

Contemplative Meditation and Neuroscience: Prospects for Mental Health

Denis Larrivee^{1,3} · Luis Echarte²

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Abstract Numerous studies show that personal spirituality developed through prayer positively influences mental health. Phenomenological and neuroscientific studies of mindfulness, an Eastern meditative prayer form, reveal significant health benefits now yielding important insights useful for guiding treatment of psychological disorders. By contrast, and despite its practice for millennia, Christian meditation is largely unrepresented in studies of clinical efficacy. Resemblances between mindfulness and disciplinary acts in Christian meditation taken from the ancient Greek practice of askesis suggest that Christian meditation will prove similarly beneficial; furthermore, psychological and neuroscientific studies suggest that its retention of a dialogical and transcendent praxis will additionally benefit social and existential psychotherapy. This paper thus argues that study of contemplative meditation for its therapeutic potential is warranted.

Keywords Mindfulness · Contemplation · Askesis · Social neuroscience · Psychotherapy · Existential · Mental health

Introduction—Therapeutic Insights from Mindfulness

Numerous studies testify to the direct relationship between personal spirituality and positive mental health (Newberg 2010, 200–203; AbdAleati et al. 2016). Although long recognized as a defining feature of spirituality, prayer, paradoxically, has received only sporadic empirical attention (Van Oudtshoorn 2012), and underlying mechanisms that may contribute to improved mental health remain, in many cases, unidentified. A significant

✉ Denis Larrivee
sallar1@aol.com

¹ Neiswanger Bioethics Institute, Loyola University Chicago, Chicago, IL, USA

² Institute of Ethics and Culture, School of Medicine, University of Navarra, Pamplona, Spain

³ 1032 W. Sheridan Rd, Chicago, IL 60660, USA

exception has been mindfulness meditation, particularly the practice of its Western variant. Drawn from East Asian religious practices, the Western and secularized form retains methodological features that are similar to those of its parent origin, but eschews a specific religious affiliation (Kabat-Zinn 1982; Davidson 2003; Newberg 2010; Lutz et al. 2015). Contemplative meditative practices, on the other hand, are relatively undocumented in mental health contexts, leaving a widely practiced meditative form unexplored.

The contemporary appeal of mindfulness lies in an impressive and reproducible range of phenomenological benefits that cross cognitive and corporal boundaries, and which have therefore been proposed as beneficial to mental and bodily health (Lutz et al. 2015; Farb et al. 2010; David and Hayes 2011). In one of the earliest studies of the impact of meditation on physical health, Herbert Benson demonstrated the activation of parasympathetic responses in the body, which he termed the relaxation response (Benson 1975). Mindfulness has since been employed to effectively reduce stress and anxiety, and as a regulative tool for addictive and impulse control behaviors (Shonin et al. 2014). It has also been shown to effectively reduce symptoms of chronic bodily pain, apparently by decoupling afferent sensory input for pain during meditation and by eliminating its future anticipation (Kabat-Zinn 1982). Additionally, mindfulness exhibits other demonstrable corporal effects, such as reduced inflammatory responses, telomere shortening, and cell aging (Pace et al. 2012; Epel et al. 2009, 2013; Rosenkranz et al. 2013).

The experience dependency of these phenomenological changes has led to the postulate that mindfulness produces fundamental anatomical and physiological changes in the human brain analogous to those that are introduced during skill acquisition (Munte et al. 2002). Research in neuroplasticity has identified, in fact, an array of mechanisms activated during learning that enable the brain to shape its anatomy and physiology to accommodate experiential input, including subcellular and molecular alterations, microcircuit modifications, and network restructuring that generate localized as well as global changes in brain tissue over short and prolonged time scales (Benfenati 2007), changes that are likely to occur during meditation. Studies of mindfulness confirm this postulate. Major nerve tracts, such as the corpus callosum, for example, are increased in size and myelination (Luders et al. 2012), and diffusion tensor imaging reveals a more ordered myelin profile, suggesting that communication between major brain regions is improved. Gyrfication is also selectively increased, particularly that of the insula, a brain region closely associated with the integration of autonomic, affective, and cognitive processes (Luders et al. 2012). Significantly, anatomical variation is accompanied by distinct physiological changes that are correlated with the duration and frequency of meditative practice (Moss et al. 2012).

Recent efforts attempting to consolidate the plethora of empirical observations into a theoretical whole have therefore focused on the role of attentional regulation in extended meditative practice, which is thought to shape its phenomenological features (Holzel et al. 2011; Raffone et al. 2010). Raffone et al characterization of mindfulness practice, for example, as an open presence and nonjudgmental awareness of sensory, cognitive, and affective fields of experience, links underlying psychological constructs with those of attention, intention, and attitude (Fresco et al 2007), i.e., its observing, attending to, and nonjudgmental and nonreactive elements (Baer et al. 2006). Holzel et al. (2011), similarly, propose constructs related to attentional and emotional regulation, and to bodily awareness. Moreover, preparatory exercises such as focused attention are often recommended prior to mindfulness training, while other formative exercises recall practices, or thought exercises, similar to those of ancient classical philosophers that were intended to train the mind and regulate the emotions.

Emerging models, accordingly, attempt to frame meditation-induced brain changes within broader schema that include brain regions postulated to evoke intentional, attentional, and emotional regulatory processes (Holzel et al. 2011; Vago and Silbersweig 2012). Imaging studies that show reduced activity in the amygdala following meditation training, for example, are classed within a broader network effecting emotional regulation (Farb et al 2010). In support of this classification, neuroimaging research has established that attentional mechanisms require the participation of the anterior cingulate cortical region, a network involved in switching between activation of different brain networks (Xue et al. 2011), apparently for detecting conflict presence in incoming information streams. These studies show that in experienced meditators there is greater activation of the rostral ACC over that of age- and education-matched controls, while electroencephalogram (EEG) data show the presence of frontal midline theta rhythms during meditation, generally thought to demonstrate the involvement of attention demanding tasks related to ACC activity and that of the prefrontal cortex. Experienced meditators, moreover, appear to elicit brain activity in the dorsolateral and prefrontal cortex (DLPFC), regions that are related to orientation, particularly visual, events (Fan et al. 2003), an observation consistent with an increased massing of the DLPFC (Cahn and Polich 2006). Based on these findings, Raffone et al have proposed a neurocognitive model relating the meditative event to underlying neural substrates that employ the binding of large-scale dynamic assemblies accessing consciousness (Dehaene 2015; Spencer et al. 2009) and that are linked to networks associated with an interoceptive awareness of the self (Vago and Silbersweig 2012). Key neural features of mindfulness thus now appear to include intentional domains of the brain, such as the prefrontal cortex, self-referential regions such as the cortical midline, integrative, and distributive centers such as the anterior cingulate cortex, and emotional centers such as the amygdala.

Models that invoke strengthened attentional regulation during meditation are thus considered promising for treatment of mental disorders that involve deficiencies of attentional functions (Holzel et al. 2011), such as attention-deficit hyperactivity disorder (ADHD) and bipolar disorder (BD) (Fountoulakis et al. 2008). Consistent with this interpretation, several studies show meditation related improvements in attention that may ameliorate ADHD symptoms, while others link BD to dysfunctional performance of the ACC. ACC activation, for example, decreases during cognitive tasks in such patients (Gruber et al. 2004) and state-dependent changes are seen in ACC resting activity (Fountoulakis et al. 2008). Mindfulness has therefore been proposed as a potentially effective therapy for BD by facilitating the development of skills enhancing ACC performance (Stange et al. 2011).

Despite significant progress in elucidating mindfulness mechanisms and positive prospects for some of its clinical applications, however, it remains uncertain whether mindfulness meditation will benefit a number of other classes of mental illness. Significantly, many mental disorders are linked to disruptions in the brain's capacity for social behavior (Cacioppo et al. 2014; Cacioppo et al. 2010; Davidson and McEwen 2012). Deficits in any one of the component processes can result in difficulties in personal and interpersonal behaviors that mark such illnesses. Both Axis I and II disorders, for example, are characterized by a range of cognitive deficits that negatively impact social interactions and/or by disabilities in social cognition. Loneliness and its depressive symptoms, additionally, are widely prevalent in today's digital culture. Secular meditative practices, however, have typically neglected social content (Holzel et al. 2011; Kabat-Zinn 1990; Benson 1975; Segal et al. 2002) and not incorporated it into mindfulness-based psychotherapies (Cacciottolo et al. 2008).

In contrast to secular mindfulness, Christian meditation adopts de facto a relational praxis that shares with its Eastern religious counterpart an emphasis on positive

dispositional attitudes toward others (Vago and Silbersweig 2012) while also explicitly structuring an intersubjective, relational order to a higher and universal order. For Catholics, for instance, the Congregation for The Doctrine of the Faith's 1989 statement on Eastern and Western meditative forms makes clear the personal and communitarian nature of Christian meditation (Ratzinger 1989). 'This present letter seeks to reply to this urgent need, so that in the various churches the many different forms of prayer, including new ones, may never lose their correct and communitarian nature.....prayer is a personal, intimate, and profound dialogue between man and God...' This siting, accordingly, accesses therapeutic modalities not typically invoked in contemporary mindfulness psychotherapies. The reestablishment of trust in abuse victims, for example, necessarily presupposes social intercourse (Herman 1992), whereas the achievement of peace through the forgiveness of assailant seems the very last step of any real healing (Macaskill 2002). Importantly, studies in social psychology are now complemented by neuroscientific studies that have greatly improved the understanding of the neuroscientific basis of social behavior (Cacioppo et al. 2014). Insights into the underlying neural substrate have emerged from a cluster of domains together termed theory of mind, the ability to assess the thoughts and intentions of others, and from specific disease etiologies, such as autistic spectrum disorder. Neural circuits that are associated with various forms of interrelational bonding have also been identified, e.g., those facilitating parental or empathic relations. Finally, a variety of neuroimaging techniques now converge to make the assessment of mental disorders that cross temporally and spatially dispersed domains feasible, and to monitor recovery progress when distinguishing healthy from abnormal subjects.

Another large class of mental health disorders includes existential ailments that today require an increasing percentage of limited psychotherapeutic resources (Frankel 2002). Significantly, the prevalence of existential, psychiatric ailments is increased by contemporary philosophies on the nature of man that diminish individual worth. The secular culture's conferral of ultimate value on individual right of choice, especially, has left him in the precarious position of being subject to an arbitrary claim to his own meaningfulness (DeLubac 1967), a condition reinforced by the atomistic nature of his existence. Even worse some modern psychiatric movements identify this lack of meaning as the source of mental illness, i.e., noogenic neurosis (Frankl 1967). Subject to such cultural constraints that deprive the individual of personal meaning, modern mindfulness practices lack the force of therapeutic redress.

Progress is also being made in understanding man's approach to personal meaning at metaphysical, psychological, and neural levels that are likely to be pertinent to contemplative meditation and the therapy that may evolve from its practice (Van Kaam 1966; Peterson and Seligman 2004). Peterson and Seligman's character taxonomy, for example, identifies transcendence, the personal relation to a higher source of meaning, among the most frequently and culturally distributed character virtues, for 'preventative' therapeutic care. Existential psychotherapies, moreover, emphasize this basic psychological need in psychological models of the individual (Van Kaam 1966; Muto 2013). Unlike mindfulness, a personal relationship ordered to God, one emphasized in contemplation, is inherently meaningful and grounds the awareness that its meaningfulness is both unconditional and permanent.

Parallels in the disciplinary approaches of Christian and mindfulness meditation make it likely, moreover, that both meditative practices yield common phenomenological experiences that are likely to have common and corresponding neural origins. Such approaches,

in fact, were adopted by their ancient protagonists before being appropriated by Christians in recognition of the close relationship between spiritual/moral and cognitive health benefits (Hadot 1995). Significantly, the recognition of this correspondence has been the stimulus for cultivating intentional and motivational meditative practices of good will in Buddhist traditions also (Vago and Silberstein 2012). Additionally, recent retrievals of askesis have been undertaken with renewed interest in their practical, as opposed to theoretical, aspects, i.e., as a training in virtue rather than a theory of ethics (Antonaccio 1998). Taken together, these observations suggest a close correspondence between Christian meditation, spiritual and ethical cognitive training, personal transformation, and mental health.

Accordingly, this paper will argue that the positive health prospects for mindfulness meditation are pertinent to Christian contemplation as well; indeed, Christian contemplation is uniquely poised to extend the range of mental health benefits beyond those of mindfulness, warranting investigation for its psychotherapeutic potential. In light of the historical connection between contemplative meditation, classical cognitive exercises, and mindfulness, moreover, this paper will thus also argue that ethical conceptions undergirding ancient classical exercises and those taken from Western and Eastern religious traditions constitute a proper heuristic from which such studies can be framed, and a praxis for the evolution of transformative and restorative mental health care.

Building on Mindfulness—Contemplative Meditation and Spiritual Exercise

When John of the Cross speaks of the labor of meditative practice, he reflects on the common recognition by all Christian masters of the effort of bringing one's mind to attentive and sustained focus in meditation. Indeed, Teresa of Avila's experience in prayer offers vivid testimony to the perseverance needed when beset by distractions, mind wandering, interruptions, and reluctance over prolonged intervals, an experience recorded more than a millennium earlier in Augustine's *Confessions*. Trained in the ancient classical philosophical exercises that he had learned prior to his conversion, Augustine adopted their discipline in his approach to meditation to facilitate its practice, an approach that came to profoundly inform later Christian meditation (Augustine 1997).

Hadot's designation of these ancient practices as 'spiritual' (1995) both echoes and underscores Augustine's understanding of their use for personal transformation, that is, as a classical pursuit undertaken in recognition of the perceived relationship between self-mastery and mental well-being. Like these ancient philosophers, Augustine intended the exercises for more than merely mental apprehension in discourse or theory, but also for the formation of the psyche in its intellectual, emotional, and ethical dimensions. Its classical pursuit testified to the general recognition then of the perceived relationship between self-mastery and mental well-being.

In the view of these classical philosophers, self-mastery was the fruit of personal effort and achieved only through self-training. For this reason, cultivation of the mind was never sporadic, but organized according to regularly taken cognitive goals (Hadot 1995). For example, reading, memorization, and meditation frequently comprised practice schemes. In resemblance to today's mindfulness practitioners, they embraced both the recognition of the need for disciplined repetition and attentive engagement to a cognitive end.

Hadot's study, among others (Wimbush and Valantasis 1995), however, also opens a contrary and provocative line of inquiry into the retrieval of askesis in the current era within the context of ethics and culture, one that may be applied to contemplation. Underlying the rationale for such retrievals has been the dual recognition of the role of personal formation not only for transformative and mental well-being but also of its cultural conditioning (Antonaccio 1998), whether acknowledged or not. Indeed, given current cultural predilections such a shaping can result in the formation of persons who may be culturally assimilated but who nonetheless experience personal ethical and psychological dissonance. Contemporary parallels that perceive in mindfulness a formative process for alleviating mental distress, and a necessary prelude to a more flourishing lifestyle through attentional control, focus, and emotional regulation alone raise; therefore, the issue of whether underlying and modern assumptions on which mindfulness is premised renders the formative process inadequate to its stated goal of psychological well-being.

In this context processes linking mindfulness to attentional and emotional regulation are proposed as primary factors in promoting mental health (Holzel et al. 2011). Holzel et al., for example, specifically reference the regulation of a cluster of constructs, including emotional redirection, reappraisal and extinction, and body and self-awareness, all of which can be selectively emphasized to accommodate varying psychological disorders, personality types, and situational conditions. These proposals reveal that for mindfulness practitioners the perceived route to cognitive health-related benefits passes by way of a mental freedom from externally and internally imposed events, that is, solely through a regulation of mental content. These intentions and expectations may be compared with Christian meditative practice, which, while sharing common disciplinary roots, articulates a different rationale and objective.

Common elements are seen in Augustine's adoption of the ancient formative practices as a point of entry into Christian meditation, which make it likely, therefore, that the phenomenological content of his meditation resembled that of contemporary mindfulness meditators. His spiritual exercises, however, were distinguished from those of classical philosophers, and by extension those of contemporary meditators, in seeking more than the acquisition of meditative skill and cognitive control alone, but the attainment of a phenomenological state seen as transformative. By freeing himself from mental distractions that dissipated focus and attention away from his intended spiritual object, Augustine instead sought to prepare himself for a relational encounter.

Haring (1967) describes this uniquely Christian dimension that distinguishes Christian meditation from its secular and Eastern counterparts 'The dialogical character in prayer is most fully realized in the so called passive or mystical prayer, in which the divine motion is in the foreground of consciousness, and divine love stirs the heart..' Such a statement is revealing for its emphasis on the relational and affective transformation of the meditator, indicating that while Christian meditation shares experiential modes common to secular mindfulness, and even more so with dispositional practices of Eastern religious spiritual exercise, its emphasis on relational and transformative ends is likely to secure additional benefits not readily secured through either of the latter.

What appears to distinguish the respective meditative forms in their initial praxis, in fact, is their ascription of the role of personal liberty in meditation. Whereas the secular version seeks to secure a freedom from imposition, that is, a mental freedom from emotional and cognitive distractions, the freedom acquired through contemplative discipline in Christian meditation, i.e., via a contemplative askesis, is used to further its relational and transformative end. By limiting itself solely to cognitive training, mindfulness implicitly

attributes its promotion of mental health primarily to the *self*-regulation of mental activity, a perception grounded in the notion that mental health is localized to the brain and individual alone (Holzel et al. 2011). Contemplative meditation, however, inverts the order of this perception, conceiving of mental health as flowing from its relational context. Consistent with this latter perception, Christian models propose that mental health flows from its alignment with an external and universal order, i.e., a relational order that lies beyond rather than exclusively within the individual (Moncher and Titus 2009) to which the brain is progressively transformed. This also means that because external reality, and not only the self, might cause suffering, contemplative meditation induces new attitudes and also behavioral changes in the individual, i.e., new and active ways of *being in the world*. Accordingly, we next argue that through its focus on a universalist and relational end contemplation promotes a progressive flourishing of mental health.

Social Psychotherapy and Contemplation

A contemplative retrieval of askesis in relation to a universalist ideal opens two avenues into psychotherapy (Antonaccio 1998). In the first, its practice within a universalist perspective appears fruitful for personal transformation in view of the intrinsic, rational, and affective order of cognition (Hadot 1995) that has its origin in objective, indeed metaphysical, relations with a universally valid source of subjectivity. This avenue lays emphasis on the preservative and flourishing aspects of mental health. The second contemplative practice opens a route to personal restoration via its capacity to forge relational bonds. This feature emphasizes the recuperative domain of mental health, involving the reformation of disrupted social relations that figure prominently in most mental disorders (Cacioppo et al. 2014).

Mental Health Flourishing

Nino's psychotherapeutic study of Augustine's Confessions (2008) intriguingly opens a movement into the first by pointing out that contemplative formation seeks to establish not only relational but also transcendent ends. This means that its specific objective is the structuring of a universally grounded intersubjective encounter, and that its psychotherapeutic benefits flow from both contexts. In support of this interpretation, Nino references Augustine's focus on a subjective presence that lies inward yet beyond the self. 'How shall I call upon my God? Who will grant me to find peace in you?' (Nino 2008). By privileging this space, Augustine establishes a focal center that is recollected from a multitude of unrelated stimuli, evoking a phenomenological experience of pervasive and interiorized subjectivity. Key to this phenomenology is both its reciprocal and subjective orientation and its use of ethical and universalist referents. Marion (Fritz 2009; Robinette 2007), after Levinas, has characterized this subjective experience as psychologically saturating, revealing thereby the unseen, but powerful essence of another subjectivity viewed as universal, rational, and empathic. Mounier develops this notion by further identifying the experience with a locus of moral induction that he designates as the 'operational basis for communication and the primordial experience grounding personhood' (Mounier 1950). Taken together, the contemplative act is thus seen to begin a transformative movement rooted in a phenomenology of ethical disparity and universal subjectivity, one molding the

relational movement. Far from the Cartesian self, human identity finds in such rich dialogues its innermost relational nature.

Importantly, Augustine's experience shares features common across widely divergent cultural and historical periods, suggesting the presence of underlying constructs unique to the contemplative and human condition. Placing himself silently before God, for example, he asks, 'What indeed am I to you?' (Nino 2008). Teresa of Avila, likewise, expresses similar sentiments in a vastly different era, captured in her metaphorical 'mirror of humility' (Anderson 2006). Significantly, neuroscientific studies evidence the engagement of such constructs in personal interactions, suggesting a natural and multilevel ordering of cognitive activity in basic perceptions of self-other that are activated during contemplation. For example, neuroscience has revealed underlying neural events that evoke multiple dimensions similar to those of the contemplative experience, including subjective perception, distinctions between self and other, and the ability to mentalize the thoughts and intentions of others. Among these, EEG patterns recorded from individuals when alone differ significantly from those obtained in the presence of another person (Dumas 2011), such as an enhancement of the power of alpha waves, an index of inhibitory top down control that is related to preparation for social interaction. These experiments demonstrate that the mere presence of another is sufficient to dramatically alter neural activity. Neurological data, moreover, reveal the brain's ability to clearly distinguish between the percepts of self and other. Decety and Sommerville (2003) show, for example, that while a common representational network of self and other is embedded in the brain, their neural bases are sited to contralateral loci within the intraparietal cortices. In fact, neuroscience documents many brain circuitries devoted to ascertaining the intentions and thoughts of others that have been thematically encapsulated in the theory of mind model (Rizzolatti et al. 2001). Such studies underscore the natural significance of evaluation to moral and self-ordering that transpires in a relational intersubjective encounter.

In exploring the role of subjectivity for ethical appraisal, Wojtyla has ascribed to this primal experience the basis for eliciting movement toward moral goodness (Wojtyla 2011). By this, he means that the perception of ethical dissonance between the self and the subjective presence of the Other constitutes the impulse generating the awareness of a need for moral transformation. Such a reading has two implications. First, it sites contemplative askesis within a transformative act that is morally framed. Eastern religious meditation similarly recognizes the efficacy of ethical transformation for attaining mental well-being (Vago and Silbersweig 2012), a therapeutic strategy that has been recently invoked to formulate an ethical 'transcendence' used to overcome self-directed, often narcissistic forms of 'grasping.' Unlike Christian contemplation, however, this ethical transformation is not understood to emerge from an intersubjective encounter, remaining therefore at a predialogical level. Second, it links the transformative process to a phenomenological and metaphysical reality that is subjective, that is, one constituted by a personal presence. Wojtyla clarifies, however, that this subjective referent is neither individually nor culturally preconditioned. In his view, this would reduce the experience of morality to its particularist circumstances rather than to a universalist order, leaving moral transformation captive with its incipient tendency toward cognitive dissonance (Antonaccio 1998). Accordingly, he introduces a personalist norm that is contingent on the metaphysical origin of the experience of subjectivity, and that is the object of recognition eliciting the moral experience, an object seen to transcend the subjective self.

Building on Charles Taylor's observation (1989), Maria Antonaccio, like Wojtyla, points out that in current efforts toward the retrieval of a moral and spiritual askesis it is precisely the universalist notion of morality and ethics that is lost. In a modern cue that can

be directly applied to modern mindfulness, Taylor states ‘..gives rise to the notion of the subject in its modern sense....involving a new localization, whereby we place within the subject what was previously seen as existing, as it were, between knower/agent and world, linking and making them inseparable’ (Taylor 1989). Echoing Wojtyła, Antonaccio instead points to the subjective perception of the good that lies latent in the external and subjective source of subjectivity and that is the act, reason, and direction of a universal moral askesis, one absent in mindfulness formulations.

The historical record reveals, furthermore, that it is this universalist alignment that extends the transformational process through the contemplative trajectory. Augustine’s famous meditative turn, for example, identifies the dialectic between moral dissonance and transformative union that is activated by contemplation ‘Our hearts are restless until they rest in you’ ((Book I, Chapter 1), which Teresa of Avila has likened to an incarnational trope, thereby making the transformational process contingent on the presence of God’s Word ‘Thy Word in me’ (Anderson 2006). Common to these understandings is the need to achieve a personal reconciliation that moves from a siting in moral disparity to one of transformative union, in order to reconcile one’s weakened self with the goodness located in the subjective reality of the person of God’s Word. Recalling the biblical image of the ‘spring of water welling up to eternal life,’ Anderson, for example, evokes the Teresian metaphor of subjective awareness that sees in the soul a reflective surface mirroring the Christ image. The Word’s presence, accordingly, is here understood to further transformation by eliciting the progressive inscription of God’s Image in the contemplative act. This opening into the beauty of the Sacred Humanity likewise testifies to the latent aesthetic inciting the soul, to which Marion’s (Robinette 2007) characterization ascribes the rationale for extending the contemplative encounter. In this aesthetic, the phenomenological perception of beauty thus constitutes the internal and reflected, yet intersubjective union between personal emptiness and the Sacred Image ‘By looking at His purity we shall see our own foulness...’ (Teresa de Avila 2013, 20). Consistent with its teleological praxis, the dialectic refrains from temporal circumscription, instead spiraling through an indefinite series of dialogical and dialectical exchanges.

The role of intersubjectivity in the emergence of the self, indeed, is not a new issue in developmental and educational psychology. In fact, there are many evidences about the relationship between dysfunctions in social skills and weak, broken or absent selves. Autism Spectrum Syndrome is probably the clearest example of how problems in communicating and interacting with others may affect self-recognition and self-referential language. However, it is not the only one: cortical blindness, congenital deafness, radical isolation—as in the case of *enfant sauvage*— show the essential necessity of others and social interactions in the building as well as sustaining of one’s self (Evans 1982; Barresi and Moore 1996; Ozonoff 1997).

Their utility to self-transformation and to psychological well-being can be seen in their resemblance to known stages of psychological maturation. In a widely accepted understanding, normal psychological development proceeds through a self-structuring process that occurs in and through intersubjective relations. On this basis, Piaget (Lombo 2011), for one, proposes a well-known schema for psychological development, in which the self is progressively ordered in and through an externalized referencing, one that ordinarily occurs in familial settings. Infants, for example, are sensitive to contingent maternal movements, responding in kind by mutually, coregulatory interactions (Dumas et al. 2014). Lacan, moreover, also concludes that the rise in self-awareness proceeds through a mirror stage structurally configuring the subjective self (Webster 2002). By eliciting this

subjective self through a progressive identification with the Christ Image, the contemplative act thus recapitulates a normal maturation sequence.

Complementary studies from neuroscience, moreover, also evidence a similar developmental paradigm in which self-integration depends progressively on mutual subjective interactions that transpire between child and adult. Early stage infants, for example, have been shown to possess a proto Mirror Neuron System (Lepage and Théoret 2007) and a mentalizing network (Keysers and Perrett 2004) that equips them to elicit, anticipate, and synchronize intentions. This system is evident into adulthood and is apparent in the symmetrical and asymmetrical interbrain fMRI patterning that reflects a temporal interplay and self-responding to another's intentions (Dumas et al. 2014).

Neuroscientific studies show, further, that self-formation proceeds via two routes, beginning with an intrapersonal domain and proceeding through an interpersonal one, that is, through a stage of self-recognition and one of self-elicitation, processes that resemble the contemplative experience. Intrapersonally, the sense of self appears to be structured first in recognition processes elicited by the body's self-motion through environmental space. Existing models, such as the comparator model, posit that neural self-formation is structured by the differentiation of body movement from that of the environmental surround, a process that appears pertinent to thought ownership also. Schizophrenic patients, for example, are postulated to have deficiencies in internal mechanisms that establish self-identity (Weigmann 2013). Interpersonally, socialization proceeds via the synchronization of sensory motor loops, seen even in an infant's very first dyadic interactions (Fogel and Garvey 2007). In adults the establishment of intersubjective relations through mutual awareness and communication, furthermore, creates synchronous zones of operative circuits that bind the respective neural centers together. Significantly, this is consistent with cognition theories like enaction and environmental dynamical coupling that postulate similar cognitive mechanisms, as well as broadly utilized mechanisms for establishing relations. Finally, functional MRI hyperscanning (Dumas 2011) shows strong anatomical and functional similarities across individuals responding to the same stimulus source, with the corresponding emergence of a collective intelligence that constrains individual information processing (Fusaroli et al. 2014). These observations closely resemble the phenomenology of the contemplative act in which the self seeks to appropriate the Subjective Object through a progressive and transformative mirroring.

Taken together, they illustrate numerous parallels with contemplation that may be of potential utility for therapeutic study. Exploiting these parallels is advantaged, moreover, by the cross-fertilization of what are increasingly recognized as overlapping domains. A treatment praxis that approaches care of the whole individual as dynamically sited is also salient, therefore, to an objective intending mental health flourishing rather than to an exclusively recuperative end.

Restoring Mental Health

Contemplative formation can be expected, additionally, to be of broad utility to the restoration of mental health. In this regard, Augustine's Confessions offer an especially poignant portrait of the detrimental impact on mental health of narcissistic pursuits that lead to self-dissolution and self-isolation. Significantly, self-isolation constitutes a principal feature of most mental disorders (Cacioppo et al. 2014) including generalized depression associated with loneliness, a chronic problem in elderly populations (Ernst and Cacioppo 1998; Vrticka and Vuilleumier 2012), and depressive pathologies, such as major depressive disorder (BD), with a lifetime prevalence of nearly 1 in 5, that evidences a range

of social deficits (Phillips et al. 2003). Neuroscience is now revealing that principal cerebral circuits integrating social cognition, such as those relating to theory of mind and facial processing, are disrupted in these cases and are likely to be further damaged in social circumstances that exacerbate exposure (Millan et al. 2012). Such studies emphasize that positive mental health entails more than emotional constraints, but requires, especially, emotional satisfaction attained through positive social, that is, intersubjective, relations. Together, they argue that a contemplative discipline emerging from a relational psychotherapy is well poised to address narcissistic and hedonic malaise and to strengthen social dysfunctions that characterize many mental disorders. Indeed, Schjoedt et al. (2009) have shown that highly religious participants recruit areas of social cognition in personal prayer.

The case of psychological trauma is illustrative. A core experience of psychological trauma lies in disempowerment and relational disconnection; key to trauma psychotherapy has thus been the early recognition that disrupted relations and social instability constitute future impediments to successful psychological resolution. As Herman (1992) notes, in the absence of new connections and personal ‘empowerment’ recovery is not possible. Contemplative experience, by contrast, addresses these lacunae by eliciting positive social relations; moreover, it is perennially available (Ratzinger 2007; Mounier 1950). ‘Devotion to the person, therefore, whether love or friendship, cannot be perfect except in continuity.’ (Mounier 1950). Indeed, more than 1600 years ago Augustine underscored the significance of this ever present access for psychological equilibrium, one experienced ‘therapeutically’ in the presence of the One who never fails ‘Blessed are those who love you O God, and love your friends in you. They alone will never lose those who are dear to them, for they love them in one who is never lost’ (397, Book IV, chapter 9, 14).

The ability to elicit relational and transformative dimensions, significantly and moreover, is a familiar theme in psychotherapy (Nino 2008). Here, the role of the therapist functions to restructure the patient psychological profile by reconfiguring the order of affection and meaning, identifying points of digression that have led to disordered profiles. As Nino’s study shows (2008), contemplative reformation also consolidates narrative digressions by relating them to its formative center, which is to say the Word of God within the contemplative space.

Augustine’s story dramatically illustrates how alienation and self-fragmentation follow on narcissistic self-indulgence, with its subsequent need for personal reconfiguration. This primal and universal condition of malaise marks the inner tensions created by the unrestrained pursuit of multiple desires. Their gratification generates a personal instability, forging stable bonds among desires independently competing for attention. Working through the restructuring of the complex cognitive network laid down by a conflicted will is arduous and requires both perseverance and fortitude. From Augustine, we read ‘I entered under your guidance the innermost places of my being; but only because you had become my helper was I able to do so.....You set me down before my face, forcing me to mark how despicable I was.....I knew that this was what I ought to do to want to go there...but to want it valiantly and with all my heart’ (397, Book VII, chapter X, 16).

Increasingly, impediments in the path to psychocoherence and affective integration are attributed to the medium of neuroplasticity, where repeated acquiescence to personal inclinations forges neural networks that underly habitual behaviors that are increasingly difficult to disentangle (Berridge and Kringelbach 2008). Competing desires are grounded in a neural design that is naturally ordered to serve the multiplicity of psychic and affective goals that constitute the individual (Davidson 2003). Affective socio-emotional responses, particularly, are linked in varying degrees to reward circuitry, a generalized neural domain

that operates to reinforce positive valences toward a variety of goal-oriented behaviors. Repetitive acquiescence thus reinforces neural linkages within the reward network that are resistant to a dynamic reordering. Tensions generated by competing impulses that trace their origin to conflicted and habitual patterns can only be resolved, as in their generation, by repetitive acts that reorder and restructure previously formed attachments (Hampson 2012).

Freedom from such attachments is the necessary precondition for developing habits that are exteriorized, relational, and self-giving, meaning that former indulgent habits must be cognitively molded in order to assist in the development of virtue. They are the necessary prelude for dialogue, communication, and altruistic self-other relations. Such psychological reformation only proceeds through effortful communication, that is, as the cluster of activities that elicit a unified, reciprocal self-giving, including detachment from self-interest, envisioning the self from the perspective of the other, generosity of spirit, and continuity of commitment (Mounier 1950).

Social discourse in the contemplative space assists this process by its intentional pursuit of personal communion, without the experience of self-dissolution characteristic of Eastern meditative forms (Holzel et al. 2011). Contemplative dialogue thus promotes cognitive reformation by directing the patient's orientational and kinetic identity toward the relational encounter. Narcissistic self-orientation is therefore disengaged, beginning with the ethical evaluation that promotes an outward and other directed view. Unlike the acquiescence to self-will and hedonic desires that create conflicting tensions and isolation, contemplation elicits a psychological reformation through relational channels that enhance self-valuation, creating within the individual a revelatory axis of relation in reciprocal responses that link self to the Other, and that is phenomenologically ordered to forging stable interpersonal bonds. Contemplation, therefore, reverses the 'self-implosion' of narcissism, enhancing both psycho and social stability.

Contemplative Meditation and Existential Psychotherapy

Today's existential illnesses comprise another numerically substantial and conceptually broad class of mental disorders not readily amenable to mindfulness psychotherapy, but one for which contemplation appears to be uniquely suited. Existentialist features affected in these disorders include finiteness, aloneness, personal value, freedom, and meaning (Frankel 2002), concerns that have increased in contemporary society due to a weakening of traditional values and the growing alienation of man from himself. Exacerbating the trend toward personal meaninglessness are philosophical developments that prioritize value contingency to the natural order, with a corresponding loss of man's former anthropocentric siting (Onishi 2011; Rae 2014). This decentralization has the unfortunate psychological consequence of creating an ontological vacuum where the loss of this privileging has been replaced by impersonalistic forces seen as indefinitely extended (Chandler 2013).

Rooted in the phenomenological and existential domains of philosophy, existential psychotherapy has focused on elucidating the experiential foundations of the human condition, and of addressing the dialectical tension between freedom and finiteness, and the perceived problematic between being and self-value, meaning, and aloneness. Therapeutic modalities have tended to converge on a core set of theoretical premises in which the

person is viewed holistically, that is, where his life as a whole contextualizes thoughts, feelings, and behaviors (Farber 2012).

Constructs originating in positivist perspectives, however, have generally failed to address the existential malaise created by the sense of human finiteness, aloneness, and personal devaluation that persist even after such therapy. These issues remain pertinent for mindfulness, which ultimately sites the individual patient to a biological level where behavior is determined by a neural architecture alone. This understanding necessarily limits mindfulness for existential therapy. To circumvent such lacunae contemporary approaches either (1) revert to humanistic frameworks for personal meaning and valuation that rely on social relevance only, or (2) incorporate anthropological perspectives that ground human anthropology within a spiritual metaphysic. The latter perspective sites the individual to a universal and relational framework that is structured on a rationalist and empathic ground. Situated therein the individual is neither alone, undervalued, or powerless (Ratzinger 2007). Within this framework, psychotherapy attempts to merge an essentially spiritual understanding of man with psychological constructs that reflect broadly understood human existential needs. This approach is consilient with contemplative meditation.

The model most widely assimilating this perspective in praxis, introduced by Van Kaam in the 1960s and termed existential anthropological psychology (1966), adopts the anthropological perspective that man is spiritually relational and subject to an ongoing formative process. Unlike humanistic approaches which view the person as socially and environmentally circumscribed, this model adopts a teleological perspective, that is, the formative process is oriented toward a transformative and transcendent objective. This psychotherapeutic objective is thus intended not to instrumentally replace an individual perception of reality but to address the sources of existential malaise that reflect a universally shared existential dimension. Indeed, Peterson and Seligman find the virtue of transcendence emerging consensually across cultures and throughout time and include it in their taxonomy of core moral virtues needed to constitute the fulfilled human condition (2004). As understood by these cultures, transcendence forges connections between the self and a higher purpose in which the individual discovers an ultimate source of meaning. It enables the individual to establish for himself a relationship with an external world that is both distinct from ordinary modes of engagement and empathic toward a fundamental explanatory ground of being, evoking a sense of awe and awareness of the mystery behind observed reality. In its absence, the patient suffers an existential malaise characterized by meaninglessness and lack of purpose.

Unlike more restricted frameworks for existential psychotherapy, the Van Kaam model views contemplation as the site of an existential and transformative space (Muto 2013). This perspective resembles classical askesis in its affirmation of a universal linkage between the individual and the world, which had constituted its metaphysical presuppositions (Antonaccio 1998), and was fundamental to practices adopted by Christians. The ancient correlation between physics and ethics was thus held in praxis as essential to its transformative efficacy. As Pierre Hadot points out ‘These exercises have as their goal the transformation of our vision of the world and the metamorphosis of our being. They therefore have not merely a moral, but also an existential value’ (1995, 127). This existential and metaphysical dimension is made explicit in contemplative meditation.

Here the formative inscription of the Christ image acquires a metaphysical cast, existentially linking the individual to a source of subjective being that is at once rational and empathic. This source, termed the radical formation mystery, recalls the humanistic concept of ‘field of consciousness,’ but invokes a transcendental and metaphysical conception

of the origin of being that lies outside the self. In citing Bernard of Clairvaux's characterization of the contemplative space as that site where existence and meaning fuse, for example, Muto thus also emphasizes its existential relevance to psychotherapy (Muto 2013).

For the patient, the contemplative discipline shapes the perception of the order of being in which the ego's unchallenged freedom is waived in the awareness of its self-limitation and exchanged for a transcendent reliance, that is, it is contingent on the Subjective Other. Seen in the existence of the created world is the substantial meaning behind its generation, revealing not simply a personal order but also a relational order to the 'ratio' that gave them birth, and the psychological counter to a purely physicalist metaphysic (Nino 2008; DeLubac 1967; Lemieux 2011).

Transcendence, Neuroscience, and the Human Belief System

How does the phenomenological sense of transcendence, with its elements of belief, awe, other referencing, self-possession, self-determination, and intentionality relate to a neural configuration that may underpin or contribute to its experiential features? In an understanding that seeks to assimilate so complex a construct, it becomes evident that any neural underpinning will include an exceptionally broad range of dynamic systems that to lesser and greater degrees are activated by the individual. In an effort to explicate the apparently universal behavior that underwrites intentional actions, cognitive neuroscience proposes an operational construct that is postulated to encompass multiple neural domains, termed the human belief system. This postulate and the hypothesized architecture that is said to obtain are inferred from a cross-fertilization of philosophical conceptions relating to the nature of beliefs and systems approaches to neural operation.

A widely accepted notion of beliefs referenced in such hypotheses is states of the mind that have the property of being about things, things in the world and things in the mind, as well as abstract things, events in the past as well as those imagined (Churchland and Churchland 2013). These states are said to reflect propositions, statements that describe what the belief is about and, therefore, what would make it true. Such statements are characterized by an attitude of acceptance with regard to their veracity.

Because many beliefs that are expressed as propositional attitudes are characteristically held simultaneously, a significant feature thought to constitute the belief system is the coherence of beliefs one to another. As Donald Davidson states 'There is no assigning beliefs to a person one by one on the basis of his verbal behavior, his choices, or other signs no matter how plain or evident, for we make sense of particular beliefs only as they cohere with other beliefs, with preferences, with intention, hopes, fears, expectations, and the rest' (1980, 221). The form of such an architecture is thus thought analogous to a web, tethered to a core set of structural members with beliefs that express greater coherence lying closer to the core. Quine and Ullian (1978) designate this a 'spider' model with the core formed from rigid deep-seated beliefs and the web from more tenuous ones. Theoretical models of the formation of neural structures, accordingly, invoke linkage mapping where closely associated beliefs constitute tightly bound networks (Churchland and Churchland 2013). Such models are analogically informed by neuroscientific findings related to topographical mapping of spatial fields for navigational foraging (Moser 2004) that are proposed to underlie abstract conceptions as well. Beliefs about self and personal identity, in consequence, are structured by a neural architecture relating self and world, that is, a physical and existentialist perception of a world that lies beyond the self. Such an architecture thus appears to afford the physical substrate likely to ground human capacities for perceiving

reality, which is to say a physical instantiation of the classical Aristotelian correspondence view of truth (Auletta 2016; Lemieux 2011). In contrast, mindfulness promotes attitudes that, in some way, put on hold such temporal and meaningful links between individual and his niche. In other words, it induces a strong restructuring of beliefs and feelings that jeopardizes mental stability. In fact, links among existential belief are not easily changed and much more difficult to renounce.

Such insights on neural mechanisms that contribute to existentialist perceptions underscore the complementary nature of the distinct organizational levels of the human being, unveiling a consilient portrait of the contemplative act with human psychological and neural ordering. As such, they strike a promising note on the psychotherapeutic prospects of contemplation in existentialist therapy.

Presuppositions and Conclusions

Ancient and contemporary fascination with self-formation re-enacted today in secular therapies and self-help manuals, not to mention a host of diet, exercise, and health regimes, testify to the enduring appeal of self-training for the purpose of personal transformation (Antonaccio 1998). Shared by today's mindfulness meditators, current practice reflects an understanding that improved mental health passes by way of better cognitive control. Neuroscience and psychotherapeutic studies have begun to confirm this intuitive perception and theoretical and practical models now paint a positive portrait of mindfulness prospects for preventative and restorative mental health. Left unstated, however, are the presuppositions that inform conceptions of positive mental health and that ground secular forms of mindfulness therapy. These presuppositions limit the conception of mental health to one of personal dependence and elaborate a psychological model that is restricted to the individual alone.

While recognizing the intrinsic role of the individual in structuring the circumstances of his recovery, mindfulness psychotherapy nonetheless thus also imposes a self-limitation (Vago and Silbersweig 2012) on what is in reality a dyadic and interactive dimension. This is to say that the individual is ceaselessly engaged in a relational interaction that is coextensive with all aspects of himself, from a biological and physical to a social to an existential, universal, and subjective orientation (Van Kaam 1966). This relational and metaphysical reality constituted a fundamental presupposition of ancient cognitive exercises (Hadot 1995), Christian contemplation and, in its dispositional manifestation, Eastern religious meditative practice as well (Budhaghosa 1991). Increasingly, neuroscientific (Cacioppo et al. 2014) and psychological (Peterson and Seligman 2004) findings are consistent with this fuller understanding of the multiple dimensions of the individual. This new understanding recognizes his complex reality, who remains nonetheless a unified, metaphysical entity (Van Kaam 1966). The need to conceptually restrict psychotherapeutic care to clinically frame its praxis, therefore, ought not to obscure this unitary nature also without hampering the ultimate objective of care, the individual as a whole. If so, prospects for contemplation in mental health are likely to be positive.

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