization, and mindfulness processes. This hypothesis therefore awaits future verification.

Future Research: Could Mindfulness Meditation Be Integrated with Fonagy’s MBT to Form a “Relational Mindfulness MBT” Model of Therapy?

Finally, to close out this chapter I will discuss one area for future research and investigation: whether mindfulness meditation can be integrated with Fonagy’s mentalization-based therapy (MBT) model to form a “relational mindfulness MBT” model of therapy.⁹⁷ Although in this dissertation I have focused largely on developmental and evolutionary themes and constructs in order to integrate attachment, mentalization, and mindfulness, all three theories also contain rich models of clinical concepts, theories, and techniques. In recent years, a number of clinical theorists have developed models for integrating psychotherapy and mindfulness meditation.

Germer (2013) has provided a useful schema which maps out three different ways of integrating mindfulness meditation and psychotherapy: 1) “practicing therapist,” where therapists engage in their own mindfulness meditation practice to develop “therapeutic presence,” but do

⁹⁷ There are many complex and interesting methodological issues related to integrating different types and kinds of clinical and religious models. For a discussion of integrating different types of clinical psychology models, see Norcross (2005). For a schema regarding how to integrate Buddhist and psychology models, see Germer (2005, 2013). For a cultural model of the encounter between Buddhism and Western psychotherapy, see Helderman (2016).

not teach or engage in meditation with the client; 2) “mindfulness-informed psychotherapy,” where the therapist conducts psychotherapy from a framework informed by Buddhist and mindfulness theories; and 3) “mindfulness-based psychotherapy,” where therapists teach mindfulness meditation skills and practices to their clients that can be used in-session and/or practiced between therapy sessions (Germer, 2013, 22-24). More recently, several practitioners have added a fourth model: “relational mindfulness” (Surrey, 2005; Kramer, 2007). In distinction from the other three, relational mindfulness involves the *in vivo* practice of mindful awareness while interacting with the client. Clients and therapists cultivate awareness of their thoughts, feelings, and bodily sensations as they influence and are influenced by one another (Surrey, 2005).

I see interesting possibilities for future research in relating Fonagy’s mentalization-based therapy model to the relational mindfulness paradigm. As I discussed in Chapter III, Fonagy first developed his mentalization theories in the 1990s in the context of treatment for patients with borderline personality disorder. Over the last thirty years, Fonagy has developed mentalization-based therapy into a sophisticated and influential clinical research model that can treat a wide variety of affective, anxiety, somatic, and substance abuse disorders (see Fonagy et al., 2002; Allen et al., 2008; Fonagy et al., 2012).

Mentalization-based therapists seek to increase the client’s mentalization capacity within a secure and emotionally-attuned relationship, recapitulating a secure attachment relation between mother and child (Allen, Fonagy, and Bateman, 2008). Much like a parent, the therapist “keeps the client’s mind in mind,” by attuning to, reflecting upon, and articulating the client’s inner world back to the client. And like the infant, the client learns to “discover” his/her internal mental world by “finding it” in the mind of the therapist. Part of this process for MBT therapists,

therefore, is to be acutely aware of their internal subjective worlds so they can teach clients how to be aware of their own. Moreover, therapists must be aware of the projective identification and transference enactment processes that will inevitably occur within the analytic situation when working with borderline and other personality disorder clients.

In a recent article co-authored with Mary Target (2005b), Fonagy provided a particularly useful formulation of his theory of therapeutic action in mentalization-based therapy and what he calls the “three phases” of the analytic processes: intersubjective shifts, changes in mental processes, and changes in mental representations. In the first phase, Fonagy states that the mentalization-based therapist contains and “metabolizes” intense, pathogenic, unconscious projections of the client (the alien self). This temporarily stabilizes the client’s identity and mind. In the second phase, the client recovers the capacity to mentalize by internalizing the therapist’s ability to imagine and reflect upon the client’s mind. Finally, in the third phase the client and mentalization-based therapist revise the client’s early, distorted representations of self and others (Fonagy and Target, 2005b). Interestingly, Fonagy states that because he originally devised his models while working with borderline personality clients, much of his own emphases and research in mentalization theory and the mentalization-based therapy model have focused on the second phase: enhancing the mentalization capacities of the client. But once borderline clients can stabilize their minds and enhance their reflective function capacities, often through years of intensive psychodynamic therapy, Fonagy presumes that these clients will eventually revise their distorted IWMs within the analytic relationship.

Fonagy states that this proposed three-phased model of the analytic processes allows him to link his mentalization-based therapy model to other prominent contemporary research models of psychodynamic psychotherapy, such as the model of the late Sidney Blatt (2008). Blatt’s

model focuses attention on distortions within and revisions of the client's internal self and object representations (IWMs, in Bowlby's terms). Importantly for my dissertation, Fonagy and Blatt have co-authored a recent article (Luyten, Blatt, and Fonagy, 2013) where they argue that recent developments in second wave (traditional CBT) and third wave (mindfulness-based interventions) CBT brings cognitive therapy closer to the goals and theories of psychodynamic psychotherapy. Fonagy and Blatt classified the mindfulness-based interventions and Fonagy's mentalization-based therapy model as both working to change *mental processes*. Traditional CBT and Blatt's model of psychodynamic psychotherapy both work to change *mental content*. But if Fonagy's formulation (Fonagy and Target, 2005b) of the three-phases of the analytic process in mentalization-based therapy is correct, then Fonagy's mentalization-based therapy model might produce changes in both mental processes AND mental content.

If this formulation is correct, then I propose that future researchers could examine whether and to what extent increased levels of mindful metacognitive awareness in clients and therapists could facilitate client change in each of the three analytic phases. This could be cultivated within or outside the therapeutic relation, and by both or either of the therapist and client. Increased levels of metacognitive awareness might help facilitate therapist containment of client projections, the recovery of the client's mentalization capacities, and the revision of the client's mental representations or IWMs.

Specifically, future research could investigate whether relational mindfulness processes and techniques could enhance the therapist's and the client's attention to their own internal processes and to the interpersonal dynamics that flow within the analytic relationship. It could be that relational mindfulness techniques could enhance mentalization-based therapy therapists' ability to identify and "decenter from" the projective identification processes and transference

enactments that occur in the sessions, as well as to teach the client to do the same. If this is the case, then integrating mentalization-based therapy (MBT) theories and techniques with the relational mindfulness paradigm could constitute a new form of “relational mindfulness MBT.” A relational mindfulness MBT could then be compared and contrasted with another recent model that integrates mindfulness meditation with relational psychoanalysis, the “relational mindfulness” model recently put forth by the psychoanalyst and Buddhist practitioner, Jeremy Safran (Safran and Muran, 2000; Safran and Reading, 2008; Ryan et al., 2012). Once again, this hypothesis awaits further investigation.

As man advances in civilization, and small tribes are united into larger communities, the simplest reason would tell each individual that he ought to extend his social instincts and sympathies to all the members of the same nation, though personally unknown to him. This point being once reached, there is only an artificial barrier to prevent his sympathies extending to the men of all nations and races.

Charles Darwin, *The Descent of Man*, 1871, 100

CHAPTER VI:

ATTACHMENT, MENTALIZATION, AND MINDFULNESS IN NEUROBIOLOGICAL AND CULTURAL EVOLUTION: THE TRIUNE BRAIN, TRIUNE ETHICS, AND THE AXIAL AGE

In this chapter, I present the second component of my first central thesis of the dissertation: attachment, mentalization, and mindful awareness processes can be integrated together in contemporary models of neurobiological and cultural evolution. In doing so, I wade into major debates in religious studies, anthropology, moral psychology, and religion and psychological studies. As discussed in the Introduction, biological and cultural models of evolution have been the target of recent critiques by Buddhist scholars. These scholars have criticized the “cultural imperialism” of early modern European researchers who assigned Buddhism to lower levels of human religious and cultural evolution (McMahan, 2008; Lopez, 2008, 2012). However, in the last decade a number of religious studies researchers have published books about Buddhism that use the new extended evolutionary synthesis models of

biological and cultural evolution. These include scholars from the fields of the sociology of religion (Bellah, 2011), Buddhist studies (Hanson and Mendius, 2009; Barash, 2013) and religion and psychological studies (Gilbert and Choden, 2014).

As we have seen, the new extended evolutionary psychology models provide interdisciplinary and multileveled analyses of human functioning, from genes and neurons “all the way up” to sociological and cultural systems. Human beings are depicted as active agents who influence their social and ecological environments, but are also “embedded in and transformed by their genetic, epigenetic (molecular and cellular), behavioral, ecological, socio-cultural and cognitive-symbolic legacies” (Stotz, 2014, 1). As I will discuss in this chapter and the Conclusion, this new evolutionary understanding is synergistic with the communal-contextual emphases of Buddhist studies scholars on lived human experience in embodied and embedded beliefs, practices, and rituals (Sharf, 1995, 2005).

In my view, the new extended synthesis models of biological and cultural evolution provide a vastly more sophisticated and integrative view of human biological, psychological, sociocultural, and religious functioning than the early modern religious evolution models of the past. As I will argue in the Conclusion, perhaps this dissertation and these other studies can help create a new “evolutionary turn” in mindfulness meditation research and practice, to go along with the “relational turn” identified by Gleig (2012, 2016).

In this chapter, I will present four models of biological and cultural evolution that utilize many of the new extended synthesis theories and perspectives. First, I will describe neuro-ethologist Paul MacLean’s triune brain model (1990) of the evolution of the vertebrate forebrain. MacLean viewed the human mind as a hierarchical, multi-motivational system derived from three evolved strata in the brain. Then, I will discuss two contemporary theories that draw upon

MacLean's work: comparative psychologist Michael Tomasello's (2014a, 2014b) hypothesis on the evolution of human ultra-social cognitive capacities, and moral psychologist Darcia Narvaez's (2014) analysis of Triune ethics. Finally, I will examine sociologist Robert Bellah's (2011) recent research on religious evolution and the Axial Age era of religious belief and practice (ca. 800 to 200 B.C.E.). I will show how traditional Buddhism meets the criteria for Axial Age philosophies, ethics, and meditative practices. I will close the chapter by discussing how contemporary mindfulness meditation practices fit in with individualistic and secularistic trends in Western societies over the last several hundred years. The communal and ritualistic aspects of Buddhist practice can still be of benefit to mindfulness practitioners today.

Paul MacLean's Triune Brain Model

First, I will describe neuro-ethologist Paul MacLean's famous triune brain model (1990) of the evolution of the vertebrate forebrain, which he developed from the 1950s to the 1980s. As a framework to integrate attachment, mentalization, and mindfulness, MacLean's neuro-evolutionary model can be viewed as a different yet complementary perspective to the developmental neuroscience models I described in the previous chapters. Evolutionary and developmental models thus offer different levels of analysis of the same phenomenon, and do not need to be perceived, in principle, as contradictory.

MacLean (1913-2007) viewed the human mind and brain as a hierarchical, multi-motivational system derived from three evolved strata in the brain.⁹⁸ For heuristic purposes, MacLean labeled these strata the *reptilian brain*, the *paleo-mammalian brain*, and the *neo-mammalian brain*. Evidence suggests that each stratum resulted from "relatively long periods of

⁹⁸ For this section, I will rely on Narvaez's (2008, 2009) and Panksepp's (1998, 2002) analyses of MacLean's theories.

stability in vertebrate brain evolution” (Panksepp, 1998, 43; cited in Narvaez, 2009, 136). Two biological principles are central to MacLean’s model. First, MacLean contends that as each layer evolved, newer layers “reorganized” earlier layers while conserving “bio-behavioral markers” of the earlier stage. Put in simpler terms, each stratum continues to “dynamically interact” with and influence the functioning of the others. Second, ancient emotional systems, generated in the reptilian brain and paleo-mammalian brain and shared by all mammals, continue to underlie the “basic functioning” of the human brain and comprise much of the substance of our psychic lives. Our emotions are “ancient universal value structures” that organize mental experience and help guide us toward solutions to life’s challenges for survival. They give color, drive, and value to our experience, and have proven adaptive over the long course of human evolution (Panksepp and Biven, 2012, xi).

While prominent in the 1960s and 1970s, MacLean’s model has suffered from relative “neglect” in recent years (Panksepp, 2002, ix). Several researchers have critiqued MacLean’s neuroanatomical conception of the limbic system and his depiction of a phylogenetic and functional separation between the three strata (e.g., Ledoux, 1996; Pinker, 1997). However, other neuroscience researchers (e.g., Panksepp, 1998; Damasio, 1999; Cory and Gardner, 2002) have countered that some of these critiques are mischaracterizations of MacLean’s theories. They cite the conceptual and empirical breadth of MacLean’s big picture vision and his focus on the conservation of ancient mammalian affective systems as a continuing source of inspiration for their own work. Eminent animal neuroscience researcher Jaak Panksepp has called MacLean’s model “a superb theoretical structure, with abundant predictions, built upon a solid foundational body of data from an extensive study of the functional neural systems of our brethren species”

(Panksepp, 2002, x).⁹⁹ Although it is important to be cognizant of the critiques and to remember that MacLean's terms are heuristic labels, for the purposes of this dissertation his model offers a clear conceptualization of human brain organization and evolution and of basic "neuromental" functioning.

I will describe the three strata of MacLean's model in turn. The first layer is the "reptilian brain," which emerged some 500 million years ago. It is comprised of neural structures in the "extrapyramidal motor system," located in the brain stem and the lower limbic system (i.e., the basal ganglia) (Panksepp, 1998, 70). The reptilian brain is found in all vertebrates, including reptiles, birds, fish, and mammals (including humans). In MacLean's view, the reptilian brain is involved in primitive habitual, motor-oriented motivational systems that focus primarily on safety and survival. These include physiological homeostasis; sympathetic system "fight or flight" responses and parasympathetic system "freeze and faint" responses; predatory, territorial, and dominance/submission behavior; the exploratory systems (e.g., food-seeking); basic sexual "courtship displays" and reproduction; imitation and deception; and maintaining procedures and routines (Panksepp, 1998, 70; see Porges, 2011). The reptilian brain is "hardwired" deep in the oldest parts of the brain, and appears to be less susceptible to damage by environmental slights. As a result, the reptilian brain is the "default" setting that organisms revert to when under stress, injured, ill, or in danger, in order to enhance survival. As I will discuss later in the chapter, the reptilian brain is also associated with "in-group" survival instincts that promote the survival and safety of members of one's own group against outsiders (Narvaez, 2009, 143).

⁹⁹ For discussion of these debates, see Panksepp, 1998; Cory and Gardner, 2002.

The second layer is the “paleo-mammalian brain,” which began to evolve in mammals around 200 million years ago.¹⁰⁰ The paleo-mammalian brain is located along the hypothalamus- limbic system axis, which includes the hypothalamus, amygdala, hippocampus, and the preoptic and septal areas (Panksepp, 1998, 71). It is associated with the emergence of new “social engagement” motivations found in all mammalian species: infant care-seeking and attachment; maternal nursing and care-giving; social bonding and affiliation; and rough-and-tumble play. The paleo-mammalian brain also modulates and “increases the sophistication” of the primitive reptilian brain emotional systems, as seen in complex sexual display behaviors, new “fear-based” social emotions like separation distress, and complex social dominance hierarchies (Panksepp, 1998, 70). The paleo-mammalian brain is thus noteworthy for “lending a feeling tone” to mammalian experience and for constructing a basic sense of ongoing personal identity based in basic memory systems. It is the impetus for the emergence of mammalian parent-infant attachment relations and nurturing care, emotional resonance, “audiovocal” emotional signaling and communication, affiliative social bonding, and the social harmony and cooperation fostered in social play (Narvaez, 2008, 145).

As described in Chapters I to III, evolution “charged” parental attachment relations with the responsibility for the physiological and psychological development of the infant. The “environment of evolutionary adaptedness” of mammalian infants requires that they receive “nearly constant touch, frequent breastfeeding, immediate responsiveness to cries, and multiple (familiar) alloparents.” Otherwise, severe impairments in self- and affective regulation may ensue (Narvaez, 2008, 146). Moreover, the paleo-mammalian brain also transformed the reptilian brain system by locating safety, survival, and emotional satisfaction and reward primarily within

¹⁰⁰ It is now known that some paleo-mammalian brain systems are found in birds and a few reptiles (Butler and Hodos, 2005).

familial and social groups. Outside of attachment relations, dominance hierarchies are the major form of mammalian social organization, except perhaps in human relations, as we will see next. Finally, as will be discussed later in the chapter, the paleo-mammalian brain is responsible for the emergence of basic moral emotions like empathy and compassion.

Third and finally, the “neo-mammalian brain” refers to the “massively-expanded” and complex human neocortex, which began to emerge in our hominin ancestors approximately 2.5 million years ago. Recent evidence suggests that the “encephalization” of the hominin neocortex took place in multiple stages over this period, and may have resulted from the greater “cognitive demands” required to deal with the complex social life of large hominin groups (Gamble, Gowlett, and Dunbar, 2014). The latest and most complex stage of neocortical evolution has occurred, of course, in our own *Homo sapiens* species, who may have emerged in Africa some 100,000 to 200,000 years ago (Frith and Renfrew, 2008, 1935).

As we have seen in previous chapters, the human neocortex includes regions such as the orbitofrontal cortex; the ventral, dorsal, and medial PFC; and the parietal, temporal, and occipital cortices. The neo-mammalian brain is the site of the attentional systems; self and social cognition (including mentalization and theory of mind); perspective-taking and complex empathy; language and symbolic processing; mathematical and spatial reasoning; autobiographical memory; and executive functions like deliberative reasoning, planning, problem-solving, and effortful control (Sporns, 2011; Kandel et al., 2013).¹⁰¹ Although the neocortex exists in all mammalian species in varying levels of complexity and volume, the human neocortex is by far the most complex and the largest in ratio to the rest of the brain. It can be considered the “crowning glory of brain evolution” (Panksepp, 1998, 71).

¹⁰¹ Apes actually share some of these advanced neo-mammalian brain capacities (Tomasello and Herrmann, 2010; Tomasello, 2014a). I will discuss cognitive capacities unique to humans in the next section.

As has been described throughout Chapters II to V, neo-mammalian neocortex areas like the orbitofrontal cortex and the dorsal and ventral PFCs are connected to lower-level limbic system structures, creating integrated affect regulation networks (Hart, 2011; Schore 2012). In effect, the higher-level neo-mammalian neocortex structures have evolved to “down-regulate” or “put the brakes” on the more ancient, lower-level reptilian and paleo-mammalian neural structures associated with the generation of fear, aggression, sexuality, and attachment and social emotions. Such neocortical control allows the human organism to “stop and think” before reacting to the environment, and provides the mental space for higher-level psychological functions like reasoning, problem-solving, and effortful control (see Panksepp, 1998; Panksepp and Biven, 2012). But the effects of the powerful, ancient subcortical structures persist in the human mind, giving emotional color, drive, and value to our experience and remaining ready to override our higher reasoning processes when we are under stress or threat. As Panksepp states, “many of the complex information-processing potentials of the cortex are servants (often unconscious, automatized servants) to the dictates of the affective forces that ruled behavior prior to cortical evolution” (1998, 72).

Ontogeny Meets Phylogeny

Finally, as we have seen in Chapter II and V, the neurobiological maturation and functioning of the limbic system (amygdala, hypothalamus, hippocampus, insula, anterior cortex, and orbitofrontal cortex), associated with attachment-related emotions and behaviors, is profoundly influenced by the quality of the parent-infant attachment bond (Schore, 2012; Fonagy et al., 2012). Optimal or good enough parental sensitivity, attunement, and marked mirroring of the child’s mental, emotional, and physical needs helps foster healthy neurobiological maturation and the development of affect regulation, self-regulation, and attentional processes. Inadequate

parental sensitivity and attunement to the child's needs, as well as severe trauma and deprivation, result in dysregulations in the maturation of the neo-mammalian--paleo-mammalian--reptilian brain networks and impairments in the child's affect regulation, self-regulation, and attention processes.

Interestingly, Fonagy and other researchers have recently hypothesized that the profound developmental susceptibility of the human child to qualitative differences in the social and physical environment may serve an adaptive evolutionary purpose (Simpson and Belsky, 2008; Lyons-Ruth and Jacobvitz, 2008; Fonagy, Luyten, and Allison, 2015). It may be that the plasticity of a child's neurobiological and psychological development allows the child to adapt to a variety of social and physical environments, even the most severe such as war zones and areas ravaged by famine or blight. As discussed in Chapter I, insecure and disorganized attachment styles in these suboptimal situations may "make sense" as predictable patterns of behavior that enable the child to obtain an attenuated attachment bond to an adult that can ensure the child's physical and emotional survival.

Homo Sapiens as an Ultra-Social Species

Fascinatingly, the other four "great apes" appear to share with humans at least minimal levels of the majority of these advanced neo-mammalian brain cognitive capacities (Tomasello and Herrmann, 2010). However, recent primate, human infant development, and game theory research suggests that *Homo sapiens* have evolved an additional, unique set of cognitive capacities related to living collaboratively in sociocultural groups. For example, Dunbar and colleagues (Gamble, Gowlett, and Dunbar, 2014) have proposed the "social brain hypothesis," which contends that the complexity of large social group life spurred evolutionary increases in

mammalian brain size and cognition capacities. Dunbar has discovered a positive statistical correlation between the size of a mammalian species' social group and that species' neocortex size, mentalization capacities, and communication complexity. In addition, Tomasello and colleagues have examined the species-unique human capacity for "shared intentionality" (Tomasello et al., 2005; Tomasello, 2014b). In contrast with adult primates, human children as young as 2.5 years have the ability and motivation to create shared goals and experiences with others through joint attention, cooperative communication, and group collaboration.

Finally, Bowles and Gintis (2011) and Nowak and Highfield (2011) have used game theory and mathematical modelling to explore the evolutionary origins of human altruism. Their research suggests that altruistic behavior is motivated by genuine concern for the welfare of the members of one's group (instead of by self-interest), and that altruism likely evolved because cooperative groups out-competed non-cooperative groups for survival. Taken all together, this research indicates that we *Homo sapiens* are an ultra-social or super-cooperative species, compared with our primate cousins (Tomasello, 2014b; Nowak and Highfield, 2011).

Researchers have speculated how this evolution of advanced human ultra-sociality may have occurred. Michael Tomasello, a developmental and comparative psychologist at the Max Planck Institute for Evolutionary Anthropology, has presented one compelling, speculative account. He calls this the Interdependence Hypothesis (Tomasello et al., 2012; Tomasello, 2014a, 2014b). In his account, Tomasello first describes the social cognition capacities of the higher primates, from which hominins diverged. The great apes are a highly social species, and show sophisticated "proto" levels of inferential reasoning, understanding of intentionality, communication, group coordination, and imitative learning (Tomasello 2014a). However, Tomasello argues that primate group sociality is a zero-sum game: individuals form coalitions to

compete for limited resources, but the cooperation is geared toward individual personal gain (“cooperation-for-competition relationships”) (Tomasello, 2014b, 193).

From this baseline, Tomasello proposes that our hominin ancestors then evolved additional ultra-social, shared intentionality capacities, in two stages. The first stage may have culminated 400,000 years ago with the emergence of *Homo heidelbergensis* (Tomasello 2014a, 36). Tomasello hypothesizes that changes in ecological conditions (i.e., food scarcity) may have forced early hominins to become “obligate collaborative foragers.” Essentially, hominins may have evolved a new social-cognitive “suite” of “joint intentionality” capacities like joint attention, cooperative communication, and complex group collaboration in order to acquire the food necessary to survive. Aspects of this new lifeway of interdependence may have included “dividing the spoils” of the hunt justly and fairly; feelings of “commitments and obligations” toward partners; punishing free-loaders (cheaters); and a genuinely mutualistic, prosocial concern for the welfare of the partners upon whom one depended (Tomasello 2014b, 188-190).

The second stage of shared intentionality evolution may have begun with the emergence of *Homo sapiens sapiens*, or modern humans, upwards of 200,000 years ago (Tomasello 2014a, 84). Tomasello hypothesizes that population growth and intense competition with other human tribal groups may have spurred the *ad hoc* collaboration of the first stage to be “scaled up” into interdependent collaboration on the sociocultural group level (Tomasello et al., 2012, 673). At this time, *Homo sapiens* evolved a further set of species-unique, psychological and motivational capacities termed “collective intentionality,” which is characterized by “group-mindedness” and the creation of “cultural conventions, norms, and institutions.” Key features of collective intentionality include group membership and identification; strong in-group/out-group biases; conformity to social norms; and the internalization of group moral codes, enforced through

shame and guilt (Tomasello 2014b, 191-193). With these new socio-cognitive capacities, Tomasello argues that all the ingredients were present in our *Homo sapiens* ancestors for group selection pressures to eventually produce the “modern human behaviors” of abstract reasoning, recursive mentalization, symbolic language, cultural institutions, social organization, morality, and pedagogical learning we are familiar with today (see Tomasello 2008; 2014a).

In conclusion, Tomasello acknowledges that his Interdependence Hypothesis is necessarily speculative. The archaeological and anthropological records are “far from definitive” on these issues, and in some sense his account can be considered an “evolutionary fairy tale” (Tomasello 2011, 39). However, Tomasello argues that his model does have the advantage of incorporating recent experimental and neuroscientific data on adult primate and early human infant cognition and development. This augments the more typical “stones and bones” and hunter-gatherer ethnography approaches of most archaeological and anthropological models today. Tomasello’s model also presents an interesting “first blush” account of the evolution of human moral agency, which I will explore next in more detail.

Narvaez’s Triune Ethics and Moral Development Theories

The last major theory of neurobiological evolution that I will present is the moral development model of the Notre Dame moral psychologist, Darcia Narvaez. In a series of works (Narvaez, 2008, 2014, 2015, 2016; Narvaez and Bock, 2014), Narvaez has applied the attachment theory, developmental science, and evolutionary neuroscience material I have described in this dissertation to the disciplines of virtue theory, moral psychology, and moral development. Narvaez has explicitly based her model of human moral development on MacLean’s triune brain research. She calls her model the Triune Ethics Theory (Narvaez, 2008,

2009). Narvaez's broader project also includes a social-cognitive model of character development (Adaptive Ethical Expertise; Narvaez and Lapsley, 2009) and a program for moral education in schools (Integrative Ethical Education; Narvaez, 2006). Most recently, Narvaez has examined how attachment theory, developmental science, and anthropological models of early human hunter-gatherer childrearing practices can inform current caregiving practices and public health policy in the United States (Narvaez et al., 2013; 2014).

In her Triune Ethics model, Narvaez makes the fascinating claim that the modern Western, Hobbesian understanding of the human "state of nature" as savage, selfish, competitive, greedy, and violent is wrong. Contemporary anthropological studies indicate that hunter-gatherer cultures, at least those extant today, are much more egalitarian, mutualistic, and "symbiotic" with the environment than previously realized (e.g., Boehm, 1999; Fry, 2013; Narvaez et al., 2014). In order to truly understand universal or species-typical aspects of human moral nature and moral development, moral philosophers and psychologists need to take into account the evolutionary and developmental "baselines" of human existence. To do that, we need to understand "humanity's evolutionary story." Narvaez lists three major features of this story, which succinctly capture many of the main themes of this dissertation:

First, it is important to recall that humans are mammals—social mammals—and so we must understand that mammalian nature and how to nurture its moral potential. Second, we must understand that humans have a set of propensities and capacities available at birth, which are significantly shaped peri- and postnatally by the caregiving environment. Third, we must understand that children have basic evolved needs as part of their animal, mammalian, and human nature, which when not met sets a child up for atypical development in light of evolution (Narvaez, 2015, 20).

Narvaez's research draws on many of the major theories that I have explicated in this dissertation: the attachment theories of Bowlby and Ainsworth; the intersubjectivity research of Schore, Stern, and Trevarthen; the epigenetics research of Hofer and Meaney; and the

evolutionary neuroscience models of MacLean and Panksepp (of note, Narvaez does not discuss Fonagy's theories in detail). Where Narvaez's Triune Ethics Theory breaks new ground is in placing these developmental and evolutionary science models within the context of anthropological and moral psychological research. Her basic contention is that early childrearing experiences not only have a major effect on the development of a child's cognitive and affect regulation capacities, but on the development of a child's "moral sensibilities" and empathy for others, as well (Narvaez, 2013, 112).

Two aspects of Narvaez's Triune Ethics and moral development models are especially relevant for my dissertation: her description of how human morality evolved within early, species-typical hunter-gatherer caregiving environments, termed the "evolved developmental niche"; and how caregiving concordance with or deviations from the evolved developmental niche results in three characteristic dispositional "ethics" that shape the child's moral values, decision-making, and behavior (Triune Ethics). I will describe the evolved developmental niche and the three ethics, in turn.

The Human Evolved Developmental Niche

First, Narvaez's moral development model depicts social characteristics of early hunter-gatherer cultures and the evolved developmental niche of early caregiving environments. Narvaez states that according to the paleo-anthropological record, 99% of the history of our *Homo* genus was spent in "small band hunter-gatherer" groups, before the invention of agriculture 10,000 years ago (Narvaez, 2015, 21). As indicated above, recent anthropology research suggests that small band hunter-gatherer groups were highly communal and egalitarian

in nature (Fry, 2013; Narvaez et al., 2014).¹⁰² In contrast to modern urban life, these hunter-gatherer groups appear to have been characterized by: 1) “high social embeddedness (mostly with kin)” rather than physical and social isolation; 2) “virtuous” rather than “vicious” role models that advocated prosocial values; 3) “socially purposeful” rather than “self-oriented” lifestyles; 4) “deep social enjoyment,” including laughing, singing, dancing, and participating in religious rituals; 5) “extensive freedom, leisure, and space (1 person per 4 or 8 miles)”; 6) “egalitarian” rather than “hierarchical” social structures; and 7) “partnership with the natural world” rather than its “exploitation” (Narvaez, 2013, 121-122).

Narvaez contends that a further component of these early small band hunter-gatherer cultures was a species-typical parental caregiving environment, termed the human evolved developmental niche. The evolved developmental niche is an “intensification” of social mammalian caregiving environments that emerged over 30 million years ago. It consists of sets of parental childrearing practices and interactions that coordinate and “co-develop” human infants’ unique biopsychosocial potentials. Narvaez argues that the evolved developmental niche is a “key inheritance” of human evolution that “provides a cultural commons for the development of human nature” and morality (Narvaez, 2015, 23).

From the anthropological record and recent studies of extant hunter gatherer tribes, Narvaez identifies six key features of the human evolved developmental niche: 1) a “soothing” perinatal and birthing experience, with time alone, communal support, and immediate mother-infant bonding; 2) an extended period of breastfeeding, lasting from two to five years; 3)

¹⁰² Anthropologist Christopher Boehm (1999) has proposed an influential thesis of “reverse dominance hierarchies” in early small band hunter gatherer groups. While most primate social organizations are characterized by “dominance hierarchies,” adult males in small band hunter gatherer groups “form a general coalition to prevent any one of their number, alone or with a few allies, from dominating the others” (Bellah, 2011, 176). Sociologist Robert Bellah, who I discuss below, states, “Boehm insists that human egalitarianism does not come easily, that it is not the absence of the disposition to dominate; rather, it requires hard, sometimes aggressive, work to keep potential upstarts from dominating the rest. Egalitarianism is a form of dominance, the dominance of what Rousseau would have called the general will over the will of each” (Bellah, 2011, 177).

constant, positive “handling, carrying, and touching”; 4) responsive and sensitive attentiveness to the child’s “communications, reactions, and needs”; 5) “self-directed social play” with the child’s parents, siblings, and peers; and 6) a “positive social climate” characterized by “high social support and social embeddedness” in the family and community (Narvaez, 2015, 24-25).

As is clearly evident, these characteristics of the evolved developmental niche encapsulate many of the qualities of positive attachment bonding, maternal responsiveness, and affective mirroring that I have discussed over the last five chapters. Narvaez states that the presence of these six qualities in caregiving help foster optimal neurobiological regulation and development, affect regulation skills, and a “prosocial” attitude toward others (2015, 26). Fascinatingly, the reader may note that these six qualities also mirror many of the characteristics of the traditional Tibetan models of parenting and human development chronicled in *The Tibetan Art of Parenting* (2008) and the interactions between the children and staff shown in “Tashi and the Monk,” discussed in Chapter V.

Triune Ethics Theory

Second, Narvaez has drawn on the evolved developmental niche literatures and MacLean’s (1990) triune brain research to formulate her own model of moral psychology, which she calls Triune Ethics Theory (Narvaez, 2008, 2009, 2013, 2014). The basic contention of her model is that early experiences and interactions with caregivers affect the development of an individual’s “moral sensibilities” and the capacity to experience empathy for others. Early caregiving and communal experiences consistent with the evolved developmental niche cultivate a prosocial morality and empathy for others. Caregiving inconsistent with the evolved developmental niche fosters a fearful and protectionist morality and deficits in empathy.

Of importance for my dissertation, Narvaez bases the neurobiological components of her model on MacLean's (1990) triune brain research and Schore's (2012) affect regulation model. Moral sensibilities and empathy are grounded in more basic emotional and cognitive systems, which derive from the three evolved strata in the brain: the reptilian brain; the paleo-mammalian brain; and the neo-mammalian brain. Positive parental caregiving promotes healthy maturation of the child's neo-mammalian--paleo-mammalian--reptilian brain networks and the development of affect regulation, self-regulation, and attentional processes. Inadequate parental caregiving results in dysregulations in the neo-mammalian--paleo-mammalian--reptilian brain networks and impairments in self- and affect regulation and attention.

Fascinatingly, Narvaez takes a further step by contending that the quality of early attachment experiences and interactions with the caregiver help form one of three basic, "neurobiologically-rooted orientations or central motives that drive moral functioning" (Narvaez, 2013, 113). Narvaez calls these orientations "ethics," which she defines as "a particular set of activated emotion and physiological systems that influence cognition and action." Each of these three ethics is grounded in one of the three strata of the triune brain. As with triune brain dynamics in general, ethics can be dispositional in nature or triggered by the situational context. In each case, the ethic in ascendance "influences the prioritization of values" in a given situation, and "trumps" the values of the other ethics (Narvaez, 2015, 113). The three strata and three ethics can be linked in different combinations, as well, producing different variations of the dominant operating ethic. I will briefly describe each of the three ethics, in turn. For Narvaez's helpful visual representation of the three ethics and their combinations, see Figure 9, below.

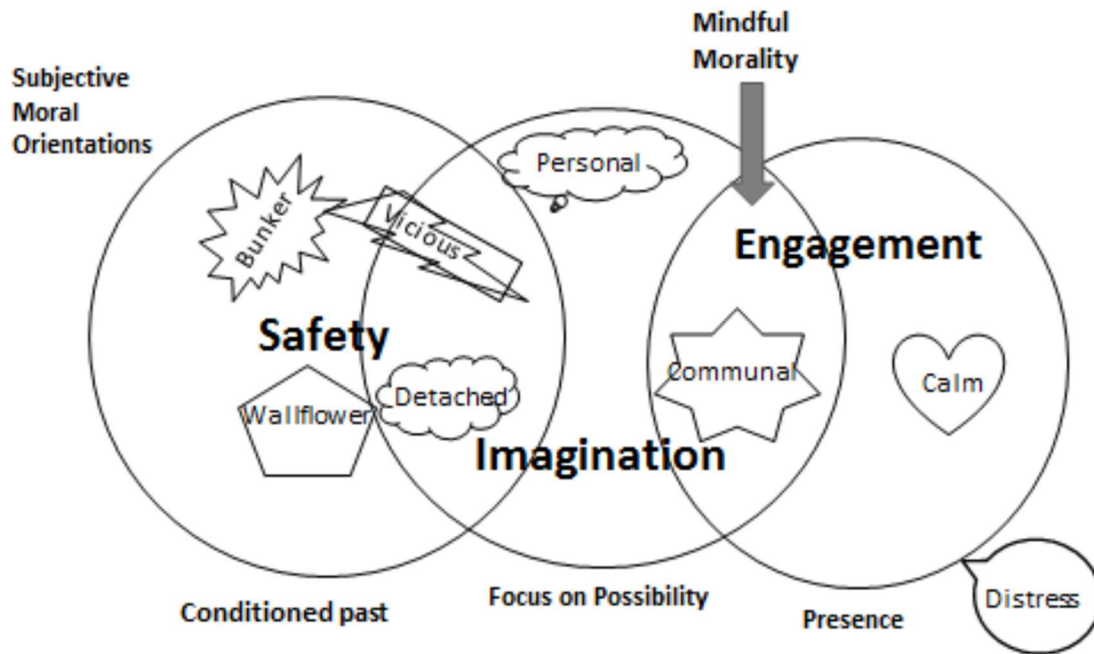


Figure 9. Narvaez’s Safety, Engagement, and Imagination Ethics ¹⁰³

The Safety Ethic

Narvaez’s first ethic is the “safety ethic,” which derives from the primitive reptilian brain structures in the brain. As discussed at the beginning of this chapter, the reptilian brain is comprised of neural structures in the “extrapyramidal motor system,” located in the brain stem and the lower limbic system. It is related to basic safety and survival instincts of an organism, and is associated with “territoriality, imitation, deception, struggles for power, maintenance of routine and following precedent” (Narvaez, 2013, 114-115). When an individual is in danger or under threat, the safety ethic is triggered and “takes charge” to ensure safety and survival.

¹⁰³ Reproduced from Narvaez (2013, 116): “Figure 1. Graphic of Different Moral Mindsets and their Subtypes.” Darcia Narvaez, “The Individual, Relational, and Social Neurobiological Development of Morality.” In Marina Riemsdagh, Roger Burggraeve, Jozef Corveleyn and Axel Liégeois, eds., *After You!: Dialogical Ethics and the Pastoral Counselling Process*, 109-135 (Walpole, MA: Uitgeverij Peeters Publishers, 2013).

However, while the safety ethic was adaptive for our small band hunter-gatherer ancestors when facing predators or competing groups, it is “not the best long-term orientation for moral functioning” because of its self-centered, self-protective morality grounded in survival. As ample social psychology research attests, when individuals fear for their safety or even feel their personal beliefs are under threat, they become “less responsive to helping others and more focused on self-preservation” (Narvaez, 2013, 115). If the individual has suffered trauma or chronically inadequate parental care, the safety ethic will come to “dominate” the personality. At the group level, the safety ethic can also become the dominant norm when the group faces competition or constant change, and can even drive “tribalism, rivalry, and mob behavior” (Narvaez, 2009, 143).

Fascinatingly, Narvaez contends that trauma, neglect, and chronically inadequate caregiving can produce two different safety ethics patterns. The first pattern is associated with the sympathetic (fight) autonomic nervous system (see Schore, 2012). It is an “undercontrolled” dispositional ethic geared toward aggression, resistance, and self-protection. Narvaez terms this the “bunker mindset” (Narvaez, 2013, 115). The second pattern is associated with the parasympathetic (freeze or faint) autonomic nervous system. It is an “overcontrolled” ethic oriented toward freezing, submission, depression, and withdrawal. Narvaez calls this the “wallflower mindset.” Depending on the context, an individual can be controlled by one or the other mindsets, or oscillate between the two. As is evident, Narvaez’s descriptions of the bunker and wallflower mindsets have clear parallels with the anxious, avoidant, and disorganized attachment styles, discussed in Chapter II.

The Engagement Ethic

Narvaez's second ethic is the "engagement ethic," which derives from the paleo-mammalian neural structures. As discussed above, the paleo-mammalian brain is located along the hypothalamus-limbic system axis, and includes the hypothalamus, amygdala, and hippocampus. It is associated with the "social engagement" motivations: infant attachment, maternal caregiving, social affiliation, and rough-and-tumble play. Narvaez refers to the engagement ethic as the "harmony morality." It is related to intimacy, harmony, love, care, and attachment in the present moment. When operating out of the engagement ethic, an individual experiences "full presence in the flow of life, connecting to others in the moment" (Narvaez, 2013, 116). Narvaez even speculates that the engagement ethic is associated with spiritual "elevation," worship, and "community feeling."

Narvaez follows Schore's (2012) neurobiological affect regulation model to describe how the engagement ethic is dependent for its development on the quality of parental caregiving in the parent-infant attachment bond. Optimal or "good enough" parental sensitivity, attunement, and "marked mirroring" of the child's mental, emotional, and physical needs helps foster healthy neurobiological maturation of the child's right-brain limbic system and the development of self- and affect regulation processes. In terms of morality, the marked mirroring and dyadic "mutual regulation" experienced with the caregiver develops a "prosocial" attitude in individuals, "emotional presence" in the here and now, and the capacity to "resonate" with others and to empathize with their feelings. Narvaez refers to this as "calm engagement" (Narvaez, 2013, 117).

Inadequate parental sensitivity and attunement to the child's needs, as well as severe trauma and neglect, result in dysregulations in the maturation of the child's right-brain limbic system and impairments in self- and affect regulation. Narvaez states this can lead to

“engagement distress,” which is “a co-dependent reflexive orientation to social functioning.” Cognition in these individuals is undermined, and impairments are experienced in emotional presence and the ability to resonate and empathize with others (Narvaez, 2013, 117).

The Imagination Ethic

Finally, Narvaez’s third ethic is the “imagination ethic.” It derives from the neo-mammalian neural structures of the human neocortex, including the orbitofrontal cortex and the prefrontal, parietal, temporal, and occipital cortices. As discussed above, the neo-mammalian brain is involved with the attentional systems, mentalization, perspective-taking and empathy, language, autobiographical memory, and the executive functions like reasoning, planning, foreseeing consequences, and problem-solving. The neocortex is connected to lower-level limbic system structures, and has evolved to “down-regulate” or “put the brakes” on the more ancient reptilian brain and paleo-mammalian structures (Panksepp, 1998; Schore 2012). Narvaez contends that the neo-mammalian structures “allow for a broader view of action possibilities” (Narvaez, 2015, 117). When the neo-mammalian brain engages with or disengages from the other two neural structures, three different imagination ethics are formed.

First, Narvaez maintains that when the neo-mammalian imagination ethic processes are isolated or disengaged from both the “emotional presence” processes of the paleo-mammalian brain and the safety and protection processes of the reptilian brain, this forms the “detached imagination” ethic. Detached imagination is an “intellectualized morality” dominated by left-brain processes of logic, rationality, and abstraction (Narvaez, 2013, 118). In this mindset, individuals see social and moral problems as abstracted, “discrete pieces” to be solved by logic and reason. However, moral reasoning soon “degrades into a set of procedures,” leaving out the “rich context” of real social and moral problems. When the detached imagination is “used for

personal gain without thinking of others,” Narvaez refers to this as “personal imagination.”

When detached imagination operates at the group cultural level, we see bureaucratization and the exploitation of the environment and other peoples and countries for economic gain, without regard for the moral or ecological consequences (Narvaez, 2013, 125-126).

Second, Narvaez contends that when the neo-mammalian imagination ethic processes are joined to the reptilian brain safety ethic “bunker mindset” processes, this forms the “vicious imagination” ethic. Under this mindset, the left-brain logical processes dominate but are “fueled” by the primitive reptilian brain emotions of fear, anger, and rage. In effect, we see a “functionally reptilian organism armed with the cunning of the neocortical brain”; in other words, a psychopath (Narvaez, 2013, 118; quoting Lewis, Amini, and Lannon, 2000, 218). Such individuals are ruthless, “ego-centered,” and “driven by a clever seeking of power.” They are incapable of “resonating emotionally” with others, except for the purposes of manipulation and control. At the societal level, we see historical examples of concentration camps, ethnic cleansings, and eugenics projects targeting religious and ethnic minorities, political opponents, the disabled and infirm, and the mentally ill (Narvaez, 2013, 124-125).

Finally, Narvaez states that when the neo-mammalian imagination ethic processes are joined to the paleo-mammalian engagement ethic processes, this forms the “communal imagination” ethic. Under this ethic, an individual is able to use the full neo-mammalian brain capacities of mentalization, perspective-taking and empathy, language, reasoning, and foreseeing consequences toward prosocial ends. Individuals operating from the communal imagination ethic can make plans, imagine the consequences, and monitor the results of ethical actions that promote prosocial attitudes and empathy toward others, even those beyond one’s immediate social group or culture (Narvaez, 2013, 118). Narvaez states that when the full capacities of the

neo-mammalian brain connect with the full emotional presence and empathy processes of the paleo-mammalian engagement ethic, we see “mindful morality.” Left-brain logic, abstract thinking, and perspective-taking become integrated with right-brain emotional presence, intersubjective connection, and intuitions. The result is “moral wisdom,” a combination of imaginative moral reflection and deliberation with “deep ethical know how.” Simply stated, moral wisdom is “applying the right virtue in the right amount in the right way at the right time” (Narvaez and Bock, 2014, 142).

Implications of the Triune Brain, Ultra-Sociality, and Triune Ethics Theories

To sum up and conclude these three sections, I see three main implications of the triune brain, ultra-social species, and triune ethics theories for my dissertation.

1). First, the three models provide a complementary, evolutionary-based explanation for the neurobiological structures and psychological dynamics of attachment, mentalization, and mindfulness. For example, if the triune brain, ultra-social, and Triune Ethics models are correct, then mentalization and mindfulness would be considered neo-mammalian brain-level mental capacities. They both rely on complex neurobiological structures and mechanisms that have evolved in *Homo sapiens sapiens* over the last 100 to 200,000 years. They both are also profoundly affected by the quality of early caregiving environments. In line with Fonagy’s analysis (Fonagy, 2006; Fonagy et al., 2015), I contend that attachment and mentalization processes are distinct neural and psychological systems yet are developmentally intertwined. Neo-mammalian mentalization processes transform paleo-mammalian attachment processes, by enriching the social exchange between infant and child. In general, mentalization processes are focused on social sharing and understanding, while attachment is focused on safety, security, and basic emotional bonding (Lyons-Ruth, 2006; Cortina and Liotti, 2010).

Moreover, the triune brain and Triune Ethics models indicate that motivation conflicts can occur *within* hierarchical brain levels, as well as *between* levels (Gilbert, 2010; Narvaez, 2014). As was shown throughout Chapters II to VI, older neural systems will “trump” newer systems when an organism is under stress, fatigued, or in danger. Evolutionary psychologist Paul Gilbert's (2010; 2014) model of social mentalities, which derives directly from Bowlby's attachment theory and contemporary clinical science and evolutionary psychology models, can help explain conflicts among and within brain levels. The reptilian brain's threat and survival systems, the paleo-mammalian brain's social dominance and attachment/affiliation systems, and the neo-mammalian brain's in-group ultra-social affiliation system all compete within our minds. Depending upon the social or environmental context and our sense of danger, we shift between each system or different combinations of systems. An evolutionary-informed model can also provide a phylogenetic explanation for the reciprocal relation of mentalization and the attachment system when an individual is under stress (see Chapter III and V): hyperactivation of the older paleo-mammalian attachment-seeking system inhibits newer neo-mammalian mentalization processes. Deactivation of the attachment-seeking system allows mentalization back “online” (Fonagy et al., 2012).

2). Second, I contend that the triune brain and Triune Ethics theories can provide an evolutionary explanation for the therapeutic action of psychotherapy and mindfulness meditation. Attachment-based models of psychotherapy, mentalization-based therapy, and mindfulness meditation could work in part through using top-down neo-mammalian brain-level processes and techniques to “tamper down” or quell reptilian brain-level safety and security affective processes and to enhance the paleo-mammalian brain-level attachment/affiliation emotions. Psychodynamic techniques like mentalization and transference interpretation and

meditation styles like insight, concentration, and lovingkindness meditations all involve neo-mammalian brain-level cognitive and attentional control processes.

Noteworthy for this dissertation, Gilbert (Gilbert, 2010, 2014; Gilbert and Choden, 2014) has recently developed his compassion focused therapy model, based on cognitive-behavioral therapy, his evolutionary psychology research on compassion, shame, and depression (e.g., Gilbert, 2000; 2004; 2005), and the self-compassion and resilience research of psychologist Kristin Neff (e.g., Neff, 2011; Germer and Neff, 2015). In his book, *Mindful Compassion* (Gilbert and Choden, 2014), Gilbert interprets Buddhist psychology and meditation principles using evolutionary psychology, attachment theory, and social mentalities research. Gilbert uses Buddhist mindfulness and lovingkindness meditations, in addition to secular guided imagery and other compassion-centered practices, to quell the safety and security processes of the reptilian brain and enhance the self-compassion and attachment security processes of the paleo-mammalian brain.

I see Gilbert's compassion focused therapy model as complementary to the attachment and mentalization-based models I have expounded in the last six chapters. However, in my view Gilbert's CBT-based model would be enriched with the attachment- and mentalization-related theories on attachment styles and psychopathology I have presented in this dissertation. It would also be enriched with the mentalization-based therapy conceptions of and techniques for borderline personality disorder and other disorders that Fonagy has detailed in his books (see Fonagy et al., 2012).

3). Third, I maintain that the triune brain, ultra-sociality, and Triune Ethics models can help explain the prejudice, stereotyping, and in-group versus out-group biases of human beings, which have been explored for decades in the social psychology literature (e.g., Aronson, 2011;

Aronson et al., 2016). Using Narvaez's Triune Ethics model, in-group/out-group biases could be explained as a product of reptilian brain-level safety ethic (bunker mindset) processes, alone or in conjunction with neo-mammalian brain-level vicious imagination processes. As just discussed, the bunker and vicious imagination mindsets are dominated by protectionist, ego-centric, and aggressive attitudes toward others, geared toward self-preservation and survival. These mindsets are fueled by fear, anger, and rage, which compromise the capacity to emotionally resonate or empathize with others. In addition, the vicious imagination adds the "cunning" of the higher neo-mammalian brain-level rationality, planning, and mentalization processes, which allow these "sophisticated reptiles" to employ sophisticated means to exploit and dominate others for personal gain. Under Narvaez's and Gilbert's models, neo-mammalian brain-level psychotherapy, meditation, and ethical cultivation practices would be used to quell the reptilian brain-level fear and anger emotions and to enhance the paleo-mammalian brain-level engagement ethic processes of emotional resonance and empathy for others (Narvaez, 2006, 2014; Gilbert and Choden, 2014).

Yet fascinatingly, the ultra-sociality and super-cooperative theories of Tomasello (2014), Bowles and Gintis (2011), and Nowak and Highfield (2011) suggest that enhancing the paleo-mammalian brain-level engagement ethic processes may not be enough to counter in-group/out-group biases. As discussed earlier in this chapter, these anthropological and evolutionary game theorists hypothesize that *Homo sapiens*' species-unique neo-mammalian brain-level ultra-social capacities for collective intentionality (group membership and identification; strong in-group/out-group biases; conformity and enforcement of social norms; and the internalization of group moral codes) may have been selected for at the cultural group level, due to intense competition with other human tribal groups. Put another way, the in-group versus out-group

biases in human beings may be an unfortunate by-product of the evolution of the very capacities for collective intentionality that bind us together and most make us human (e.g., mentalization, symbolic language, cultural institutions, social organization, and morality)!

Interestingly, scientific support for this hypothesis may come from neuroscientific research on oxytocin and other social bonding neurochemicals. As discussed in Chapter II, oxytocin (and its male hormone equivalent, vasopressin) is a neuropeptide involved in social bonding, childbirth and nursing, and sexual reproduction. Oxytocin produces a warm, “loving feeling” that promotes social approach behaviors and the formation of mother-infant attachments and adult pair bonds (Hart, 2008, 178). Fascinatingly, recent oxytocin administration research suggests that dosing human males in group settings with oxytocin *increases* trust toward in-group members, while actually *decreasing* trust of out-group members (see De Dreu, 2013). In other words, adult males became *less trustful* of out-group members when dosed with the so-called “social bond” neurochemical. The implication of the ultra-sociality and social bonding neurochemical literatures is that human beings evolved capacities for in-group cooperation and collaboration, but not necessarily for cooperation and collaboration for those outside one’s group. Taking it one step further, the bunker and vicious imagination mindsets may also explain why some people exploit or marginalize powerless members of their own group, such as the poor, disabled, infirm, and mentally ill.

The upshot of the ultra-sociality theories and the social bonding neurochemical research is that another step, beyond enhancing the paleo-mammalian-level engagement ethic processes, must be taken in order to extend in-group affiliation and empathy to powerless and marginalized persons of one’s own society and/or to out-group members of other races, nations or religions. As was just shown in the last section, Narvaez discusses just this further step in her presentation

of the mindful morality mindset of the communal imagination ethic. Mindful morality integrates the left-brain logic, abstract thinking, and perspective-taking capacities of the neo-mammalian brain with right-brain emotional presence, intersubjective connection, and intuitions of the paleo-mammalian brain, resulting in moral wisdom or virtue. An imperative for religious and philosophical ethics is therefore to cultivate neo-mammalian brain- and paleo-mammalian brain-level practices and relationships that allow one to extend in-group affiliation and empathy to ALL the members of one's group (including the poor, disabled, infirm, and aged), as well as to ALL members of other races, nationalities, and religions.

In the last section of Conclusion, I will explore Martha Nussbaum's related analysis of the need to develop an attitude of cosmopolitanism in today's over-populated, globalized, and interdependent world. I will also explain how mindful morality may be cultivated through Buddhist ethical practices and meditation in the pastoral counseling setting.

Buddhism as an Axial Age Religion: Bellah's *Religion in Human Evolution*

In the final section of this chapter, I will now switch from a discussion of evolutionary neuroscience models of human behavior to explicating a model of human cultural evolution. This model is the recent religious studies research conducted by the late UC Berkeley sociologist, Robert Bellah (1927-2013), on religion in human evolution. Over his long academic career, Bellah made numerous important contributions to the sociology of religion, the study of civil religion, and to communitarian politics and social life.¹⁰⁴ Fascinatingly, Bellah had always been interested in the evolution of religious forms, as his early paper, "Religious Evolution" (1964), demonstrated. Late in his life, he undertook an admirable, thirteen year-long study of

¹⁰⁴ Some of his other influential works include *Beyond Belief* (1970); *Varieties of Civil Religion* (Bellah and Hammond, 1980); *Habits of the Heart* (Bellah et al., 1985); and *The Good Society* (Bellah et al., 1991).

evolutionary biology, neuroscience, and cognitive anthropology, which culminated in his 700+ page magnum opus, *Religion in Human Evolution* (2011).

Bellah's book contributed to the recent revival of the study of Axial Age religions, a concept which was first proposed by German philosopher and psychiatrist Karl Jaspers in the 1950s. Jaspers had originally sought to identify the transformational, "pivotal age" in history in which humanity made "breakthroughs" and "leaps" to the social, cultural, intellectual, and religious forms of life we recognize today. Jaspers identified this Axial period as the first millennium B.C.E., when several nations like Israel, Ancient Greece, and India developed parallel forms of self-reflexivity and intellectual critique of the received, "hitherto unconsciously accepted ideas, customs and conditions" of social and religious life (Jaspers, 1953, 2). This critical examination gave birth both to the world religions we know today, as well as to the "rational study of the mind, of religion, and of nature" characteristic of the modern social and natural sciences (Gay and Kreiselmanier, 2016, 321).

Bellah's *Religion in Human Evolution* is noteworthy for placing Jaspers' analysis of the Axial Age within the "big history" of the evolution of the universe (e.g., Christian, 2004; Smail, 2008). This history stretches from the Big Bang, to the beginning of life on Earth, to the emergence of *Homo sapiens*, and finally to the emergence of the Axial Age religions in the first millennium B.C.E. (Bellah, 2011, xi). Importantly for my dissertation, Bellah draws upon many of the same evolutionary biologists, epigeneticists, neuroscientists, and anthropologists I have examined over the last six chapters.¹⁰⁵ Many of their models can be considered part of the extended evolutionary synthesis, discussed in the Introduction. At the center of Bellah's book is his analysis of the four phases of human religious history: Tribal religions (ca. 100,000+ B.C.E.),

¹⁰⁵ Of note, Bellah does not address the attachment theory, developmental science, and psychoanalytic literatures central to this dissertation, with two exceptions: Melvin Konner's *The Evolution of Childhood* (2010) and Sarah Hrdy's *Mothers and Others* (2009).

Archaic religions (ca. 4,000 B.C.E.), and finally, Axial Age religions (ca. 800 B.C.E. to 200 B.C.E.). The religions Bellah identifies as Axial are the religious philosophies of Ancient Greece, Judaism in ancient Israel, Buddhism and Hinduism in ancient India, and Confucianism in ancient China.¹⁰⁶

There are two major features of Bellah's analysis that will be helpful to draw out before proceeding. First, Bellah sought an appropriate theoretical framework for the study of the Axial Age religions that could address the various critiques that historians and anthropologists had levelled at the model over the decades.¹⁰⁷ Bellah states he found this framework in the neuro-anthropological model of the Canadian psychologist, Merlin Donald (1991; 2001; 2012). Donald identifies four stages of the co-evolution of human cognition and culture (discussed below). Bellah grounds his account of the phases of religious history on the evolution of these cognitive-cultural stages.

Second, Bellah states that a "central principle" of his work is that "nothing is ever lost" in biological and cultural evolution (2005, 72). Bellah draws on the systems biology research of Kirschner and Gerhart (2005), who describe a series of "conserved core processes" in cellular and organismic evolution over the last 2.5 billion years.¹⁰⁸ Core processes are new, emergent structures and capacities which increase novelty, variation, and adaption (e.g., multicellular structures in eukaryotes; "anatomical body plans" in animals). At each new stage of evolutionary development, the core processes that emerged in earlier stages are not replaced. Instead, they are preserved, reorganized, and "retasked" for continued use. Bellah extends this concept to the

¹⁰⁶ Jaspers had included Zoroastrianism in Persia, but most scholars now leave it out. See Bellah, 2005, 75.

¹⁰⁷ For the numerous critiques of the Axial Age construct, see the edited collections of Eisenstadt, 1986; Arnason et al., 2005; and Bellah and Joas, 2012.

¹⁰⁸ As noted in the Introduction, systems biology is one of the main sources of the extended evolutionary synthesis.

sphere of cultural evolution (by analogy), and hypothesizes that each of Donald's cognitive-cultural levels operate as conserved core processes (2011, 65).¹⁰⁹

In this section, I will describe Donald's four stages in the evolution of human culture and cognition, followed by Bellah's three phases in the history of human religion. As was discussed in the Introduction, see Gay and Kreiselmaier (2016) for a parallel analysis of the application of attachment concepts and research to the worship of and communion with God as "Father" in Western monotheistic religions.

Merlin Donald's Model of the Co-Evolution of Human Cognition and Culture

First, the Canadian neuro-anthropologist and cognitive scientist, Merlin Donald (1939-), has developed an influential model of the co-evolution of human cognition and culture (1991; 2001). Donald's model synthesizes research from the cognitive sciences, neuroscience, and cultural and physical anthropology. He traces the entire history of human cognitive-cultural evolution, from our hominin ancestors two million years ago up to the "digital era" of today (Donald, 2014). Donald's central thesis is that humanity has advanced through four major stages of cognitive-cultural evolution: episodic, mimetic, mythic, and theoretical. The transition to each new stage reflects a transformation of both the way we "cognize" or understand and represent reality; and the way we store and retrieve shared memories and knowledge (Donald, 2012, 49-52). Over the course of human evolution, neurobiology and culture have co-evolved, leading to increasingly complex modes of cognition (e.g., logic) and increasingly external methods for storing memories and knowledge (e.g., written texts). The result is a "deeply enculturated" modern human brain and a "cumulative culture" that must be transmitted to each new generation.

¹⁰⁹ As we have seen, MacLean's (1990) triune brain model describes similar processes. Later-evolving strata in the brain reorganize rather than replace the structures and mechanisms of strata that came before.

Yet in line with the concept of conserved core processes, Donald maintains that older modes of cognitive representation are still operant in human mental functioning, as they are conserved within and reorganized by each new cognitive-cultural level (Donald, 2012, 54). I will discuss each stage in turn.

Donald's first stage is episodic culture, which our early primate ancestors shared with the other higher mammals millions of years ago. This stage is characterized by a self-awareness of the flow of "episodic event-perceptions" through time. Although higher mammals show a "sophisticated mastery of social and environmental events," experience is limited to the present moment and communication is concrete (Donald, 2012, 56). The second stage is mimetic culture, which began to evolve with the emergence of hominins over 2 million years ago. Donald defines mimesis as "an embodied, analog, gestural mode of expression" (2012, 96). Mimesis is pre-linguistic, "reduplicative," and collective. Episodic event-perceptions are transformed into "theatrical, embodied, and performance-oriented" event-representations that are learned and performed by the group. Donald contends that mimetic learning and expression underpins early hominin craft and toolmaking skills, hunt coordination, and cultural customs, rituals, and art (e.g., dance, music, and art). Using Tomasello's categories discussed above, mimetic culture appears roughly equivalent to joint intentionality capacities (2014a).¹¹⁰

Donald's third stage is mythic culture, which emerged in *Homo sapiens* between 300,000 and 100,000 years ago. This stage is characterized by a shift to "speech, storytelling, and fully developed oral-mythic culture" (2012, 59). Early modern humans evolved new neurocognitive capacities for formal language (lexical invention, phonology, and grammar), autobiographical memories, and shared narrative forms of metaphorical thought. Mythic culture "scaffolded" on

¹¹⁰ In his most recent works, Donald has begun to incorporate Tomasello's (2014a) "shared intentionality" model of human infant and primate cognition research. See Donald, 2012; 2014.

mimetic skills and culture, producing an explosion of “collective cultural remembrances”; myths, archetypes, and allegories about the nature of existence and the universe; ritual commemorations of birth, life and death; and vibrant expressions of art, music, and dance (Donald, 2012, 60-62). This stage appears equivalent to Tomasello’s category of collective intentionality (2014a).

Finally, Donald’s fourth stage is theoretic culture, which first developed during the first millennium B.C.E. (the time period of the Axial Age religions). Theoretic culture is characterized by “symbolically literate societies and theoretic governance” (Donald, 20102, 64). These refer to the invention of advanced writing technologies and symbol systems and the “externalization of memory storage” in physical media; and the development of new methods of analytical thought, logic, theory construction, and, eventually, scientific experimentation that the writing technologies facilitated.¹¹¹ These result in a new “cognitive ecology” and habits of mind unique to theoretic cultures, including the “codified laws, economic and bureaucratic management, and reflective scientific and cultural institutions” that we recognize today (2012, 67). As we will see next, theoretic culture transformed the religious beliefs and practices of mythic cultures. But it also set off a process of “antiritualism and demythologization” characteristic of Western modernity and science (Bellah, 2011, 175).

Bellah’s Three Phases of the Evolution of Human Religion

Next, I will describe Bellah’s three phases in the evolution of human religion. As indicated above, Bellah grounds his account on Donald’s four stages of cognitive-cultural evolution. Tellingly, Donald’s stages do not line up precisely with Bellah’s phases of religion.

¹¹¹ Donald states that written language was first invented in the fourth millennium B.C.E. in Egypt and Sumer, but was only combined with “theoretic thought” beginning in the first millennium B.C.E.

Other complex sociocultural processes of human evolution must also be added to the mix.¹¹² Like most contemporary sociologists and anthropologists of religion (e.g., Clarke, 2009; Winzeler, 2012), Bellah maintains that human religious history is not only cognitive but also intimately interconnected with other forms of human social and political organization and development (2011, 114). Bellah's account traces the slow, gradual, uneven, and sometimes regressive evolution of cognitive, religious, social, and political processes, over the long centuries and millennia of the past. I will present Bellah's three phases, in turn.

1). Tribal Religions

Bellah's first phase of religious history is Tribal religion, which likely emerged in our *Homo sapiens* ancestors sometime between 150,000 to 50,000 B.C.E. (Bellah, 2011, 120). In his analysis, Bellah draws on many of the same contemporary anthropological studies of small band hunter-gatherer cultures that I discussed earlier in this chapter. As moral psychologist Darcia Narvaez has shown (2014), recent research suggests that small band hunter-gatherer groups were relatively egalitarian, mutualistic, and communal in nature (Boehm, 1999; Fry, 2013). These hunter-gatherer cultures were comprised of social embeddedness and social enjoyment; egalitarian rather than hierarchical social structures; symbiotic relations with the natural world; and an evolved developmental niche consisting of responsive parenting, constant touch, and a supportive social environment (Narvaez, 2013, 121-122; Narvaez, 2015, 23-25).

Bellah contends that Tribal religions consist of a mix of Donald's (2012) mimetic and mythic cultures, and are reflective of the egalitarian social and political organizations of small

¹¹² Donald's stages *do* line up with Bellah's model of the "modes of religious representation," which he draws from developmental psychologist Jerome Bruner's work (1966): unitive, enactive, symbolic (iconic, musical, poetic, and narrative), and conceptual representations. See Bellah, 2011, 11-43.

band hunter-gatherer groups. He makes three major points. First, Bellah states that Tribal religions were “cosmological,” by which he means that “supernature, nature, and society were all fused in a single cosmos” (Bellah, 2005, 70). There was no separate supernatural realm, and no especial concern about the afterlife. Second, Tribal societies did not worship a supernatural God or gods, as we would understand it. Instead, nature was suffused with a sacred order and with “powerful personal beings” (e.g., spirits, animals, or humans). Humans sought to participate in or direct their power (Bellah, 2011, 141-146). Third, Tribal religious life was communal and face to face, centered in collective ritual performances that bound the group together with a shared sense of “energy and solidarity” (Durkheim’s concept of *collective effervescence*) (Bellah, 2011, 265).

2). Archaic Religions

Bellah’s second phase of the evolution of religion is Archaic religion. Archaic religions developed as human tribal societies slowly evolved over the millennia into chiefdoms and then, after the invention of agriculture between 8-12,000 years ago, into the great state civilizations in Mesopotamia, Egypt, and China in the fifth and fourth millennia B.C.E. (Bellah, 2011, 211).¹¹³ Fascinatingly, Bellah states that the evolution from Tribal to Archaic societies can be considered a return to a despotic, hierarchical form of political organization (Bellah, 2011, 178).¹¹⁴ Perhaps because of the need for increased central control of the vast populations and territories of the new states, political power and authority came to be more and more concentrated in the figure of the high chief, and, eventually, the hereditary king or emperor. Along with the “increase in economic surplus” produced by the new horticultural and agricultural practices, the early states evolved

¹¹³ Archaic state civilizations also developed separately in Mesoamerica in the sixteenth century B.C.E.

¹¹⁴ As discussed in Footnote #102 above, Bellah draws on Christopher Boehm’s (1999) “reverse dominance hierarchies” theory of early SBHG groups. While most primate social organizations consist of “dominance hierarchies,” adult males in SBHG groups “form a general coalition to prevent any one of their number, alone or with a few allies, from dominating the others” (Bellah, 2011, 176). However, the despotism of the Archaic states was “more ferocious than anything to be seen among the great apes” (Bellah, 2011, 178).

royal court governments; complex state bureaucracies; stratified classes of nobility, priests, warriors, common workers, and outcastes and slaves; organized warfare; written languages; systems of taxation; and market economies (Bellah, 2011, 178, 225-226).

Bellah contends that that the increased complexity and stratification of the early Archaic states led to “new forms of ritual and myth, [and] new understandings of the relation between cosmos, society, and self” (2011, 175). Three points are important. First, the concentration of political power in the king was matched by his imbue ment with divine or quasi-divine powers and origins. The cosmological union of “supernature, nature and society” in Tribal religions was now fused into one person. The king became the mediator to the divine (Bellah, 2011, 208). Second, the stratification of the human political order into classes was extended to the divine order. The powerful spirits of the Tribal religions were “elevated” into divine gods and goddesses, who were now given rank under one high god (e.g., Marduk in Mesopotamia, Ra in Egypt) (Bellah, 2011, 185). Third, the communal religious ritual participation of Tribal religions was transformed into true worship of the gods, mediated by the king or a high priest. The king or high priest offered prayers and ritual sacrifices to the gods, but the rites were conducted in secret (the mysteries or holy of holies) in sacred temples set apart from the people. Bellah does note that most people in Archaic societies continued to participate in face to face communal rituals and festivals in their local villages, continuing the socio-religious lifestyles of the Tribal societies of the past (Bellah, 2011, 265).

3). Axial Age Religions

Finally, the three central chapters of Bellah’s *Religion in Human Evolution* comprise a detailed analysis of the four Axial Age religions that evolved between 800 B.C.E. to 200 B.C.E.:

the religious philosophies of Ancient Greece (e.g. Socrates, Plato, and Aristotle), Judaism in ancient Israel, Hinduism and Buddhism in ancient India, and Confucianism in ancient China (Bellah, 2011, 265-566). In the first millennium B.C.E., we finally see the appearance of Donald's theoretic culture. In fact, Bellah states that "the axial breakthrough was essentially the breakthrough of theoretic culture in dialogue with mythic culture as a means for the 'comprehensive modeling of the entire human universe'" (Bellah, 2005, 78). Bellah summarizes the new theoretic culture as "second-order thinking," which he defines as "'thinking about thinking', that is, it attempts to understand how the rational exposition is possible and can be defended" (Bellah, 2005, 80). The new writing technologies, external memory storage systems, and "cognitive ecologies" of analytical, logical, and theoretical thought transformed the Archaic state societies, resulting in new intellectual and artistic classes of scribes, scholars, teachers, poets, playwrights, and philosophers. As can be most clearly seen in Ancient Greece, second order thought was brought to bear in examining all facets of culture, society, and nature, eventually leading to the academic disciplines of the humanities, social sciences, and natural sciences we know today (Donald, 2012, 69).

Theoretic culture also transformed the Axial Age religions in profound ways. From Bellah's analysis and other prominent accounts (see Arnason, Eisenstadt, and Wittrock, 2005; Bellah and Joas, 2012), I have gleaned five major features of Axial Age religions that most scholars appear to agree upon.¹¹⁵ First, for the first time in history all Axial Age religions wrote down their myths, beliefs, and liturgical rites into sacred texts. A new class of scribes, theologians, and scholars arose who copied and preserved the texts and who used second-order

¹¹⁵ Bellah is a sociologist of religion working from the Durkheimian paradigm. In my view, he is most insightful in chronicling the social and communal forms of religious practice in the Axial Age, rather than the new individual styles of meditation and prayer that were also characteristic of this period.

thought to systematically analyze, critique, interpret, and commentate upon the mythic narratives and beliefs in the texts in a way never possible before (Bellah, 2011, 280).

Second, Axial Age religions are characterized by a new transcendental vision of reality. Whereas in Tribal religions the sacred, nature, and society are fused as one and in Archaic religions are fused in the person of the king, in Axial Age religions there is a new “basic tension” between the transcendental and mundane realms. More and more, Axial Age theologians and philosophers ascribed a “greater purity, greater justice, greater perfection and a more universal explanation of things” to the transcendent world. This was contrasted with the decay, death, sorrow, and injustice found in everyday life (Momigliano, 1975, 8-9; quoted in Bellah, 2011, 268). Second-order theoretical also thought added a whole new level of sophistication and complexity to the incipient Archaic religion “mythospeculations” about the nature of divinity, the cosmos, truth, justice, the good, and the afterlife.

Third, the transcendental vision provided new “utopian” ethical and social vantage points from which to examine and critique the oppressive state governments and religions of the earthly world. A clear example is the Hebrew prophets’ critiques of social conditions in the kingdoms of Judah and Israel, which they compared with the ideal Day of the Lord to come (Bellah, 2011, 325). Proponents of this new social criticism advocated for a more egalitarian political and economic order and a more just social treatment of the poor and weak. Fourth, one major component of the transcendental and utopian social visions was a new set of universalistic ethics. Best expressed in the varied renderings of the Golden Rule, Axial Age religious devotees were enjoined for the first time in history to extend love, empathy, compassion, benevolence, and fairness to all members of humanity, not just one’s tribe, ethnicity, nation, or religion (Bellah, 2011, 418-419).

Fifth and finally, the transcendental vision also led Axial Age theologians and practitioners to place a new emphasis on individual soteriology, usually defined as salvation and communion with God or the gods after death in Heaven or the heavenly realms; or liberation (*nirvana* in Buddhism, *moksa* in Hinduism) from the endless cycles of suffering and rebirth in *samsara* (Bellah, 2011, 276). New sets of individualistic devotional and meditative practices were added to the Tribal and Archaic communal rituals and liturgies of the past, to help facilitate the personal transformation needed to achieve transcendental salvation or liberation (see Hadot, 1995, 2002; Taylor, 2007).

Implications of Bellah's *Religion in Human Evolution* for this Dissertation

In the final section of this chapter, I will discuss the implications of Bellah's religion in human evolution model for understanding Buddhist practice and the contemporary Insight and mindfulness meditation movements today. I see three main implications for this dissertation, which I will discuss in turn.

Buddhism as an Axial Age Religion

First, the Buddhist philosophies, ethics, and meditative practices I have discussed in Chapters IV and V clearly demonstrate that traditional Buddhism meets all criteria for being an Axial Age religion (Bellah, 2011, 527-566). First, the various Buddhist schools and traditions have produced several vast canons of sacred texts, commentaries, and philosophical treatises. Buddhist scholar Gethin states that the Pali canon of the *Theravada* Buddhist school runs to fifty volumes, alone (1998, 40). Second, traditional Buddhist cosmologies are clearly characterized by the transcendental vision of reality. Buddhist philosophers incorporated many aspects of Hindu cosmologies, including "thirty-one realms of existence" (from hell realms up to the celestial

realms of the gods); a vast panoply of supernatural beings, including gods, *bodhisattvas* (future Buddhas), ghosts, and hell beings; and an eternal, circular system of space and time in which hundreds of millions of universes have been born, imploded, and reborn again (Gethin, 1998, 112-116). Buddhism is unique among Indian religions for positing that the high *Brahma* gods are still caught up in the endless cycles of rebirth (*samsara*). Liberation (*nirvana*) for early Buddhist philosophers was to escape from the endless rounds of *samsara* to the transcendental state of the unconditioned, unborn, and deathless.

Third, the Buddha and other Buddhists immediately after his era made explicit sociopolitical critiques of the oppressive reigns of the regional Indian princes; of Hindu doctrines and practices; and of the Indian caste system. For example, Buddhists allowed the Indian “untouchables” and women to become ordained Buddhist monks and nuns. This had been forbidden in the Hindu sacred texts and in doctrinal law (Gethin, 1998, 90-91). Fourth, Buddhist philosophy clearly contains a set of universalistic ethics. As discussed in Chapter IV, *Theravada* Buddhist practitioners seek to cultivate the four *brahma-viharas* (“divine abodes”) of lovingkindness, compassion, sympathetic joy, and equanimity. These states are cultivated in meditation first for the self, and then “radiated out” to all sentient beings in the “four corners” of the universe (Salzberg, 1995; Wallace, 2010). Cultivating lovingkindness and compassion for the self, for loved ones, and even for enemies is considered to be integral to the path of wisdom and *nirvana*.

Fifth and finally, in the *Theravada* tradition the Buddhist Four Noble Truths and Eightfold Path have a clear soteriological emphasis (Gethin, 1998). As I just noted, *nirvana* is

seen as a personal liberation from the endless cycles of rebirth in *samsara*.¹¹⁶ Moreover, as described throughout Chapter IV, Buddhism contains a vast tradition of meditative practices that are used to gain direct experiential insight (*vipassana*) into the impermanent, unsatisfactory, and insubstantial (“not self”) nature of reality. Buddhist meditation is grouped into three main styles: insight (*vipassana*), tranquility (*samatha*), and lovingkindness (*metta*) meditations (see Gethin 1998; Shaw, 2009).

The Persistence of Mimetic and Mythic Forms of Life

Second, I want to highlight the importance of Donald’s analysis of the persistence of mimetic and mythic cognition and practices in human life. As just discussed, Donald (2012) maintains that humanity has advanced through four stages of cognitive-cultural evolution: episodic, mimetic, mythic, and theoretical. The transition to each new stage reflects a transformation of both the way we “cognize” or understand and represent reality; and the way we store and retrieve shared memories and knowledge (Donald, 2012, 49-52). Over the course of human evolution, the co-evolution of neurobiology and culture has produced increasingly complex modes of human cognition and increasingly external methods for storing memories and knowledge.

Of major importance for Bellah’s account of religious evolution and for my integration of attachment, mentalization, and mindfulness processes, Donald maintains that older modes of cognitive representation are still operant in human mental functioning. Older modes of cognition are conserved within and reorganized by the new cognitive-cultural levels (Donald, 2012, 54). As is apparent, Donald’s account has similarities to MacLean’s (1990) triune brain model of the

¹¹⁶ As discussed in Chapter IV, the later *Mahayana* and Tibetan traditions revised this soteriological goal by emphasizing the *bodhisattva* ideal: forgoing final liberation from *samsara* until all sentient beings reach *nirvana*. See Gethin (1998).

human mind. In his model, later-evolving strata in the brain reorganize rather than replace the structures and mechanisms of strata that came before, and the more ancient emotional systems continue to guide and provide color and drive to our lives. Similarly, Narvaez's (2014) Triune Ethics model posits three dispositional ethics that are grounded in one of the three strata of the triune brain. The ethic in ascendance "influences the prioritization of values" in a given situation, and "trumps" the values of the other ethics (Narvaez, 2015, 113).

The astute reader may also notice the similarities between these models and an even older psychological model of human functioning: Sigmund Freud's structural model of the mind (1923). In Freud's psychoanalytic model, the primal, ancient, unconscious drives for immediate pleasure and gratification (the id) compete in our minds with the overly-moralistic demands of society (the super-ego) and the realities of the present situation (the ego). In words that echo the themes of Freud, MacLean, and Narvaez, Donald states, "In effect, we have become complex, multilayered, hybrid minds, carrying within ourselves, both as individuals and as societies, the entire evolutionary heritage of the past few million years" (Donald, 2012, 67).

In a recent edited collection of chapters that review and assess Bellah's *Religion in Human Evolution* (2011), Donald provides a succinct description of the persistence of earlier forms of cognitive-cultural modes. It will be useful to my argument to quote him in full (Donald, 2012, 72):

The modern mind reflects this fact. It is a complex mix of mimetic, mythic, and theoretic elements. Art, ritual, and music reflect the continuation of the mimetic dimension of culture in modern life. The narratives of the great religious books reflect the mythic dimension, as do the many secular myths of modern society. These two great domains—the mimetic and the mythic—are mandatory, hardwired, and extremely subtle and powerful ways of thinking. They cannot be matched by analytic thought for intuitive speed, complexity, and shrewdness. They will continue to be crucially important in the future, because they reside in innate capacities without which human beings could not function.

Mindfulness Meditation in its Buddhist Ritual and Ethical Contexts

Third and finally, I contend that the triune brain, Triune Ethics, and Axial Age models of this dissertation can support and help ameliorate the recent critiques of the Insight (*Vipassana*) and mindfulness meditation movements in our contemporary society. As I discussed in Chapter IV, as the mindfulness meditation movement has increased in visibility, it has also become the subject of numerous evaluations and critiques. The most common charge levelled against MBSR and other mindfulness-based therapies is that in the zeal to appeal to the modern psychological and medical communities, mindfulness meditation models place an inordinate focus on meditative practices, to the exclusion of the rest of the Buddhist path. In effect, the mindfulness movement has stripped meditation from its roots in the *Lebenswelt* (“lifeworld”) of Buddhist scriptures, ethics, and communal rituals (e.g., Sharf, 1994, 2015; Klein, 2016).

Fascinatingly, a recent group of scholars (McMahan, 2008; Wilson, 2014; Braun, 2013, 2014) contend that MBSR is a form of Buddhist Modernism. MBSR is rooted historically in the late nineteenth and early twentieth century Burmese *Vipassana* movement. However, the *Vipassana* movement evolved in the wake of European colonialism and was in some sense an accommodation to Western intellectual currents of modernity. According to these critics, Buddhist Modernism movements are popular in contemporary America and Europe *precisely because* they have stripped meditation from its “Oriental” sociocultural roots and have emphasized individual meditative practice and a non-conceptual style of universal religious experience (see Harrington and Dunne, 2015).

In interesting ways, these historical and cultural critiques of the mindfulness movement can be related to Bellah’s account (2011) of the rise of the Axial Age religions in the first millennium B.C.E. As we have seen, Bellah contends that “the axial breakthrough was

essentially the breakthrough of theoretic culture in dialogue with mythic culture as a means for the ‘comprehensive modeling of the entire human universe’” (Bellah, 2005, 78). The new writing technologies, external memory storage systems, and second-order “cognitive ecologies” of analytical, logical, and theoretical thought transformed the Archaic state societies and religions. Second order thought was brought to bear to examine all facets of culture, society, and nature (Donald, 2012, 69).

Yet Bellah states that a perhaps unforeseen consequence of the Axial Age breakthrough has been the increasing dominance of theoretic modes of thought in human culture and society. Over the ensuing centuries after the Axial Age, theoretic culture has become more and more “disembedded” from its roots in episodic, mimetic, and mythic cognitive-cultural modes. The result has been a gradual cultural trajectory of “antiritualism and demythologization” in European societies, especially since the rise of Western modernity and science in the seventeenth and eighteenth centuries (Bellah, 2011, 175). The disembedding of theoretic culture from the mimetic and mythic continues in our culture today, and is reflected in the radical decreases in participation in institutional religion and civic organizations (see Taylor, 2007).¹¹⁷ Under Bellah’s biological and cultural evolutionary account, the contemporary fascination with individualistic forms of Buddhist meditation has a much older and more comprehensive evolutionary history than the last fifteen or even one hundred years.

Even worse, communitarian critics like Bellah and colleagues (1985) and Charles Taylor (1989) and moral psychology and anthropology scholars like Darcia Narvaez and colleagues

¹¹⁷ Charles Taylor has provided a magisterial analysis in *A Secular Age* (2007) of the breakdown of participation in religious and social organizations in our secular times and the rise of “expressive individualistic” forms of spiritual practice. A full explication of the contemporary Insight and mindfulness meditation movements would include the usage of Taylor’s concepts and nomenclature, such as secularity 1, 2, and 3, exclusive humanism, the social imaginary, the *Ancien Regime*, the Age of Mobilization, the Age of Authenticity, the nova effect, fragilization, cross pressures, the immanent frame, transcendence, closed and open takes, fullness, and transformation.

(2013, 2014) charge that the contemporary breakdowns of participation in social, civic, and religious forms of organizations and institutions may be one cause of the increasing rates of stress, isolation, loneliness, and mental illness in American society. If human beings have evolved over the eons to grow up within an evolved developmental niche characterized by high levels of social embeddedness and social enjoyment, and within sociocultural groups and religions characterized by dance, music, rituals, and myths, then the loneliness and alienation of our age makes much sense.

I contend that one solution to this sad state of affairs is found in the very attachment, mentalization, and mindfulness, and biological and cultural evolution models I have presented in this dissertation. The Buddhist scholars' critiques of the mindfulness movement have warrant in that contemporary mindfulness practitioners are practicing meditation in a manner divorced from its roots in Buddhist scriptures, ethics, and communal rituals. However, the fact these mindfulness practitioners are attracted to Buddhist meditation in the first place can be seen as a combination of millennia-old processes of antiritualism and demythologization, on the one hand, and a yearning for primordial forms of social embeddedness, dance, music, ritual, myth, and transcendence which are part of our evolutionary and cultural history, on the other. In other words, the contemporary attraction to individualistic forms of mindfulness meditation may be a *symptom* rather than a *disease*.

One solution, therefore, is for contemporary mindfulness meditation practitioners to engage more fully in the traditional Buddhist *Sangha* community life or in mindfulness communities that retain the traditional forms. This would include engagement with traditional Buddhist scriptures, ethical teachings, and communal rituals, as well as with meditative practices. If all of the attachment, mentalization, and mindfulness, developmental science, and

biological and cultural evolution models I have presented over the last six chapters are correct, then the social and cultural components of the Buddhist *Sangha* community, such as *roshi/guru/teacher* attachment relationships, dharma talks, ethical cultivation, and communal rituals, are likely to be crucially important for mental wellbeing and even for progress in wisdom and compassion along the Buddhist path. Perhaps with some irony, I suggest that this may be true even for those secular Buddhist practitioners who eschew traditional Buddhist metaphysics and cosmologies (e.g., Bachelor, 1998, 2015; Flanagan, 2011; Harris, 2014). Yet again, this is a fascinating empirical question, and one that awaits further research.

Given the pre-modern roots of the Buddhist tradition, the question from a psychotherapeutic perspective is whether Buddhist teachings mythologize the developmental process insofar as they understand the ultimate goal as transcending this world of suffering and delusion. Given the secular roots and pragmatic goals of psychotherapy, the question from a Buddhist perspective is whether such therapies still retain too limited an understanding of our human potential, ignoring possibilities that transcend conventional assumptions about what it means to be human.

The tension between these two questions is what makes the conversation between Buddhism and psychotherapy so fascinating—and important.

David Loy, 2014¹¹⁸

CONCLUSION:

TAKEAWAYS AND IMPLICATIONS

In this Conclusion chapter, I will close the discussion of this dissertation by taking a step back and presenting four major ideas that can be gleaned from the integration of attachment, mentalization, and mindfulness metacognitive awareness. The four ideas consist of two major takeaways from this dissertation, and two major implications for discourses in the fields of religious studies, religion and psychological studies (RPS) or religion, psychology and culture (RPC), and pastoral counseling and pastoral theology.

First, I will hypothesize about the possible evolutionary purposes of attachment, mentalization, and mindfulness. Second, I will discuss the necessary role of humanization and cosmopolitanism in our globalized, interdependent world. I will draw on the works of the moral

¹¹⁸ Retrieved on 1-23-17, from http://www.huffingtonpost.com/david-loy/what-buddhism-and-psychot_b_5549963.html

philosopher Martha Nussbaum. Third, I will examine the implications of the integration of attachment, mentalization, and mindfulness for pastoral counseling and pastoral theology. Finally, I will return to my three central theses of the dissertation and advocate for the necessary role and place of RPC developmental and evolutionary neuroscience research models in religious studies and Buddhist studies debates.

The Possible Evolutionary Purposes of Attachment, Mentalization, and Mindfulness

First, I will hypothesize about the possible evolutionary purposes of attachment, mentalization, and mindfulness. This analysis can in some ways serve as a summation and gathering together of the material I have presented in the last six chapters. In the most general terms, the psychological functions that comprise attachment appear to be much larger in scope than those of mentalization and mindfulness, and the three processes appear to have different evolutionary, adaptive purposes. As discussed in Chapter I, attachment theory is a “grand theory” of human functioning that cuts across the biological, developmental, cognitive, affective, and social psychology literatures. Bowlby depicted attachment as a species-universal, neuro-bio-behavioral system that has evolved over the last 200 million years. It exists in all mammalian species, including higher primates and humans. Bowlby theorized that the evolutionary purpose of attachment is to motivate mammalian infants to seek physical proximity to and comfort from their caregivers during times of separation or distress, in order to enhance infants’ chances of survival (and eventual reproduction) (Bowlby, 1969; 1973). Moreover, extensive empirical research has explored the pervasive effects of early attachment relations on subsequent personality functioning, psychological security, affect regulation, and interpersonal relationships throughout the lifespan. Finally, recent modern neurobiological attachment research has begun to elucidate how the dyadic, mutual regulation processes within the mother-infant attachment bond

profoundly affect the basic cognitive, affective, and social neuro-development of the child, all the way down to the genetic and neurochemical levels.

Mentalization, on the other hand, appears to be a much narrower psychological process that is unique to the human species. As discussed in Chapter III, Fonagy depicts mentalization as the multidimensional neurocognitive capacity of human beings to understand and interpret the behavior of self and others in terms of underlying mental states, such as emotions, thoughts, and desires (Fonagy et al., 2012). Fonagy has investigated how mentalization develops through marked affective mirroring within secure attachment bonds, as well as the stages of mentalization development in children. Fonagy has also hypothesized that mentalization capacities evolved in *Homo sapiens* 200,000 years ago for the purpose of enhancing their social intelligence. The ability to understand human minds fostered social cooperation and cultural transmission within our ancestors' kinship groups. This may have allowed them to better adapt to the environment and compete with other kinship groups for survival. The full-flowering of narrative mentalization processes beginning by age six also appears to be a foundation of human sociality, culture, and morality. In sum, attachment processes appear to be focused on safety, security, and basic emotional bonding, while mentalization processes are focused on social sharing and understanding (Lyons-Ruth, 2006; Cortina and Liotti, 2010, 2014).

Third and finally, the psychological functions and evolutionary purposes of mindfulness are less clear than the other two processes. Speculation on the adaptive advantages of religious experiences and practices, especially, is an often fraught and contentious enterprise (see Brown, 2006; Meador, 2006). I will nevertheless hazard a few guesses. As discussed in Chapters IV and V, mindfulness appears to be a set of specialized, multidimensional neurocognitive capacities that can be developed in adolescent and adult human beings through meditative practices. The

psychological traits cultivated in mindfulness meditation and mindfulness-based interventions include *metacognitive awareness* or decentering/dis-identification from the stream of internal experience; *mental notation* or labeling of thoughts, feelings, and bodily sensations; non-judgmental *acceptance* of and *nonreactivity* to internal experiences; and cultivating *lovingkindness* for self and others (Baer et al., 2006). These traits may result in positive changes in more basic psychological processes, such as attentional control, body awareness, affect regulation, and self-related processing (Hölzel et al., 2011). The development of metacognitive awareness of sensory and bodily sensations in meditation is normally not a focus of attachment theory or mentalization theory, in general.

The relation between mindfulness and mentalization is an ongoing area of investigation. I hypothesize that mindfulness metacognitive awareness processes are phylogenetically and ontogenetically dependent upon, and possibly a subset of, the mentalization metacognitive processes and neural mechanisms discussed in Chapter III. Human-specific mentalization processes likely evolved 200,000 years ago, and something like mindfulness metacognitive awareness may have existed in early Shamanic religious practices (e.g., Winkelman, 2006). However, I hypothesize that mindfulness in its fullest cultural, phenomenological, and neurocognitive expressions may have only developed with the rise of the Axial Age religions, between 800 to 200 B.C.E. (Bellah, 2011; Bellah and Joas, 2012). As we have seen, Axial Age religions like Buddhism include transcendental metaphysics, universalistic ethics, and individual devotional and meditative practices that complement the communal religious liturgies and rituals that evolved in earlier periods of religio-cultural history.

Finally, in terms of the adaptive value of mindfulness, it is tempting to follow Bellah (2011, xxii) in focusing on a *description* of the cultural and neurocognitive evolution of religious

practices rather than become embroiled in scholarly debates over whether mindfulness as an isolated psychological trait does or does not increase evolutionary fitness as an adaptation, maladaptation, exaptation, spandrel, or functionless by-product (see Wildman, 2006). However, drawing on the extended evolutionary synthesis models of evolutionary psychology discussed in the Introduction, I contend that mindfulness processes and mindfulness meditation likely do serve some adaptive value at the social/cultural group level. Mindfulness meditation is a subset of human religious practices and inner disciplines that facilitate the moral and psychological transformation of human experience (Nussbaum, 1994; Hadot, 1995; Flanagan, 2011). Mindfulness meditation can foster human flourishing, wisdom, and constructive coping with the existential problems and psychological stresses of daily life. Mindfulness can also help cultivate empathy for members of all races, nations, and religions. As I will argue next, this is a crucially-needed ethical capacity in today's globalized, interdependent world, if the human species is to survive and prosper.

Cosmopolitanism, Mindful Morality, and Buddhist Practices in Our Globalized and Interdependent World

Second, I contend that a major task for human beings today in our globalized, multicultural, interdependent world is to cultivate a cosmopolitan attitude of empathy, compassion, and respect for all members of one's own society and for the members of other races, nations, and religions around the world. To show how, I will draw together Darcia Narvaez's Triune Ethics model of moral psychology; Bellah's account of the characteristics of Axial Age religions; traditional Buddhist philosophies, ethics, and meditative practices; and moral philosopher Martha Nussbaum's account of cosmopolitanism (Nussbaum, 1997, 2014).

Globalization and the Rise of Reactionary Nationalist and Populist Movements

First, as anyone who has paid attention to world affairs and the recent U.S. presidential election is likely aware, we live in troubled and perilous times. The end of the Cold War in 1990 did not bring about an “end of history” and the establishment of modern liberal democracies and stable free markets around the world (Fukuyama, 1992). Instead, over the last several years we have seen a return of reactionary authoritarian political movements based on xenophobic forms of nationalism and populism. The central message of many of these movements in the U.S., Europe, and Russia is, in my view, a suspicion of and aggression toward the “other.” The other in these societies can be the members of any relatively powerless or marginalized group, including religious minorities, racial and ethnic minorities, immigrants and refugees, and LGBTQ persons.

According to the analyses of prominent political, economic, and cultural theorists, this rise in nationalism and populism has many causes (e.g., Vance, 2016; Hochschild, 2016; Isenberg, 2016). Among those causes normally listed are the erosion of the U.S. manufacturing base, stagnant wages and unemployment among the middle and lower classes, a concentration of wealth amongst the top-earning 1%, racial resentments and the lingering effects of slavery and Jim Crow laws in the South, the rise of religious terrorism and the territorial conquests in the Middle East by extremist religious groups like ISIL, and an increase in the flow of immigrants and refugees fleeing persecution and privation.

A common thread that runs through most of these causes (with the exclusion of the ancient roots of slavery and racial animus) is the epochal rise of globalization over the last twenty years (e.g., Roy, 2004; Harvey, 2005; Appiah, 2006; Rodrik, 2011). Since the 1990’s, the world has become radically interdependent and interconnected in ways unimaginable in previous

centuries. The world now forms a global economic, political, and social network, facilitated by technological innovations like the internet, mass media communications, and jet plane travel. But this global network also reacts as a nonlinear complex system: increases in population, diseases, food shortages, unemployment, recessions, wars, and religious extremism in one part of the network can cause economic displacements and social and political instability in the others.

The result of these cross-pressures and instability appears to be a massive revolt by segments of the lower and middle classes against the entire globalized, neoliberal political and economic order. In my view, reactionary nationalist and populist leaders rush in to exploit the justified anger and unrest of the disempowered working and middle classes by providing an easy scapegoat for their rage: the religious, racial, ethnic, immigrant, and alternative sexual other. Nationalist and populist leaders advocate starting wars to attack our enemies, building walls to keep immigrants out, raising tariffs to protect our jobs, setting up registries for religious minorities, and blaming racial minorities for crime rather than pointing to the legacies of institutional racism and slavery.

So besides engaging in the political process ourselves (a noble and necessary activity but outside the scope of this dissertation), what are RPC, pastoral counseling and theology, and religious studies scholars and clinicians to do?

Triune Ethics Theory: Communal Imagination and Mindful Morality

I contend that many of the resources that can help us to understand and address these societal problems are contained in Narvaez's Triune Ethics account of in-group/out-group biases, and in Bellah's analysis of the characteristics of Axial Age religions, which I described in the last chapter. I will turn to Narvaez's moral psychology model first.

To review, Darcia Narvaez's Triune Ethics Theory (2014) can help explain the prejudice, stereotyping, and in-group versus out-group biases of human beings. Under her model, in-group/out-group biases may be a product of reptilian brain-level safety ethic (bunker mindset) processes, alone or in conjunction with neo-mammalian brain-level vicious imagination processes. Both mindsets are dominated by protectionist and aggressive attitudes toward others, geared toward self-preservation and survival. The fear and rage generated by these mindsets compromise the capacity to empathize with others. The cunning of the neo-mammalian brain executive processes also allows for the efficient exploitation and domination of others. According to Narvaez's Triune Ethics model and Gilbert's compassion focused therapy model, neo-mammalian brain-level psychotherapy, meditation, and ethical virtue cultivation practices may work for these individuals, in part, by quelling the reptilian-level fear and anger emotions and enhancing the paleo-mammalian-level engagement ethic processes of emotional resonance and empathy for others (Narvaez, 2014; Gilbert and Choden, 2014).

Yet as we have seen, the ultra-sociality model of Tomasello (2014a) and the social bonding neurochemical research (De Dreu, 2013) suggest that enhancing the paleo-mammalian brain-level engagement ethic processes may not be enough to counter in-group/out-group biases. Human beings may have evolved species-unique, neo-mammalian brain-level collective intentionality capacities for in-group cooperation and collaboration, but not necessarily for cooperation and collaboration for those outside one's group. A further step must be taken. Narvaez sees the solution in the mindful morality mindset of the communal imagination ethic. Mindful morality integrates left-brain neo-mammalian reasoning and perspective-taking capacities with right-brain paleo-mammalian emotional presence and engagement capacities, resulting in moral wisdom or virtue. Moral wisdom is "deep ethical know how": "applying the

right virtue in the right amount in the right way at the right time” (Narvaez and Bock, 2014, 142).

When viewed through the lens of Narvaez’s moral psychology model, the xenophobic appeal of the nationalist and populist movements becomes clearer. The economic, social, and political instability wrought through the nonlinear dynamics of our densely-populated, interdependent, globalized world cause stress, uncertainty, and fear. This ignites the reptilian-level bunker mindset and the neo-mammalian/reptilian vicious imagination processes, which gear toward self-preservation and survival. Fear, rage, protectionist attitudes, and suspicion of the other are the result. Reactionary nationalist and populist leaders provide an easy target for this fear: religious, racial, ethnic, immigrant, and LBGTQ minorities. In my view, the nationalist and populist leaders in America and Europe are exploiting the evolutionary neurobiology of their supporters!

An imperative for religious and ethical leaders today is therefore to identify and cultivate neo-mammalian- and paleo-mammalian-level ethical philosophies and practices that allow us to extend in-group affiliation and empathy to ALL members of our society (including the poor, disabled, infirm, and aged), as well as to ALL members of other races, nationalities, and religions.

Characteristics of Axial Age Religions

In my view, the Axial and post-Axial Age religions contain just these kinds of ethical philosophies and practices. To see how, it will be helpful to review Bellah’s (2011) description of the characteristics of Axial Age religions. As discussed in Chapter VI, Bellah and other scholars maintain that Axial Age religions are comprised of five main components: 1) sacred

written texts and second-order, theoretic commentaries and theologies; 2) transcendental visions of reality; 3) sociopolitical critiques of the oppressive state governments and religions; 4) universalistic ethics that extend love and compassion to all peoples; and 5) individualistic soteriologies and devotional/meditative practices that supplement the older communal rituals and liturgies.

As is evident, all of these Axial Age components are relevant to countering the reptilian brain-level rage, fear, and suspicion of the other wrought by the instability of our globalized world. According to Donald's (2012) and Bellah's (2011) analyses, theoretic culture and transcendental metaphysics first emerged in human cultural history during the Axial Age period of the first millennium B.C.E. The combination of the new analytical, logical, and theoretical forms of thought and the new metaphysical views of the separation of the transcendental and mundane realms directly produced the Axial Age sociopolitical critiques, universalistic ethics, and devotional/meditative practices we know today. All of these components can be considered as neo-mammalian- and paleo-mammalian-level ethical philosophies and practices, and each can help us to extend empathy to all members of our own society and all members of other races, nationalities, and religions.

Martha Nussbaum and Cosmopolitanism

At this stage, I will focus my argument by introducing Martha Nussbaum's theory of cosmopolitanism. Nussbaum is a moral and political philosopher at the University of Chicago. She has written a number of influential books on ancient Greek and Roman philosophy, moral and political philosophy, feminism, the "capabilities approach" to socioeconomic progress, and

liberal education in today's world.¹¹⁹ Several of her works have examined the Ancient Greek and Hellenistic concept of cosmopolitanism, and have applied its lessons to help cope with today's pluralistic, globalized world (e.g., 1997, 2008, and 2010).¹²⁰

In *Cultivating Humanity* (1997), Nussbaum makes a case for the continued importance of classical liberal education, even in today's multicultural world. Nussbaum considers herself a feminist, and advocates for a broad inclusion of feminist and cross-cultural studies in U.S. education. Yet fascinatingly, she turns to Hellenistic and Roman philosophers to help make her case. Much like the interdependent, globalized world of today, the Hellenistic and Roman worlds in the several centuries before and during the Common Era were characterized by a high level of religious pluralism, multiculturalism, and sociopolitical interdependence. A diverse multitude of cultures, religions, ethnicities, and economies were brought together under a relatively loose imperial confederation. The challenge for the philosophers and politicians of the day was to create a social and philosophical order that could hold together the diverse cultures, religions, and ethnicities around a common set of ideals and values (Nussbaum, 1997, 15-67).

Nussbaum states that the Hellenistic and Roman philosophers found this social and political philosophy in the Stoic ideals of cosmopolitanism and the "citizen of the world" (Greek: *kosmopolitês*) (Nussbaum, 1997, 52). Classical liberal education seeks to cultivate all aspects of a human being to produce good citizens oriented toward the good life and the good society. This is accomplished by Socratic education: the "examined life" of reflective deliberation on our views and beliefs. Liberal education is "'liberal' in that it liberates the mind from the bondage of

¹¹⁹ Some of her more influential books include *The Therapy of Desire* (1994), *Cultivating Humanity* (1998), *Not for Profit: Why Democracy Needs the Humanities* (2010), *The New Religious Intolerance* (2012), and *Creating Capabilities: The Human Development Approach* (2013b).

¹²⁰ Several other authors have also recently examined the need for cosmopolitan attitudes in our globalized world, such as a shared ethics of care, respect, mutual recognition, and conversation. See Appiah (2006), Beck (2006), Gunn (2013), and Juergensmeyer, Griego, and Soboslai (2015).

habit and custom, producing people who can function with sensitivity and alertness as citizens of the whole world” (Nussbaum, 1997, 8).

Nussbaum contends that two different versions of cosmopolitanism and the world citizen were developed by Roman Stoic philosophers like Seneca and Cicero. The first is a “sterner” version, in which the world citizen is one “whose *primary* loyalty is to human beings the world over, and whose national, local, and varied group loyalties are considered distinctly secondary” (Nussbaum, 1997, 9). The second version is more “relaxed,” in that citizens can retain primary loyalties to their culture, religion, or nation. However, the citizen must still “recognize the worth of human life wherever it occurs and see ourselves as bound by common human abilities and problems to people who lie at a great distance from us.” The relaxed version was more palatable to Roman sensibilities, and Nussbaum advocates for its use for us, today. I do, as well.

Nussbaum details three capacities that she believes must be cultivated to produce good citizens in today’s globalized, multicultural world. The first is the “capacity for critical examination of oneself and one’s traditions” (Nussbaum, 1997, 9). This is the Socratic examined life. Good citizenship in our democracy requires the ability to critically examine our beliefs, habits, and practices that we have inherited from our traditions. This involves learning “to test what one reads or says for consistency of reasoning, correctness of fact, and accuracy of judgment” (Nussbaum, 1997, 9). Grounding our beliefs in sound reasoning and evidence and submitting them for critique by our peers helps to eliminate unexamined biases and prejudices, including those about peoples from other nations, races, and religions.

Second, we need to cultivate the capacity to see ourselves as “citizens of the world.” Good citizens in our democracy need to “see themselves not simply as citizens of some local region or group, but also, and above all, as human beings bound to all other human beings by ties

of recognition and concern” (Nussbaum, 1997, 10). For Nussbaum, this involves gaining a sophisticated understanding of the complex economic, cultural, political, and technological ways that we are all interconnected in our globalized world. Liberal education should include learning about world history, international law and human rights, international commerce, and about how the various components of the products we buy are grown, sewn, and constructed in many different parts of the world. To empathize with the other, we must first understand who others are, how they live, and how their lives intersect with our own.

Finally, Nussbaum states that we need to develop the capacity for narrative imagination. This involves “the ability to think what it might be like to be in the shoes of a person different from oneself, to be an intelligent reader of that person’s story, and to understand the emotions and wishes and desires that someone so placed might have” (Nussbaum, 1997, 11). This imaginative empathy can come from direct contact with the peoples of different cultures and lands, or from reading about them in novels, stories, or poetry. Interestingly, Nussbaum states that imaginative empathy for other cultures and peoples does not necessary indicate that we cannot evaluate and judge them relative to the standards and norms of our own culture. However, the first step for accurate judgments is always imaginatively “deciphering” the stories, actions, and emotions of others from their point of view (Nussbaum, 1997, 11; see Appiah, 2006).

Cosmopolitanism, the Axial Age, and Buddhism

It is evident that there are a great number of similarities between Nussbaum’s cosmopolitan approach, the Triune Ethics model of Narvaez (2014), and the Axial Age model of Bellah (2011). In my view, this is not a coincidence. The Hellenistic and Roman Stoic religious philosophies have been identified by Bellah (2011) and Taylor (2007) as post-Axial religions.

They are the direct successors of the Socratic, Platonic, and Aristotelian Axial Age religious philosophies of Ancient Greece in the first millennium B.C.E. As such, there are direct historical and philosophical connections between the five characteristics of Axial Age religions and the three capacities that Nussbaum seeks to cultivate in citizen of today's globalized and multicultural world. For example, Nussbaum's first capacity of the critical self-examination of one's tradition appears to be directly related to the Axial Age second-order theoretic thought and the sociopolitical critiques of the reigning states and religions. Nussbaum's "citizen of the world" and narrative imagination also bear considerable similarities to the Axial Age emphasis on universalistic ethics that extend love and compassion to all peoples beyond one's own nation, race, or religion. Fascinatingly, the individual devotional and meditative practices of Axial Age religions are also to be found in Hellenistic and Roman Stoicism, such as the practices of *theoria* (contemplation) and the "therapy of desire" (ethical cultivation) (see Hadot, 1995, 2002; Nussbaum, 1994).

As I outlined in Chapter VI, traditional Buddhism meets all five criteria for an Axial Age religion. It would therefore be fitting that traditional Buddhist philosophies, ethics, and meditative practices would also be synergistic with Nussbaum's cosmopolitanism project and the three capacities she seeks to cultivate. For example, traditional Buddhism contains vast canons of scriptures and highly developed scholastic tradition, and the early Buddhist schools critiqued the regional Indian princes, Hinduism, and the Indian caste system. These are clearly related to Nussbaum's first capacity of critical self-examination of one's tradition and sociopolitical critiques of the reigning states and religions. Moreover, Buddhist philosophies (i.e., nonattachment, not-self, and interdependence) and ethics (compassion, lovingkindness, sympathetic joy, and equanimity for all sentient beings in the universe) are convergent with

Nussbaum's "citizen of the world" and narrative imagination capacities. Buddhist meditative practices also contain vast resources for gaining direct experiential insight (*vipassana*) into the philosophies of wisdom and the ethics of compassion: insight (*vipassana*), tranquility (*samatha*), and, especially, lovingkindness (*metta*) meditation.

Finally, in the last several decades a new Buddhist movement has emerged, called Engaged Buddhism (Queen and King 1996; King, 2009). This movement originated in the 1960s anti-Vietnam War protests of the Vietnamese Zen Buddhist monk, Thich Nhat Hanh. Advocates of Engaged Buddhism seek to reinterpret traditional Buddhist conceptions of interdependence, ethics, and liberation (*nirvana*) in light of the modern sciences and the socioeconomic plight of citizens in third world nations in Southeast Asia, where Buddhism predominates. Engaged Buddhism ethicists tackle contemporary ethical issues like war and peace, economics, ecology, and human rights, while also engaging in political movements to improve the living conditions of the working poor (see King, 2009). I will discuss Engaged Buddhism in more detail in the next section of this chapter.

To conclude, in my view the benefit of Nussbaum's concept of cosmopolitanism is that it succinctly focuses the neurobiological and ethical models and arguments of this dissertation toward democratic political ends. Nussbaum's concepts can help us to understand and counter the reactionary nationalist and populist movements that have arisen in midst of the displacements and instabilities of our globalized, interdependent world. Cosmopolitanism and the "citizen of the world" concepts provide a political slant on Narvaez's moral psychology account of in-group/out-group biases and Bellah's Axial Age analysis of the rise of theoretic culture, sociopolitical critique, and universalistic ethics. In my view, cultivating the capacities for critical

self-examination, world citizenship, and narrative imagination constitutes a powerful antidote to contemporary fear and suspicion of the religious, racial, ethnic, immigrant, and LGBTQ other.

Future Research: Bellah's Concept of Global Civil Religion

Finally, a fascinating area of future research would be to compare Nussbaum's concept of cosmopolitanism with Robert Bellah's concept of "global civil religion." In some of his final articles, public addresses, and blogposts before he passed (e.g., 2010; see Juergensmeyer et al., 2015),¹²¹ Bellah contended that if humanity is to create a truly *global civil society* in the decades to come that can address our global social, economic, and ecological crises, it would likely need to be undergirded by a *global civil religion*. The concept of a "universal civil society" was a frequent subject of European Enlightenment-era philosophers like Immanuel Kant, and has been promoted in recent times by German philosopher Jürgen Habermas (e.g., 1989). In Habermas' rendering, civil society refers to "the public sphere, a realm of thought, argument, and association independent of the state, but leading to the formation of what came to be called public opinion" (Bellah, 2010, 355). In contemporary times, global forms of civil society are embodied in transnational governing bodies like the European Union and the United Nations, international non-governmental organizations like the Red Cross and Green Peace, transnational social movements like women's and LGBTQ rights, and the universal human rights codified in the United Nation's "Universal Declaration of Human Rights."¹²²

Bellah draws on the classical sociology theories of Rousseau and Durkheim to take a further step. Durkheim, especially, had argued that all groups and societies had a religious

¹²¹ See also Bellah's three 2007 blogposts on the SSRC's "The Immanent Frame" website: <http://blogs.ssrc.org/tif/2007/12/24/is-a-global-civil-religion-possible/>, <http://blogs.ssrc.org/tif/2007/12/31/the-fragility-of-global-solidarity/>, <http://blogs.ssrc.org/tif/2008/01/03/religions-and-the-postnational-constellation/>; and Bellah's 2012 address at UC-Santa Barbara: www.global.ucsb.edu/luceproject/papers/pdf/RobertBellah.pdf.

¹²² See <http://www.un.org/en/universal-declaration-human-rights/index.html>

element, which served as a kind of “social glue” that held the peoples together around a common set of shared symbols and values. In his famous and influential 1967 article, “Civil Religion in America,” Bellah had explored the religious elements of American government and society, such as public prayers at the presidential inauguration and myths surrounding the words, deeds, and documents of the Founding Fathers. At the end of that article, Bellah also speculated about the need for and role of a “world civil religion” in the decades to come. In his final works, Bellah (e.g., 2010) had begun the explication of what kinds of shared symbols and values might be needed to motivate the peoples of the world to look beyond “parochial” national interests and gather together in a truly global civil society. In Bellah’s view, only a global civil society can address the growing social, economic, and ecological crises we face today, which transcend the capacity of individual nations to solve. Notably for this dissertation, Bellah identified the universalistic ethics of the Axial and post-Axial Age religions as a paramount source for the shared ethics of a global civil religion: universal love, compassion, care, and mutual recognition, extended to all members of one’s society and all members of other races, nations, and religions.

Sadly, Bellah died in 2013 before the completion of his sequel to *Religion in Human Evolution* (2011), which would have expounded in more detail upon the role of religion in modernity and the prospects of a global civil religion. However, other religious studies scholars, like Mark Juergensmeyer at UC-Santa Barbara (Juergensmeyer, et al., 2015), are taking up this fascinating issue and even relating it to the scholarship on cosmopolitanism in Ancient Greece and Rome (Nussbaum, 1997; Appiah, 2006). Integrating Bellah’s thoughts on a global civil religion with Narvaez’s (2014) Triune Ethics model and Nussbaum’s (1997) research on cosmopolitanism and would be an important and constructive area for future research.

Implications for Pastoral Counseling and Pastoral Theology

Third, in this section I will examine the implications of my integration of attachment, mentalization, and mindfulness within evolutionary and developmental science models for the subfields of pastoral counseling and pastoral theology. In general, I contend that all of the benefits for both pastoral subfields come from an engagement with the novel paradigms I have presented: the contemporary developmental and clinical science models of attachment theory and mentalization; and the Buddhist and mindfulness theories and practices. As I discussed in the Introduction, pastoral counseling and theology have a deep history of engagement with psychoanalytic theories over the last one hundred years (Jonte-Pace and Parsons, 2001). Pastoral counseling and theology also derived from millennia-old Jewish and Christian pastoral care practices (McNeill, 1951), and have a century-old engagement with liberal Protestant and Catholic liberation theologians, among others (e.g., Hiltner, 1958; Ramsey, 2004).

What pastoral counseling and theology do not have is a deep history of engagement with Buddhist models of philosophy, ethics, and meditation. Or, in my view, with contemporary models of developmental and clinical science that are grounded in ongoing empirical and neuroscience research. In the next two subsections, I will describe the benefits for pastoral counseling and then pastoral theology for engaging with these new psychological and religious paradigms.

Implications for Pastoral Counseling

First, I see three main ways that this dissertation can impact and benefit pastoral counseling. The first, and most obvious, way is that this dissertation offers a variety of contemporary, cutting-edge models of clinical and developmental science for pastoral counselors

to draw upon. Over the last six chapters, I have described in detail the theories, techniques, and research data of attachment theory (Cassidy and Shaver, 2008), mentalization theory (Fonagy et al., 2012), developmental neuroscience (Hart, 2011), psychoanalytic intersubjectivity research (Stern, 1985; Beebe and Lachmann, 2002; Schore, 2012), and others. To my knowledge, many or most pastoral counseling theorists and clinicians have not engaged with these kinds of contemporary clinical and developmental science models.

Moreover, the attachment and mentalization models I have presented have the advantage of deriving from the psychoanalytic tradition that pastoral counselors *do* have a long history of engagement with. As I discussed in Chapter I, Bowlby was a psychoanalyst and derived his attachment models, in part, from the British object relations theories of the 1950s. Fonagy is also a psychoanalyst and derived mentalization theory, in part, from the British object relations theories of the 1960s to 1980s. Pastoral counselors will likely discover a plethora of theories, models, and techniques in attachment theory and mentalization theory that they recognize. However, the major new benefit for pastoral counseling, in my view, is that attachment and mentalization theories are also grounded in ongoing empirical and neuroscience research projects, such as the interdisciplinary paradigm of developmental psychopathology (Cicchetti, 2016). Thus, while pastoral counselors should recognize and appreciate many of the themes and techniques in the attachment and mentalization models, they will also be introduced to cutting-edge research on attachment styles, mentalization stages of development, marked affective mirroring, microinteractions and mutual regulation, and the neurodevelopment of the right brain limbic system, among others.

Second, I contend that pastoral counseling can benefit from, and perhaps uniquely utilize, Darcia Narvaez's moral psychology research models (2014), Martha Nussbaum's cosmopolitan

ethics model (1997), and the traditional Buddhist ethical cultivation and education paradigms (Gethin, 1998; Harvey, 2000). Although psychoanalysis and the other various psychotherapies do appear to contain ethical assumptions about the nature and *telos* of human existence, they are usually implicit (see Browning and Cooper, 2004). In my view, pastoral counselors, because of their own normative faith commitments, could be well-positioned to teach and cultivate universalistic ethical values to their clients, in a way that secular therapists do not (or even cannot, according to state ethics codes).

If this is correct, then pastoral counselors may be able to teach and cultivate Narvaez's communal imagination ethic and mindful morality (2014), Nussbaum's three capacities of cosmopolitanism (critical self-examination, world citizenship, and narrative imagination), and the Buddhist ethical principle of extending lovingkindness and compassion to all sentient beings. As discussed, each of these can be considered neo-mammalian- and paleo-mammalian-level ethical philosophies and practices which may help us to extend empathy to all members of our own society and all members of other races, nationalities, and religions. In this way, pastoral counselors may be able to help accomplish an important role in countering the fear, rage, and suspicion of the other resulting from the instabilities of our globalized, multicultural, interdependent world.¹²³

¹²³ An additional area of future research is to compare and contrast Narvaez's moral psychology and ethical cultivation models with traditional Buddhist models of ethical cultivation and meditative practice. As I mentioned in the last chapter, Narvaez's broader project includes a social-cognitive model of character development (Adaptive Ethical Expertise; Narvaez and Lapsley, 2009) and a program for moral education in schools (Integrative Ethical Education; Narvaez, 2006). Narvaez states that most modern moral psychology models are either "bottom-up" virtue theory approaches, which focus on cultivating virtues and excellences in a human agent within a moral community; or "top-down" deontological approaches, which focus on using reason to formulate universal moral principles that can be applied in particular moral situations. Narvaez states that her model combines both approaches: "Experts-in-training are immersed in environments that foster good intuitions about the domain while receiving explicit guidance as to how to think about solving problems in the domain. For example, a working chef practices under the watchful eye of the master chef who models, guides, and advises" (Narvaez and Bock, 2014, 142). A fascinating area for future research and clinical practice would be to integrate Narvaez's moral psychology models with traditional Buddhist ethical models and practices, and teach it within the pastoral counseling setting.

Third, I contend that pastoral counseling can benefit from traditional Buddhist meditative practices and the contemporary mindfulness meditation clinical models. As I discussed in Chapter IV, MBSR and other mindfulness-based therapies have a growing evidence base indicating their effectiveness in treating mental health and health-related disorders (Didonna, 2009). Moreover, in the last section above I also described the possible role of Buddhist insight, tranquility, and lovingkindness meditations in quelling the reptilian brain-related processes and extending the neo-mammalian- and paleo-mammalian-related engagement and empathy processes to all members of our own society and of the world.

To some degree, these Buddhist and mindfulness meditative practices can help fill a void in pastoral counseling in regards to meditation. It is not always well known that Christianity has its own sophisticated tradition of contemplative practices. As a post-Axial Age religion, Christianity inherited and then built upon the devotional and meditative practices of Judaism and the religious philosophies of ancient Greece (see Hadot, 1995, 2002). As well, Christianity has a sophisticated tradition of mystical and apophatic theology that explicates these contemplative practices and experiences (see Turner, 1995; Franke, 2007). However, Christian contemplative practices have received nowhere near the empirical and neuroscientific research attention (or research grant monies) accorded in recent years to the Buddhist meditative practices.¹²⁴ Introducing Buddhist and mindfulness meditative practices to pastoral counseling could be a first step in spurring more clinical engagement with the Christian contemplative tradition.

¹²⁴ For examples of Christian contemplative research, see Newberg et al. (2003) and Johnson et al. (2009).

Implications for Pastoral Theology

Second, I contend that this dissertation can also benefit pastoral theology. I see three reasons why. First, I maintain that the attachment, mentalization, mindfulness, developmental science, and biological and cultural evolution models I have explored in this dissertation are concordant with the new communal-contextual paradigm that has become dominant in pastoral theology in the last twenty-five years. As I noted in the Introduction, in recent decades a sea change has occurred in pastoral theology. The clinical pastoral paradigm which had dominated post-WWII America and which emphasized the correlation of pastoral care with psychodynamic and humanistic psychologies gave way in the early 1990's to the new communal-contextual model. The communal-contextual model utilizes feminist, liberation theology, sociological, and cultural theory perspectives to disclose the destructive patterns of racism, gender inequality, heterosexism, classism, and Eurocentrism embedded in American culture and society (e.g., Smith, 1982; Patton, 1993; Ramsay, 2004; Miller-McLemore, 2014).

Part of this sea change has involved a critique of what communal-contextual theologians see as the over-utilization of, and individualism inherent in, the intrapsychic psychologies of the past. Communal-contextual adherents advocate expanding pastoral theology and counseling beyond psychology to include more communal forms of care and counseling. These include family, group, systems, and congregational-based counseling, and pastoral action and advocacy to transform social structures of inequality (see Graham 1992; McClure, 2010).

I contend that the interdisciplinary paradigms of the extended evolutionary psychology and of developmental psychopathology, which are the overarching interdisciplinary frameworks of Bowlby's attachment theory, Fonagy's mentalization theory, and the biological and cultural

evolution models I present in this dissertation, are synergistic with the communal-contextual paradigm. As I discussed in the Introduction and in Chapter VI, the extended evolutionary psychology and developmental psychopathology paradigms provide interdisciplinary and multileveled analyses of human functioning, from genes and neurons “all the way up” to sociological and cultural systems. Human beings are depicted as active agents who influence their social and ecological environments, but are also “embedded in and transformed by their genetic, epigenetic (molecular and cellular), behavioral, ecological, socio-cultural and cognitive-symbolic legacies” (Stotz, 2014, 1).

In my view, this attention to multileveled analyses that include the spheres of sociology, ecology, and culture are convergent with the communal-contextual emphasis on family, group, systems, and communal forms of pastoral attention and care. Both the communal-contextual model and the new extended synthesis and developmental psychopathology paradigms provide a much broader attention to the multiple levels of human experience, beyond the psychological.

Moreover, as I just discussed above, I contend that Narvaez’s moral psychology model (2014) and Nussbaum’s cosmopolitanism approach (1997) contain rich resources for ethical cultivation and education and for understanding and explaining some of the destructive patterns of racism, gender inequality, and classism that the communal-contextual theorists describe and attempt to transform. In my view, Narvaez’s depiction of the bunker mindset and the vicious and communal imaginations and Nussbaum’s account of cosmopolitanism and world citizenship offer rich theoretical and scientific resources for pastoral theologians to mine.

Second, I argue that Buddhist philosophies, ethics, and meditative practices can also make contact with Miller-McLemore’s recent description of pastoral theology as a “person- and pathos-centered discipline” (2010, 821). In her view, pastoral theologians create a dynamic

“theology of experience.” They produce thick, experience-near descriptions of human angst and human flourishing, of pain and pathos. Pastoral theologians are chroniclers of human meaning, as created within the nitty-gritty, social and cultural particularities of the lives of Christian practitioners (Miller-McLemore, 2010, 824-826).

In my view, the attachment, mentalization, mindfulness, and biological and cultural evolution models I use are convergent with Miller-McLemore’s construct. All of these models envision human beings as embodied organisms embedded in ecological, sociocultural, and cognitive-symbolic systems. Despite the many scientific and neurobiological terms and structures, attention is still focused on lived human experience as it is embodied and embedded in beliefs, practices, and rituals. As I discussed above, Bowlby’s attachment theory and Fonagy’s mentalization theory models also provide a wealth of new concepts, categories, and constructs that can assist Miller-McLemore’s endeavor. The rich chronicling of the intersubjective dance found within early parent-infant attachment bonds and the effects these have on human experience, our capacity to understand and connect with others and to create meaning about ourselves and our social lives, can be a new source for a dynamic theology of experience.

Finally, I maintain that Buddhist philosophies, ethics, and meditative practices all have interesting potentials to dialogue with and even reinterpret traditional Christian pastoral theology categories and topics, such as sin, guilt, shame, pain, suffering, and death and dying. All of these pastoral categories will take on new meanings and contexts for Buddhist adherents who believe in the traditional cosmologies and philosophies of Buddhism. For example, suffering, death, and dying may have different meanings and horizons for Buddhist practitioners who believe in rebirth, and in the impermanence and insubstantiality of the self and the world. Sin, guilt, and shame may also mean different things with different consequences for wellbeing and the spiritual

path for Buddhist adherents who believe in karma. The creation of meaning and the quality of lived experiences generated in these Buddhist contexts have only begun to be examined by pastoral theologians and chaplains like Farley (2005) and Giles and Miller (2012).

Moreover, as I discussed in the Introduction, Buddhist pastoral theologians can draw on a great variety of scholars, theologians, and theorists who have engaged in dialogues between Western and Buddhist themes. Buddhist scholars and philosophers have recently explored the impact on Buddhist philosophies and cosmologies when traditional Buddhist thought encounters Western modern and postmodern paradigms and frameworks. These include scholars in religious studies and comparative theology (e.g., Jackson and Makransky, 2001; Knitter, 2009), feminist theology (e.g., Brock, 1988; Gross, 1993), deep ecology (e.g., Macy, 1991), and evolution and the modern economies and political systems (e.g., Loy, 2015).

Lastly, I contend that there is a real opportunity for contemporary pastoral theologians operating out of the new contextual-communal, systemic, and community-based models of care to dialogue with and even advise and inform the “younger” Engaged Buddhism and Buddhist chaplaincy movements (King, 2009; Giles and Miller, 2012). Christian pastoral theologians have a wealth of experience and wisdom that can guide the nascent Buddhist engagements in providing care in hospitals and communities and in attempting to transform the social structures of inequality and greed (e.g., Graham 1992; McClure, 2010).

Conclusion: The Necessary Role of Evolutionary and Developmental Science Models in Religious Studies and Buddhist Studies Today

Fourth and finally, I advocate for the continued role and place of religion, psychology, and culture (RPC) models of developmental science and evolutionary neuroscience in the

contemporary fields of religious studies and Buddhist studies. Throughout the last six chapters, the Introduction, and this Conclusion, I have sought to demonstrate the contributions that developmental science and biological and cultural models of evolution can bring to analyses of human religious beliefs, behaviors, and practices. These contributions center on the three major premises of this dissertation which I proposed in the Introduction.

First, I have sought to demonstrate that attachment, mentalization, and mindful awareness are psychological capacities that can be integrated with one another using contemporary models of human evolution and human development. The disparities we see in the therapeutic and neuroscientific literatures exist because psychotherapy and mindfulness meditation invoke *different* mechanisms in the brain, which have evolved in *different* periods of mammalian and human history. In order to understand how attachment, mentalization, and mindfulness can be integrated, we need to better understand two chronological lines: human evolution over the last two million years, and the neurodevelopment of children over the first six years of life.

In Chapters V and VI, I demonstrated that attachment processes came first in mammalian neuroevolution (some 200 million years ago). Mentalization came second. It likely developed in our *Homo sapiens* ancestors 100 to 200,000 years ago (MacLean, 1990). Mindful metacognitive awareness came third. It likely only fully entered human cultural history some 2500 years ago with the rise of the Axial Age religions in the first millennium B.C.E. (Bellah, 2011). Moreover, ontogeny follows phylogeny in regards to these psychological capacities. Early attachment relations in the first several years of life have a profound effect on the basic cognitive, affective, and social neurodevelopment of the child, “all the way down” to the genetic and neurochemical levels. Mentalization capacities rely on higher-level neocortex areas of the brain and begin to develop between the ages of four and six. Early attachment relations profoundly affect the

development of mentalization (Fonagy et al., 2012). Mindful metacognitive awareness relies on high-level attentional and metacognitive capacities that likely only develop in an individual in adolescence. But as with mentalization, early (and present) attachment relations deeply shape the quality of mindful awareness capacities cultivated in meditation (Hart, 2011). Finally, I have shown that psychotherapy and the various mindfulness meditation practices achieve their results by improving the neural and psychological functioning of the basic attentional, affect regulation, and mentalization processes that developed within the early attachment bond.

The contributions that an integration of attachment, mentalization, and mindfulness can make to the fields of religious studies and Buddhist studies stem from the fact that all of the developmental and evolutionary models I have presented are grounded in ongoing empirical and neuroscience research projects. They are also consistent with the new extended evolutionary synthesis, extended evolutionary psychology, and developmental psychopathology paradigms I presented in the Introduction (Beauchaine and Hinshaw, 2013; Cicchetti, 2016). As we have seen, these new paradigms provide interdisciplinary and multileveled analyses of human functioning, from genes and neurons “all the way up” to sociological and cultural systems. Human beings are depicted as active agents who influence their social and ecological environments, but are also “embedded in and transformed by their genetic, epigenetic (molecular and cellular), behavioral, ecological, socio-cultural and cognitive-symbolic legacies” (Stotz, 2014, 1).

In my view, the new extended synthesis models of biological and cultural evolution provide a vastly more sophisticated and integrative view of human biological, psychological, sociocultural, and religious functioning than the early modern religious evolution models of the nineteenth century. The new evolutionary understanding is synergistic with the communal-

contextual emphases of Buddhist studies scholars on lived human experience in embodied and embedded beliefs, practices, and rituals (Sharf, 1995, 2005). Moreover, my integration of attachment, mentalization, and mindfulness in this dissertation also provides a much-needed, contemporary developmental model for Buddhist studies. As we have seen, this model can help us to make sense of the kinds of attachment- and mentalization-related problems that meditators often experience, the decompensation suffered by some meditation practitioners, and even the recent scandals perpetrated by Buddhist *Sangha* leaders who were considered to be enlightened (Schoen, 2013). These *modern* models of developmental science can complement the sophisticated *pre-modern* models of human development that Buddhist theorists have proffered in centuries past.

Second, I have sought to demonstrate that Buddhism, like all other religions, is attachment-related, “through and through.” It is true that Buddhist cosmologies and philosophies do not have a Father or Mother God who created the universe and to whom and with whom individuals pray, worship, covenant with, and commune (Gethin, 1998). As well, Buddhist philosophies and practices promote “non-attachment” to doctrines, experience, and even a reified sense of self as part of the path to wisdom and liberation (*nirvana*) from the endless cycles of birth and rebirth (*samsara*). Yet Buddhism is far from being an outlier to other religions. Buddhist doctrines, practices, and experiences are suffused with attachment-related themes, constructs, mechanisms, and dynamics. The cosmologies, narratives, devotions, rituals, and meditative practices of Buddhism have built upon the foundations of love, attunement, protection, care, and support fostered in human attachment and familial bonds, which have evolved over millions of years.

Buddhism does not have a creator Father God. But traditional Buddhists do “take refuge” in the Buddha, the *Sangha* (religious community), and the *Dharma* (teachings and path). They perform devotional rituals to the Buddha, have attachment relations with their *roshi*/teacher/guru, and practice lovingkindness meditations that extend love to all sentient beings in the universe. Attachment themes also show up in the traditional Tibetan child rearing practices described in *The Tibetan Art of Parenting* (Brown, Farwell, and Nyerongsha, 2008), and in the relations between Lobsang Phuntsok and Tashi Drolma at the Jhamtse Gatsal Children’s Community in northern India.

Moreover, I demonstrated in Chapter V that a careful reading of the Buddhist texts indicates that Buddhist “non-attachment” is not the same as “detachment,” “no attachment,” or dissociation in Western psychology (Aronson, 2004). Non-attachment is defined as a quality of “non-clinging” or decentering while in the midst of experience, including within attachment relations. Even for ascetic celibate monks, the emphasis is to non-attach rather than to detach or dissociate from experience.

Finally, in Chapter VI, I demonstrated how the stages of cognitive-cultural development in human cultural and religious history (Donald, 1991, 2012; Bellah, 2011) can also help us make sense of the explosion of interest in Buddhist Insight and mindfulness meditation practices in our contemporary society. As we have seen, an unforeseen consequence of the Axial Age was a “disembedding” of theoretic culture from its roots in episodic, mimetic, and mythic cognitive-cultural modes. The result has been a gradual “antiritualism and demythologization” in Western societies over the centuries, reflected in decreases in participation in institutional religion and civic organizations (Taylor, 2007; Bellah, 2011). Yet Bellah argues that “nothing is ever lost” in human evolution. The older mimetic and mythic modes of cognitive-cultural representation

continue to persist in human mental functioning (Donald, 2012). If this is the case, then the interest in Insight and mindfulness practices may reflect a yearning for primordial forms of social embeddedness, dance, music, ritual, myth, and transcendence which are a part of our evolutionary and cultural history. The social and cultural components of the Buddhist *Sangha* community and traditionalist mindfulness communities, such as *roshi/guru/teacher* attachment relationships, dharma talks, ethical cultivation, and communal rituals, are likely to be crucially important for mental wellbeing and even for progress in wisdom and compassion along the Buddhist path. This may even be the case for secular mindfulness practitioners who eschew traditional Buddhist metaphysics and cosmologies (Bachelor, 1998, 2015; Harris, 2014).

Third, I have sought to demonstrate how grounding traditional Buddhist moral philosophies and ethical cultivation practices in contemporary moral psychology research models can be of benefit to Buddhist studies scholars. Prominent Western virtue theorists, moral philosophers, and Christian moral theologians have recently begun to mine the new models of moral psychology and moral development that are informed by biology, neuroscience, anthropology, and attachment theory (MacIntyre, 1999; Flanagan, 2011; Narvaez, 2014). To my knowledge, Buddhist ethics scholars have not done the same. In my view, integrating Buddhist moral philosophies and ethical practices with Narvaez's Triune Ethics moral psychology model (2014) would make a significant contribution to the field. As discussed in Chapter VI, Narvaez's basic contention is that the quality of early attachment relations affects the development of an individual's moral sensibilities and the capacity to experience empathy for others. Positive and loving early caregiving experiences cultivate a prosocial morality and empathy. Neglectful or abusive early caregiving fosters a fearful or protectionist morality and deficits in empathy.

Buddhist lovingkindness meditation practices, as well as psychodynamic psychotherapy, can ameliorate early attachment deficits and help us to extend empathy to others.

In the Conclusion, I also related Narvaez's moral psychology model and Buddhist ethical cultivation practices to the necessity of cultivating a cosmopolitan attitude of empathy and respect for others in our globalized and interdependent world (Nussbaum, 1997). I sought to demonstrate that Buddhist meditative practices have an important role to play in today's perilous political times by helping us to extend empathy to the "other" of our society and to other races, nations, and religions around the world. Universalistic ethics and empathy is the antidote to the fear, rage, and suspicion of the other that has resulted from the displacements and pressures of our globalized, multicultural, interdependent world.

In conclusion, what I hope to have shown in the last eight chapters is the immense value and potential that the new evolutionary and developmental models have for informing human experience, social relationships, and religious beliefs and practices. Our subjective and intersubjective worlds, and the social, cultural, and religious systems we are embedded in, are the products of a long history of evolutionary development, going back some 200 million years (or even much more). Human experience and socio-cultural systems are built upon the deep foundations of the past. Our lives today are the direct result of a series of evolutionary advances, ranging from the evolution of mammalian social emotions and attachment relations; to primate and early hominid social cognition capacities; to the complex "collective intentionality" capacities and group identities of our *Homo sapiens* tribal ancestors; to the written texts, second-order thought, universalistic ethics, and meditative practices developed within the Axial Age.

As I mentioned in the Introduction, it is my hope that this dissertation can contribute to an attachment-related, “developmental and evolutionary turn” in Buddhist studies that can complement the “relational turn” recently identified by Gleig (2012, 2016).

As the RPC subfield takes up these new attachment, mentalization, mindfulness, developmental science, biological and cultural evolution, and moral psychology models, as I believe they will, these kinds of analyses can help inform and explain fundamental issues in human subjective and interpersonal experience and in religious belief and practice. These models can also help ensure, in my view (and in my hopes), the continued role that RPC and pastoral counseling and theology will play in the universities and seminaries of the future.

APPENDIX A:

ADULT ATTACHMENT INTERVIEW

“Brief Précis of the Adult Attachment Interview Protocol:¹²⁵

1. To begin with, could you just help me to get a little bit oriented to your family—for example, who was in your immediate family, and where you lived?
2. Now I’d like you to try to describe your relationship with your parents as a young child, starting as far back as you can remember.
- 3–4. Could you give me five adjectives or phrases to describe your relationship with your mother/father during childhood? I’ll write them down, and when we have all five I’ll ask you to tell me what memories or experiences led you to choose each one.
5. To which parent did you feel closer, and why?
6. When you were upset as a child, what did you do, and what would happen? Could you give me some specific incidents when you were upset emotionally? Physically hurt? Ill?
7. Could you describe your first separation from your parents?
8. Did you ever feel rejected as a child? What did you do, and do you think your parents realized they were rejecting you?
9. Were your parents ever threatening toward you—for discipline, or jokingly?
10. How do you think your overall early experiences have affected your adult personality? Are there any aspects you consider a setback to your development?
11. Why do you think your parents behaved as they did during your childhood?
12. Were there other adults who were close to you—like parents—as a child?
13. Did you experience the loss of a parent or other close loved one as a child, or in adulthood?
14. Were there many changes in your relationship with your parents between childhood and adulthood?
15. What is your relationship with your parents like for you currently?

¹²⁵ Excerpted from Hesse (2008, 555): “TABLE 25.1. Brief Précis of the Adult Attachment Interview (AAI) Protocol Excerpted from George, Kaplan, and Main (1996).” In Erik Hesse, “The Adult Attachment Interview: Protocol, Method of Analysis, and Empirical Studies.” In Jude Cassidy and Phillip R. Shaver, eds., *Handbook of Attachment: Theory, Research, and Clinical Applications*, Second Ed., 552-598 (New York: Guilford Press, 2008).

[*Note.* The AAI cannot be conducted on the basis of this brief, modified précis of the protocol, which omits several questions as well as the critical follow-up probes. The full protocol, together with extensive directions for administration, can be obtained by writing to Erik Hesse or Mary Main, Department of Psychology, University of California at Berkeley, Berkeley, CA 94720. From George, Kaplan, and Main (1996). Copyright 1996 by the authors. Adapted by permission.]”

APPENDIX B:

EXPERIENCES IN CLOSE RELATIONSHIPS SCALE

“[The ECR-R uses instructions similar to those for the ECR, but replaces some of the ECR items with new ones based on analyses described by Fraley, Waller, and Brennan (2000).]¹²⁶

The following statements concern how you generally feel in close relationships (e.g., with romantic partners, close friends, or family members). Respond to each statement by indicating how much you agree or disagree with it. Write the number in the space provided, using the following rating scale:”

1	2	3	4	5	6	7
Disagree strongly	Disagree	Disagree slightly	Neutral/ mixed	Agree slightly	Agree	Agree strongly

Avoidance Items

1. I prefer not to show a partner how I feel deep down.
2. I feel comfortable sharing my private thoughts and feelings with my partner.*
3. I find it difficult to allow myself to depend on romantic partners.
4. I am very comfortable being close to romantic partners.*
5. I don't feel comfortable opening up to romantic partners.
6. I prefer not to be too close to romantic partners.
7. I get uncomfortable when a romantic partner wants to be very close.
8. I find it relatively easy to get close to my partner.*
9. It's not difficult for me to get close to my partner.*
10. I usually discuss my problems and concerns with my partner.*
11. It helps to turn to my romantic partner in times of need.*
12. I tell my partner just about everything.*
13. I talk things over with my partner.*
14. I am nervous when partners get too close to me.
15. I feel comfortable depending on romantic partners.*
16. I find it easy to depend on romantic partners.*

¹²⁶ Excerpted from Mikulincer and Shaver (2007a, 499-500): “APPENDIX F: The ECR-R Items.” In Mario Mikulincer and Philip R. Shaver, *Attachment in Adulthood: Structure, Dynamics, and Change* (New York: Guilford Press, 2007a).

17. It's easy for me to be affectionate with my partner.*
18. My partner really understands me and my needs.*

Anxiety Items

1. I'm afraid that I will lose my partner's love.
2. I often worry that my partner will not want to stay with me.
3. I often worry that my partner doesn't really love me.
4. I worry that romantic partners won't care about me as much as I care about them.
5. I often wish that my partner's feelings for me were as strong as my feelings for him or her.
6. I worry a lot about my relationships.
7. When my partner is out of sight, I worry that he or she might become interested in someone else.
8. When I show my feelings for romantic partners, I'm afraid they will not feel the same about me.
9. I rarely worry about my partner leaving me.*
10. My romantic partner makes me doubt myself.
11. I do not often worry about being abandoned.*
12. I find that my partner(s) don't want to get as close as I would like.
13. Sometimes romantic partners change their feelings about me for no apparent reason.
14. My desire to be very close sometimes scares people away.
15. I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am.
16. It makes me mad that I don't get the affection and support I need from my partner.
17. I worry that I won't measure up to other people.
18. My partner only seems to notice me when I'm angry.

Note. * Denotes items that are reverse-keyed.”

“When referencing the ECR-R, please cite the following article:

Fraley, R. C., Waller, N. G., & Brennan, K. A. (2000). “An item response theory analysis of self report measures of adult attachment,” *Journal of Personality and Social Psychology*, 78, 350–365.”

APPENDIX C:

REFLECTIVE-FUNCTIONING SCALE

“Qualities which suggest moderate to high RF: ¹²⁷

1. Awareness of the nature of mental states
(i.e., passages which demonstrate awareness of their (1) opacity, (2) susceptibility to disguise, and (3) potentially defensive nature; or which (4) demonstrate awareness of the limitations of insight into mental states, or which (5) make explicit reference to commonly expected reactions in specific situations.)
2. Efforts to tease out mental states underlying behavior
(Includes accurate attribution of mental states to others, recognition of diverse perspectives, taking into account how our own mental states affect behavior [ours and others'] and perceptions [our own and other's of us], etc.)
3. Recognizing developmental aspects of mental states
(Focus here is on how mental states change and evolve, and includes statements reflecting awareness of dyadic and family interactions. Note: awareness of intergenerational influences must contain explicit references to mental states and their influence on interpersonal behavior to count as +RF. Descriptions of interactions without understanding of the role of mental states is not scorable.)
4. Showing awareness of mental states in relation to interviewer
(Credit given for explicit efforts to clarify and help interviewer keep track of material, explicit and accurate references to the likely impact on interviewer of material a subject has provided, statements demonstrating awareness that interviewer may not share subject's mental state in relation to one topic or another.)

Demand vs. Permit Questions:

Demand Questions -- must be rated

(Note: there is no penalty for non-reflective response if speaker has already responded to demand question in answer to previous question, or if a negative response seems plausible, e.g. no rejection described or few feelings about the loss of someone barely known to the subject):

1. Why did your parents behave as they did during your childhood?
2. Do you think your childhood experiences have an influence on who you are today?

¹²⁷ Excerpted from Fonagy et al. (1998, 38-42): “Reflective Functioning Manual: Outline of scoring procedures.” In Peter Fonagy, Mary Target, Howard Steele, and Mariam Steele, *Reflective-Functioning Manual: Version 5: For Application to Adult Attachment Interviews*. Unpublished manuscript (London: University College London, 1998).

3. (As a probe for influences of childhood experience) Any setbacks?
4. Did you ever feel rejected as a child?
5. (As a probe for losses) How did you feel at the time and how have your feelings changed over time? (Score separately for each loss.)
6. Have there been changes in your relationship with your parents since childhood?
7. Any demand-type question that an interviewer adds in a particular interview (i.e., “And why do you think they did that?”)

Guidelines for rating identified passages:

Note: All responses to demand questions must be scored, as well as relevant responses to permit questions.

-1 Negative RF

Response must:

- 1) be distinctly anti-reflective (i.e., hostile or actively evasive, usually because question is perceived as an assault or attack)

or

 bizarre (impossible to understand without making the assumption of irrationality on the part of the subject)

or

 inappropriate in the context of the interview (i.e., complete non-sequiturs over-familiarity, gross assumptions about the interviewer).

1 Absent but not repudiated RF

Response must:

- 1) be given in response to a demand question.
- 2) be passively rather than actively evasive.
- 3) be accompanied by little or no hostility.
- 4) contain no evidence of:
 - a) awareness of the nature of mental states;
 - b) explicit effort to tease out mental states underlying behavior;
 - c) recognition of the developmental aspects of mental states;
 - d) interaction indicative of the awareness of the interviewer’s mental state
- 5) leave the interviewer no better off in terms of knowledge of the mental states of the subject, caregiver or other having read the passage than he/she was before reading it

Response may include:

- 1) concrete explanations of behavior in terms avoiding reference to mental states (i.e., explanations may be sociological, excessively general, or framed in terms of external, physical circumstances, etc.).

or
- 2) self-serving distortion (recollections which are highly egocentric, self-aggrandizing and/or contain extraordinarily arrogant claims to insight).

Note: The self-serving quality must be such that it leads the subject to make attributions that are clearly inaccurate and not simply biased or incomplete. Inaccurate efforts to tease

out mental states underlying behavior are not sufficient to get a '1' rating unless they are *also* grossly self-serving.

3 Questionable or low RF

Response must:

- 1) contain some suggestion of mentalising efforts on the part of the subject which is nevertheless,
- 2) devoid of any element that makes reflective functioning explicit (i.e., it never reflects mixed emotions, conflict or uncertainty about beliefs and feelings of others).

Response may frequently:

- 1) make use of mental state language without making clear or explicit that the subject genuinely understands the implications of their statement.
- 2) appear somewhat clichéd, banal, superficial or 'canned.'
- 3) be excessively deep and detailed yet unconvincing and/or irrelevant to the task.

5 Definite or ordinary RF

Response must:

- 1) contain some feature which makes reflection explicit (i.e., explicit reference to the nature or properties of mental states, how mental states relate to behavior, or mental states in relation to the interviewer).
- 2) not be a cliché (though it does not need to reflect sophistication).

Response may:

- 1) show evidence of one of the six features (listed below) for assigning a rating of '7' in the context of a very simple observation of mental states which would otherwise rate only a '3.'

7 Marked RF

Response must:

- 1) contain some feature which makes reflection explicit (i.e., explicit reference to the nature or properties of mental states, how mental states relate to behavior, or mental states in relation to the interviewer).

and

- 2) meet at least one of the following. The passage:
 - ♦ is sophisticated (meeting at least 2 categories of qualities which suggest moderate to high RF).
 - ♦ is unusual or surprising, casting an original perspective (which is none-the-less readily understandable).
 - ♦ is complex or elaborate, described in unusual detail with indication that multiple mental states attributed to a person are considered in relation to one another.
 - ♦ places mental states within a causal sequence. Subject considers how the mental states arose, how they influenced behavior and what impact they have on subsequent perceptions, beliefs and desires.
 - ♦ provides evidence of an interactional perspective (outlining interactions of mental states between two people or within one person's mind).
 - ♦ contains an acknowledgment of a particularly painful situation, with appropriate thoughts and feelings.

9 Full or exceptional RF

Response must:

- 1) show the above features of '7 - marked RF' to an usually high degree (i.e., this response would be in the top 10% or less)

or

- be given for a particularly charged and emotionally difficult subject in which maintaining even ordinary levels of reflective functioning could be considered exceptional.
- 2) have a strikingly personal character; it should enable the rater to feel confident that it is experienced as personally significant and meaningful.

Response may frequently:

- 1) demonstrate full awareness of important aspects of all protagonists within an interaction, such that the protagonists are placed in relation to one another in terms of their feelings and beliefs and these are sufficiently complex and elaborate to convince the rater of their accuracy.

Rules for aggregating RF ratings into overall ratings

General Points:

- 1) Make a general judgment of the interview as a whole, rather than averaging scores on individual passages.
- 2) When confident that a particular transcript falls between two classes, assign the even number between those classes as an overall rating."

APPENDIX D:

FIVE FACET MINDFULNESS QUESTIONNAIRE

“Items are rated on a 5-point Likert-type scale ranging from 1 (*never or very rarely true*) to 5 (*very often or always true*).¹²⁸

Factor 1: Nonreactivity to Inner Experience

I perceive my feelings and emotions without having to react to them.

I watch my feelings without getting lost in them.

In difficult situations, I can pause without immediately reacting.

Usually when I have distressing thoughts or images, I am able just to notice them without reacting.

Usually when I have distressing thoughts or images, I feel calm soon after.

Usually when I have distressing thoughts or images, I “step back” and am aware of the thought or image without getting taken over by it.

Usually when I have distressing thoughts or images, I just notice them and let them go.

Factor 2: Observing/noticing/attending to sensations/perceptions/thoughts/feelings

When I’m walking, I deliberately notice the sensations of my body moving.

When I take a shower or a bath, I stay alert to the sensations of water on my body.

I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.

I pay attention to sensations, such as the wind in my hair or sun on my face.

I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.

I notice the smells and aromas of things.

I intentionally stay aware of my feelings.

I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.

I pay attention to how my emotions affect my thoughts and behavior.

Factor 3: Acting with awareness/automatic pilot/concentration/nondistracton

I find it difficult to stay focused on what’s happening in the present.

It seems I am “running on automatic” without much awareness of what I’m doing.

I rush through activities without being really attentive to them.

I do jobs or tasks automatically, without being aware of what I’m doing.

I find myself doing things without paying attention.

¹²⁸ Excerpted from Baer et al. (2006, 34-35): “TABLE 3: Factor Structure of Combined Items From Five Mindfulness Questionnaires in Sample of 613 Students.” In Ruth A. Baer, Gregory T. Smith, Jaclyn Hopkins, Jennifer Krietemeyer, and Leslie Toney (2006), “Using Self-Report Assessment Methods to Explore Facets of Mindfulness,” *Assessment*, 13(1): 27-45.

When I do things, my mind wanders off and I'm easily distracted.
I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.
I am easily distracted.

Factor 4: Describing/labeling with words

I'm good at finding the words to describe my feelings.
I can easily put my beliefs, opinions, and expectations into words.
It's hard for me to find the words to describe what I'm thinking.
I have trouble thinking of the right words to express how I feel about things.
When I have a sensation in my body, it's hard for me to describe it because I can't find the right words.
Even when I'm feeling terribly upset, I can find a way to put it into words.
My natural tendency is to put my experiences into words.
I can usually describe how I feel at the moment in considerable detail.

Factor 5: Nonjudging of experience

I criticize myself for having irrational or inappropriate emotions.
I tell myself that I shouldn't be feeling the way I'm feeling.
I believe some of my thoughts are abnormal or bad and I shouldn't think that way. .
I make judgments about whether my thoughts are good or bad.
I tell myself I shouldn't be thinking the way I'm thinking.
I think some of my emotions are bad or inappropriate and I shouldn't feel them.
I disapprove of myself when I have irrational ideas.
Usually when I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about."

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