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YELLOWBRICK[®] *journal*

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Mission

Y*ellowbrick Journal* is the official publication of Yellowbrick Foundation, a not-for-profit organization, whose mission is to support research, training and community education regarding the emotional, psychological, and developmental challenges of adolescents and emerging adults, ages 14 through the young 30's. *Yellowbrick Journal* is dedicated to the dissemination of work that informs the Yellowbrick model—a trauma informed, research-based treatment model that combines the most current contributions of developmental psychology, neuroscience, innovative psychotherapies, strength-based strategies, and wellness medicine. *Yellowbrick Journal* highlights cutting-edge theory and research that informs our understanding of emerging adults from a holistic perspective. *Yellowbrick Journal* also publishes articles on applied work that has demonstrated effectiveness and is particularly dedicated to work that emphasizes multi-specialty evaluation, therapeutic residences, research-based strategies, and life-skills interventions. *Yellowbrick Journal* represents the voices and perspectives of those who serve as the catalysts for the evolution of Yellowbrick—emerging adults and all who are dedicated to the optimization of their potentials.

Letter From The Editors

Issue VI

We are pleased to deliver to you the 6th Issue of *Yellowbrick Journal of Emerging Adulthood*. Reflecting back on where we were when we launched *Yellowbrick Journal* in 2009, so much has changed. In our original Editorial Introduction in Issue I, we discussed that the concept of emerging adulthood as a developmental phase had just itself emerged and began to be further researched and consolidated. In August 2009, *The New York Times Sunday Magazine* article, *What is it about 20-somethings?* explored the question: what's the new normal and featured Yellowbrick as the national leader in the treatment for traumatized and troubled youth.

Adolescents and emerging adults with serious mental health problems and developmental histories of trauma are at risk for unrelieved suffering, self-damaging behavior and under-achievement. They often strain their connections with family, peers and Community at the very time they need the most support. Acceptance of illness and the need to change are painfully difficult for young people and their families. How to be helpful as a professional can be equally challenging as adolescents and emerging adults often present for assistance with complex multifaceted circumstances involving multiple DSM V diagnosis, trauma responses, addiction & other compulsive behaviors, neurodevelopmental and cognitive impairments, and family systems which have long been stressed beyond their capacity.

Yellowbrick Journal has matured into a home for a wide variety of literature written to enhance our understanding, assessment, diagnosis, and treatment of adolescents and emerging adults with serious mental health problems and trauma. Within this past decade there have been significant advances in systems theories and neuroscience and much effort is being applied to integrate such findings and insights into innovative approaches to psychotherapy. We are honored and grateful to present in this Journal VI issue work from prominent clinician scholars and thought leaders who are expanding the frontier of hope for troubled young people and their families.



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Laura Viner, Ph.D.

Handwritten signature of Jesse Viner, M.D.

Jesse Viner, M.D.

Moving Forward: New Findings On The Right Brain And Their Implications For Psychoanalysis

Allan N. Schore, Ph.D.

Keynote address to the American Psychological Association Division of Psychoanalysis 2017 Conference, (with permission) "The Times They Are A-Changin'...How About Us?"

Introduction: I'd like to thank the American Psychological Association Division of Psychoanalysis for their invitation to present this keynote address. Over the years I've had a number of opportunities to present my ideas here, but this is a special opportunity to offer some thoughts about the future of the field. Indeed in April 1995 in my first contact with Division 39 I introduced my recently developed ideas on neuropsychology and interpersonal neurobiology on the occasion of the 100th anniversary of Freud's *Project for a Scientific Psychology (1895)*. Soon after I published "A century after Freud's *Project*: Is a rapprochement between psychoanalysis and neurobiology at hand?" in the *Journal of the American Psychoanalytic Association*. Referring to Freud's early career in neurology the *Project* represented his attempt "to furnish... a psychology which shall be a natural science" (Schore, 1997, p. 295).

In 1994, in *Affect Regulation and the Origin of the Self* I asserted that right brain social-emotional and regulatory structures and functions represented such a contact point, and that the time was right for a rapprochement between psychoanalysis and neuroscience. Over the ensuing three decades I continue to elaborate the interpersonal neurobiological perspective of regulation theory to describe how beneath levels of conscious awareness, brains align and synchronize their neural activities with other brains, especially in emotional interactions. The theory also describes how the development of the right brain-mind are shaped continuously by social experiences, especially those involving emotional relationships, including therapeutic relationships.

Indeed over the last three decades I have built upon Freud's *Project* in order to elaborate modern neuropsychology, the study of the brain systems that process information at a nonconscious level, specifically suggesting that the right brain represents the psychobiological substrate of human unconscious. This rapidly expanding research on the right brain acts as a source of the essential origins, adaptive functions, rapid dynamics, and pathogenesis of the human unconscious. These experimental, theoretical, and clinical studies can elucidate the deeper mechanism of the invisible, omnipresent unconscious in everyday life.

Furthermore, recent discoveries in neuroscience of the right brain and neuropsychology of the unconscious mind can act as an integrating force in psychoanalytic theory and clinical practice. Neuropsychology, located in the right brain integrates various psychoanalytic theories of different functions of the mind, all of which are centered in the fundamental construct of psychoanalysis, the unconscious, the central organizing principle of the field. The construct of the unconscious has thus shifted from an intangible, immaterial,

metapsychological abstraction of the mind to a psychoneurobiological heuristic function of a tangible brain that has material form. Thus, we now have a rejoinder to previous critics of psychoanalysis: scientifically-informed psychoanalytic theory can generate hypotheses that can be experimentally tested as well able to formulate more complex clinical approaches. Brain research thus offers valuable data to psychoanalysis, "the science of unconscious processes" (Brenner, 1980). On both fronts the theory is now genuinely "heuristic," defined by the *Oxford Dictionary* as "serving to find out or discover something."

Referring to the conference title, "*The Times They are a-Changin'...How About Us?*" I will begin with changes within the psychotherapy office and re-formulations of theoretical psychoanalysis, and then advances and new directions in clinical psychoanalysis and psychoanalytic psychotherapy. Finally I will conclude with thoughts on what the conference organizers specifically asked me in their invitation, how the "interface of neuroscience and psychoanalysis will challenge us to think about how our field needs to change as we move forward?" Everything that follows is an expansion of regulation theory, a theory of the development, psychopathogenesis, and treatment of the right brain unconscious subjective self. What I continue to offer is a broad ranging theory, a systematic exposition of the general principles of a science. The internal consistency, coherence, scope, pragmatic usefulness, and power of the theory is expressed in its ability to formulate testable hypotheses and generate research, as well as to generate evidence-based clinical interventions.

Implications Of Right Brain Laterality Research For Psychoanalytic Theory

Brain laterality (hemispheric asymmetry), originally discovered in the 19th century, is now experiencing a resurgence in neuroscience. This rapidly expanding research is describing the functional and structural differences between the left and right brains, and thereby between a conscious "left mind" and an unconscious "right mind." A large body of studies are converging to support the idea of a left brain surface, verbal, conscious, analytical explicit self versus a right brain deeper non-verbal, non-conscious, holistic, emotional, corporeal, subjective implicit self. The right brain is thus the psychobiological source of the rapid spontaneous information processing of the psychoanalytic unconscious mind.

Overviewing human studies Iain McGilchrist (2009) concludes, "The right hemisphere...has the most sophisticated and extensive, and quite possibly most lately evolved, representation in the prefrontal cortex, the most highly evolved part of the brain" (p. 437). In more recent work (2015) he offers characterizations that bear directly upon clinical psychoanalysis: "The right hemisphere both grounds our experience of

the world at the bottom end, so to speak, and makes sense of it, at the top end" (p. 100), that this hemisphere is more in touch with both affect and the body, and that "neurological evidence supports what is called the primacy of affect and the primacy of unconscious over conscious will." (p. 100). Further support for the construct of a right brain unconscious mind comes from neuropsychology. According to Tucker and Moller (2007) "The right hemisphere's specialization for emotional communication through nonverbal channels seems to suggest a domain of the mind that is close to the motivationally charged psychoanalytic unconscious" (p. 91).

Writing in the journal *Neuropsychoanalysis* Guido Gainotti (2005) asserts,

The right hemisphere subserves the lower 'schematic' level (where emotions are automatically generated and experienced as 'true emotions') whereas the left hemisphere the higher 'conceptual' level (where emotions are consciously analyzed and submitted to intentional control) (p. 71).

In another contribution (2012) he cites neurological data indicating that the unconscious processing of emotional information is subsumed by a right hemispheric subcortical route. These data confirm Freud's hierarchical structural theory. They are also consonant with my own model of hemispheric asymmetry, first articulated in 1994, that the right brain is centrally involved in not only the *intrapsychic* implicit processing and self regulation of emotions and social information, but also in the *interpersonal* communication and interactive regulation of emotion by a right brain *relational* unconscious, via right brain-to-right brain communications, of face, voice, and gesture. Current neurobiological models of Freud's unconscious are now shifting from focusing on unconscious mental contents to adaptive, essential unconscious psychobiological processes.

Indeed, psychoanalysis is currently undergoing significant changes in its central construct, the dynamic unconscious, which for its first century was defined as conscious material that has been repressed by an active force that removes certain elements unacceptable to censorship from consciousness. Yet, by 1915 Freud stated, "the repressed does not cover everything that is unconscious. The unconscious has the wider compass: the repressed is a part of the unconscious" (1915, p. 166). This reformulation is the central theme of a recent book, *Unrepressed Unconscious, Implicit Memory, and Clinical Work* by Craparo and Mucci (2017). Within these chapters a number of authors, including myself, link *implicit* right brain functions with the "*unrepressed unconscious*," that is, other essential functional contents of the wider domain of the unconscious. In an earlier work (Schore, 2010) I concluded that the unconscious contains much more than what is repressed by the conscious mind, highlighting the essential role of not only implicit cognition but implicit affect, communication, and regulation in current relational psychoanalytic models. I then discussed recent developmental and neurobiological studies of implicit processes in early development and psychopathogenesis of the implicit subjective self, as well as implicit affective processes in psychotherapeutic change processes.

In my own ongoing work I continue to offer a large body of research implicating right brain structural systems in implicit, rapid, and spontaneous anticipation, recognition, expression, communication, and regulation of bodily-based emotional states beneath levels of awareness (see Schore, 2012). In very recent neuroscience authors are reporting studies on "Right hemisphere dominance in nonconscious processing" (Chen & Hsiao, 2014), concluding that the right hemisphere has an

advantage in shaping behavior with implicit information whereas the left hemisphere plays a greater role in expressing explicit knowledge. Hassin (2013) cites a large body of research documenting the adaptive functions performed by the human unconscious:

The function of extracting patterns from our environment, also known as implicit learning, has been repeatedly demonstrated; maintaining evidence from past experience, also known as memory, can happen outside of conscious awareness; people can extract information about emotion and gender from subliminally presented facial expressions; comparing oneself with others, a central social function, occurs nonconsciously and even with subliminally presented others; and physical sensations affect perception and social perception...A review of the literature through functional glasses quickly reveals that many functions that were historically associated with conscious awareness can occur nonconsciously (p. 200).

The Unconscious system also contains imprints of early relational trauma, as well as the defense against this dysregulation, dissociation. Clinically, current therapeutic models are experiencing a shift from left brain repression to right brain dissociation, especially in preoedipal psychopathologies. In 2003 I cited extant neurobiological research suggesting that repression is a developmentally more advanced left brain defense against affects that are represented at the cortical level of the right brain, while the earlier appearing and more primitive dissociation is a right brain defense against traumatic affects like terror, rage, and shame that are stored subcortically in the right brain (Schore, 2003b). In *Awakening the Dreamer* Bromberg (2006) asserts that repression defines a process that is designed to avoid disavowed content that may lead to *unpleasant* intrapsychic conflict, whereas dissociation blots out *unbearable* experience from consciousness. The right brain unconscious system thus contains not just repressed but also dissociated ("not me") states of self (see Schore, 2012; in press a,b).

Moreover, neuropsychoanalysis reveals essential information about the deeper levels of the topography of the mind, Freud's iceberg model of Conscious, Preconscious, and Unconscious. Recall, only 10% of Freud's iceberg is visible (conscious) whereas the other 90% lies beneath water (preconscious and unconscious). Within the subconscious mind the preconscious is allotted 10%-15%, while the unconscious an overwhelming 75%-80%. In my own work I have offered a modern neuropsychoanalytic update of Freud's topographic model of stratified conscious, preconscious, and unconscious systems (Schore, 2003b). In line with developmental neurobiological research, the brain matures in a caudal to rostral progression, with subcortical areas maturing before cortical areas. Similarly the "lower" core of the unconscious develops before higher levels of the preconscious, which in turn evolves before the highest levels of the conscious mind. This progression also mirrors the fact that right hemisphere matures before the left (Schore, 1994, 2003a,b, 2012).

Thus I have proposed that the limbic and emotion processing areas of the right brain unconscious represents a hierarchical system with an outer later-developing cortical, orbitofrontal-limbic regulated core, an inner earlier developing cingulate-limbic regulating core, and an earliest evolving subcortical amygdala-limbic regulated core that lies deepest within, like nested Russian dolls. The three levels of organization of the right brain represent, respectively three levels of the system unconscious: preconscious, unconscious, and deep unconscious. The unconscious systems of the hierarchical three-tiered cortical-subcortical

limbic core thus reflect the early developmental history of the subjective self (Schore, 2012).

Implications Of Right Brain Laterality Research For Psychotherapy

These data fit well with my interpersonal neurobiological model of right brain-to-right brain unconscious communication and regulation across a co-created intersubjective field, that is an interbrain synchronization of two right hemispheres in an emotion transacting psychotherapeutic context. In a recent contribution in the Division 29 journal *Psychotherapy* I offer neurobiological and clinical data to argue that "The right brain is dominant in psychotherapy" (Schore, 2014). Right brain-to-right brain unconscious affective communications "beneath the words" are expressed in the therapist-patient transference-countertransference relationship. This mechanism is essential to working in preverbal-onset developmental disorders, whereby the optimal clinical approach is to "follow the Ariadne's thread of transference affects" (Brierley, 1937).

In therapy this right lateralized system is used to access deeper unconscious systems beneath the surface of the left hemisphere conscious mind. In his most recent psychoanalytic writings Philip Bromberg (2017) asserts,

The foundational perspective that shapes my thinking is enriched by, and, in an ever-expanding way, intertwined with Allan Schore's groundbreaking contributions to the fields of both psychotherapy and neuroscience...in addition to the key importance of affect regulation and dysregulation, both Allan and I place special emphasis on the phenomenon and concept of "state-sharing" (Schore, 2003b, 2011, 2012)—that is, the right-brain to right-brain communication process through which each person's states of mind are known to the other implicitly (p. 7, my italics).

Bromberg states that this organized dialogue of dynamically fluctuating moment-to-moment state sharing underlies "a good psychoanalytic match."

In my own work I arrive at a similar conclusion. Within the session moment-to-moment right brain-to-right brain "state-sharing" represents an organized dialogue occurring within milliseconds. In this interactive matrix both partners match states and simultaneously adjust their social attention, stimulation, and accelerating arousal in response to their partner's signals. In applying neurophysiology to psychotherapy Geller and Porges (2014, p. 183) propose,

[The] bidirectional influence between our brain and visceral organs explains how the therapist's social and emotional responses to the client can potentially, by influencing the physiological state of the client, mediate either an expansion or restriction of the client's range and valence of socioemotional responding...Bidirectional communication between areas in the right hemisphere promote adaptive interpersonal functioning between therapist and client (Allison & Rossouw, 2013; Schore, 2012; Siegel, 2012).

Furthermore, this communication system is a central mechanism of therapeutic presence, which "involves therapists using their whole self

to be both fully engaged and receptively attuned in the moment *with and for the client* to promote effective therapy" (p. 178, my italics).

Echoing these ideas in psychiatric writings Meares (2012) refers to "a form of therapeutic conversation that can be conceived...as a dynamic interplay between two right hemispheres" (p. 315). In his words,

[A]n interplay between two right brains provides a structure for the therapeutic engagement...right hemispheric language...is abbreviated, with the utterance often incomplete, and lacking formal syntactical structure. In particular, the subject of a sentence tends to be left out, including pronouns... Furthermore, the language is emotionally expressive. As a consequence, the phonology is salient, the toning and inflections of the voice have a powerful communicative effect that is combined with facial expressions and the movements of the body. This kind of language creates the feeling of 'being with' in a way that is greater than a logical, completely syntactical left-hemisphere utterance, which sets up a different kind of relatedness. (pp. 312-313, my italics)

Similarly, in the clinical psychology literature Greenberg (2014) notes, "implicit affect regulation that results from a good therapeutic relationship occurs through right hemispheric processes, is not verbally mediated, is highly relational, and is most directly affected by such things as emotional communication, facial expression, vocal quality, and eye contact (Schore, 2003a,b)" (p. 351). These communications underlie the clinician's state of "therapeutic presence" which involves:

(a) being in contact with one's integrated and healthy self, while (b) being open and receptive, to what is poignant in the moment and immersed in it, (c) with a larger sense of spaciousness and expansion of awareness and perception. This grounded, immersed, and expanded awareness occurs with the intention of *being with and for the client*, in service of his or her healing process (p. 353, my italics).

Note a common theme in these descriptions: at the most essential level, the intersubjective work of psychotherapy is not defined by what the therapist does for the patient, or says to the patient (left brain focus). Rather, the key mechanism is *how to be with the patient*, especially during affectively stressful moments (right brain focus). The therapist's regulated receptive state allows for participation in the intersubjective communication and interactive regulation of the patient's conscious and unconscious emotional states via an interbrain synchronization between two right hemispheres. In this manner interpersonal resonance allows for a "specifically fitted interaction" (see Schore, 2012).

In this right brain-to-right brain context the creative therapist in turn enhances the patient's "integrative self." In the social and personality psychology literature Kuhl and his colleagues (2015) offer an article, "Being someone: The integrated self as a neuropsychological system," in which they distinguish a right hemisphere unconscious "integrative self" from a left hemisphere conscious "conceptual self." The functions of this right lateralized self include unconscious processing, emotional connectedness, broad vigilance, utilization of felt feedback, extended trust, resilience, and integration of negative experiences. There is currently agreement on the critical role of "integration" as a goal of psychotherapy. Research now clearly demonstrates that integration is not a function of the left brain conscious mind, but of the right brain unconscious subjective self. This change in the right brain unconscious

integrated self in successful psychotherapy is beyond left brain cognitive insight. Relational, affectively-focused treatment promotes *changes in the patient's right brain* interpersonal competence, social intelligence, and affiliation motivational systems.

Within the perspective of the relational interpersonal neurobiological context of psychotherapy *changes also occur in the therapist's right brain*. Discussing the right brain neuroplasticity of clinical expertise I have suggested that the professional growth of the clinician reflects progressions in right brain relational processes that underlie clinical skills, including affective empathy, the ability to tolerate and interactively regulate a broader array of negative and positive affective self states, implicit openness to experience, clinical intuition, and creativity (Schoore, 2014a). I am now exploring the right brain origins of creativity, including interpersonal creativity in the therapeutic context.

Of course, psychoanalysis has long been interested in the problem of creativity, especially in the earliest stages of the process which occur beneath levels of conscious awareness. In 1953 Ernst Kris proposed that "regression in the service of the ego" acts as a source of creativity, and that all manifestations of creative imagination are expressed in subjective experience. Three characteristics of this experience are outstanding. First, the individual is aware of the limitation of conscious effort. Second, there is awareness of a specific feeling, and frequently a very high, emotional charge. Third, even if excitement rises, the mind tends to work with high precision and problems are easily solved. A further common element involves the reaction of others to the creator. Note the link between creativity and emotion, and the impact on the creator's mind on the other, via what he termed "creative communication."

At the same time another psychoanalytic pioneer in the study of creativity, Theodor Reik (1948) suggested that creative individuals are more capable of shifting between secondary and primary modes of thinking, and thereby to "regress" to primary process cognition which is necessary for producing novel, original ideas. Reik argued that if the clinician "surrenders" to the regression required to access an uncanny insight, a conscious intuition into the patient's dynamics emerges. If insight originates in the unconscious, then the only way to reach it is through some degree of regression to the primary process. He observed, "As rational consciousness gives way to the primary process, it may feel as if 'the ground' is threatening 'to slip away'" (Reik, 1956, p. 492). Thus it is important that transient regressions are tolerated, as a rigidly rational consciousness will stifle nonrational hunches. Accordingly "you have to mistrust sweet reason and to abandon yourself to the promptings and suggestions emerging from the unconscious" (Reik, 1956, p. 481). Indeed he warned that in therapy creative insight can be displaced by technical machinations.

This proposal is supported by current neuroscience. In groundbreaking studies on split brain patients J.E. Bogen and G.M. Bogen (1969) proposed that the right hemisphere is the seat of creativity and that the major obstacle to high creativity is left hemispheric inhibition of right hemispheric functions. Huang et al. (2013) offer data showing that the left frontal lobe is negatively related to creativity, and that the right hemisphere's predominance in creative thinking may be inhibited by the left part of brain in normal people. Shamay-Tsoory et al. (2011) observe that the right medial prefrontal cortex mediates creativity, while the left hemisphere language areas may compete or interfere with creative cognition. A release of right prefrontal cortex from this competition facilitates the expression of an original creative response. Note the similarity of this disinhibition to "surrender." In more recent

work Maysseless & Shamay-Tsoory (2015) show that in enhancing verbal creativity altering the balance between the right and the left frontal lobes can be used to modulate creative production. Reducing left frontal activity and enhancing right frontal activity reduces cognitive control, thus allowing for more creative idea production. McGilchrist (2009) observes that in order to allow for a left to right hemisphere shift "We must inhibit one in order to inhabit the other."

Adaptive, transient, creative regression thus represents a left to right callosal shift in dominance, a temporary uncoupling of hemispheres, and a disinhibition of Freud's secondary to primary process cognition. "Regression" is defined by the *Oxford Dictionary* as "The process of returning or a tendency to return to an earlier stage of development" and "the act of going back; a return to the place of origin." Synchronized "mutual regressions" represent a shift of dominance in both members of the therapeutic dyad from the later maturing left hemispheric to the earlier developing foundational right hemispheric "origin of the self" (Schoore, 1994), allowing for new learning and developmental advances in the unconscious system. A modern neuropsychanalytic perspective suggests two types of adaptive regressions: interhemispheric (topographical, conscious left cortical to unconscious right cortical), and intrahemispheric (structural, downward cortical to subcortical deeper unconscious in lower levels of right brain). These mutually synchronized regressions are prominent in dyadic (re)enactments, expressions of complex, though largely unconscious self-states and early relational patterns (see Schoore, 2012). Adaptive regulated mutual regressions can increase interpersonal creativity, new ways of being with others, in both the patient and therapist.

Over deep psychodynamic treatment increased access to right brain interpersonal creativity allows for an expanded ability to flexibly cope with the successive social and emotional challenges to the right brain integrated self over different life stages, within changing cultural and social contexts. This therapeutic advance represents a fundamental interpersonal neurobiological mechanism that facilitates the growth and development of the right brain subjective self, the psychobiological substrate of the human unconscious, throughout life. Right brain functions, operating beneath awareness, can thus evolve to more complexity over the stages of human development. Neuroscience is now describing progressions in not only "lower" right brain survival functions of the deep unconscious, but also in the high right brain, the source of the most complex human functions, beyond left brain language. A large body of studies now demonstrate that the "emotional," "social" right brain is centrally involved in not only affects and stress regulation, but also in empathy, intuition, creativity, imagery, symbolic thought, insight, play, humor, music, compassion, morality, and love (Schoore, 2012). Indeed, psychoanalysis, like psychology, has overvalued the functions of the surface left hemispheric conscious mind. These higher functions of the unconscious mind allow for a reformulation and expansion of the essential role of the unconscious in everyday life.

"The Times They Are A Changin'...How About Us?"

Re-invoking the challenging voice of Bob Dylan the conference title refers to the rapid political changes we're now facing. It also refers to the rapid advances in knowledge we have made in this same period. Indeed over the last three decades there has been an explosion of knowledge across disciplines as well as an expansion of an integrative perspective within and across fields. All disciplines must move beyond their intrinsic isolation and forge deeper clinical theoretical and research connections into disciplines with which they intersect. Psychoanalysis

needs to make an active commitment to this integration and connection. This is especially so in the current political environment that is anti-mental health, anti-science, anti-psychotherapy, and pro-big pharma.

Returning to the beginning of this talk, in my article on the one hundredth anniversary of Freud's *Project* I asked is the time right for a "psychology which shall be a natural science?" At the time I speculated,

[T]he response of psychoanalysis will have to involve a reintegration of its own internal theoretical divisions, a reassessment of its educational priorities, a reevaluation of its current predominant emphasis on cognition, especially verbal mechanisms, as well as a reworking of its Cartesian mind-body dichotomies. This redefinition involves the identity of psychoanalysis itself, in terms of both its self-reference and its relations with the other sciences. In principle, whether or not a rapprochement takes place between two parties depends not only on the information they share in common, but on their individual willingness to enter into a communicative system (Schoore, 1997, p. 833).

Exactly twenty years on the field has made significant movement towards these goals. But psychoanalysis, "the science of unconscious processes" needs to significantly increase its efforts to continue to incorporate advances in science in order to fuel its growth and relevance. Ernest Jones (1953, p. 384) called the *Project* "something vital in Freud that was soon to become his scientific imagination." We need a return of scientific imagination in 21st century psychoanalysis.

Variations in the organization of right brain circuits implicitly processing emotion and stress are relevant to individual, personality, gender, ethnic group, and socioeconomic differences. Yet the invariant properties of right lateralized limbic-autonomic circuits represent the common expressions of humanness, of fundamentally, what it means to be human. As discussed, advances in knowledge of the right brain may act as an integrative and energizing force that can catalyze movement of the field out of the psychotherapy office and into the larger social and po-

litical culture. As this talk demonstrates this change involves replacing metapsychological abstractions with right brain neurobiological data. Neuropsychoanalysis needs to be integrated into the central constructs of its theory of the unconscious, *the foundation of psychoanalysis*.

In light of the uncertainties of the current social/political context, there is a sense of urgency to this change - Dylan's lyric "you better start swimming or you'll sink like a stone." Another Dylan lyric "Forever Young" applies during the present moment of rapid cultural and political change:

May your hands always be busy

May your feet always be swift

May you have a strong foundation

When the winds of changes shift



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The Enacted Unconscious: A Neuropsychological Model of Unconscious Processes

Efrat Ginot, Ph.D.

Integrating neuropsychology with psychoanalytic thinking the paper offers a new view of the unconscious. Veering away from more traditional conceptualizations, this neuropsychological model emphasizes the ever-present influence of ongoing unconscious processes on much of our behaviors and mental states. Importantly, this new understanding is based on the functional unity of the brain/mind.

Introduction

Following Freud (1915), most theories of the unconscious have considered it as a separate mental entity, containing well-delineated memories, forbidden wishes, painful conflicts or unbearable trauma. Defensively, such unacceptable experiences become repressed and are kept hidden. Consequently, uncovering the repressed or dissociated would make the unconscious conscious, leading to psychic integration.

As we are learning, however, the immense unconscious system does not confirm to this view. Rather, unconscious processes are embedded in widespread neural networks that always hum in the background and cannot be reduced to specific events, memories or content. In an interesting observations, neuroscientists have noted that there is no neural evidence of a delineated "self" capable of unconsciously directing experiences to a hidden "storage" place (See Hassin et al., 2007; Churchland, 2013).

The new model indicates that the unconscious realm is an amalgam of fused perceptions, emotions, memories, and learning experiences (Damasio, 2010). But this realm is not simply static and unknown. It embodies on-going and ever active brain/mind/body processes that underpin our emotional, cognitive and interpersonal patterns. Significantly, the new model highlights the connection between unconscious and conscious processes, and especially the brain/mind's propensity to automatically enact entrenched patterns.

Consequently, this new understanding clarifies many of our recurrent struggles -- our stubborn tendency to repeat emotional, perceptual and behavioral response patterns even when they are clearly inappropriate and even self-destructive. It also explains the obstacles encountered when we try to change such patterns and achieve a more stable sense of wellbeing and self-regulation. An integrated neuropsychological model of the unconscious-conscious continuum will greatly expand our understanding of such all-too-human difficulties.

Some neuropsychological features of unconscious processes

One of the exciting developments in our understanding of the unconscious involves the greatly expanded picture of its scope of action and influence. Unconscious processes are brain/mind functions that are

pervasive and generally much more influential than we consider them to be. Libet (1985) and Libet et al. (1967) showed that brain activity preceded seemingly conscious decisions of subjects instructed to raise their fingers at will. Since then, it has become clear that unconscious processes are involved even when we feel we make deliberate choices (Bargh, 2007, 2014; Hassin, 2007).

The unconscious is grounded in learning processes that integrate all memories and experiences -- consciously and unconsciously alike. The brain's capacity to acquire implicit skills and establish automatic patterns is central to all unconscious processes. These unconscious learning processes, especially during early development, are in the service of the important tasks of survival, adaptation, and the maintenance of well-being.

Relying on consolidated learning and an amalgam of implicit memories, the brain/mind is on the lookout for what it already knows and expects. Automatic prediction as to the meaning of events is common. People who harbor an unconscious tendency to feel rejected will scan the interpersonal field for behaviors that could be interpreted as unwelcoming, for example. They will experience rejection where it does not really exist and find the "right evidence" for their feelings and thoughts. In other words, they will unconsciously project specific expectations, then "convince" their conscious thought processes that the projection is true and justifiable. Such complex processes happen out of awareness.

Surprisingly, then, the unconscious is in essence a brain/mind/body system that actively relates to the external and internal environments through habitual perceptions, priming, and automatic defenses and actions (Bargh, 2007, 2014; Glaser and Kihlstrom, 2007; Hassin et al., 2007; Wegner, 2007).

How did conscious and unconscious systems evolve?

During our evolutionary past there were constant pressures to acquire a functioning survival system that could act quickly and efficiently. We did indeed develop the ability to enact behavioral patterns automatically and without having to rely on any reflection (Wegner, 2007). Recurrent environmental challenges were answered with implicit learned responses that were quickly executed.

With time another system -- one that is slower and therefore more flexible developed as well. This reflective capacity has led to thoughtful, more deliberate abilities, and to executive functions that depend on planning, flexibility and mindful attention (Damasio, 2010; Koziol and Budding, 2010; Lewis and Todd, 2007, among many others). What is becoming clear is that despite the more (relatively) recent development

of conscious processes, the unconscious ones are still very much in the picture. Furthermore, they are the center of our functioning. Being ontologically older and much better equipped to quickly respond to familiar situations, the unconscious realm became an essential mode of functioning that is still part of all our mental aspects.

Studies in the fields of sociology, psychology and economics give ample evidence that unconscious processes monitor, control, and guide the way we pursue goals, and largely determine our approaches to changes in the environment (Bargh, 2007, 2014; Glaser and Kihlstrom, 2007; Eitam et al., 2008; Kahnenmann, 2011; Wilson, 2003).

Some Developmental Aspects of the Unconscious: Map Making and self-states

The vast unconscious is described by Antonio Damasio (2010) as comprised of encoded neural organizations, networks or maps. These networks are characterized by different patterns of synchronized activity as the brain responds to stimuli with either neural activity or rest. As these neural circuits react to similar stimuli in the same pattern (of firing or resting) they create clusters of neural responses throughout all brain regions. Neurons that fire together stay connected. (However, the significant role of epigenetics in this process cannot be covered in this paper.) The reinforced combination of on-and-off firings of neuron clusters in response to stimuli, create neural networks or maps and these are associated with specific developmental situations.

Throughout development and based on many repeated interactions within differing interpersonal contexts we all develop more than one emotional and behavioral map. Accordingly we experience different states of mind. What is important for us to remember is that maps are amalgams of memories/learned experiences. They include the feelings, perceptions, bodily sensations, cognitions and defensive reactions specific to interactions or emotional situations.

Significantly, from the very beginning, affective states, both positive and negative, are the building blocks of a neural map. Dysregulated affect, for example, over-rides the child's ability to regulate it, is automatically defended against, and greatly colors the child's understanding of her internal and external worlds. Dysregulated experiences will create negative self-narratives and difficulties in one's self-concept. As we see clinically, most early defenses against painful affect interfere in one's adaptive functioning.

At any time, a fraction of such networks gives rise to conscious experiences or conscious self-states (Bromberg, 2011; Damasio, 2010; Churchland, 2013). Although unconscious brain circuits operate out of awareness, they are active and constant participants in our perceptions and responses to all internal and external stimuli. Brain, body, and environment are inextricably linked at all times, from the unconscious perceptions and interpretations of all stimuli, to the emotional and behavioral responses that follow (Colombetti, 2011; Di Paolo et al., 2010).

We need to remember that although memories and experiences encoded in early childhood remain implicit they nonetheless become part of a neural map and thus retain ongoing influence on perceptions and behaviors. Early memories are not explicit or accessible because the hippocampus – the memory center -- is fully on line only around age four or five.

Automatically and out of awareness, these networks, both positively and negatively tinted, continue to scan the environment for familiar reminders, and treat perceived and actual challenges according to old coping patterns (Damasio, 2010; Engel, 2010; Hassin, 2007; Koziol, 2014; Pally, 2000, 2007; LeDoux, 2002; Lewis, 2005). To use our example again, children or adults primed to perceive slights or rejection will unconsciously be on the lookout for "signs" of rejection, seeing them where they may not really exist. Consequently, they will automatically employ defenses that worked in the past, such as avoiding others or over reacting with anger.

The Enacted Unconscious

This is what the brain does well: automatically and out of awareness, it implements past lessons so that we do not have to relearn things each time anew. The repeated enaction (a very useful term coined by Varela et al., 1991) of neural/self-systems or patterns gives expression to perceptual biases, emotional patterns, automatic cognitive interpretations and defenses. Varela et al., like many others after them (e.g. Colombetti, 2010; Gendlin, 2012), stress the embodied properties of the mind and their tendency to be enacted on the environment.

The unknowable, then, still gets to be expressed and thus can be identified, recognized and reflected on. We reveal our unconscious maps in the unique ways in which we think, feel and behave. It is true that much of the encoded *content* of fused and associated memories, especially those that go back to preverbal time, is not accessible to explicit recall. However, through repeated emotional and behavioral manifestations we do get to witness the nature of particular unconscious pattern. If we become sufficiently aware, the automatic and repeated expressions of our perceptual, emotional, cognitive, and behavioral tendencies can indicate some of our underlying brain/mind self-systems. It is not surprising that the motor areas in our brain are closely intertwined with all other functions (Koziol and Budding, 2010).

This process of re-creation happens automatically and out of awareness whenever we respond to the external environment or to signals arising from within us. Past-encoded emotional, cognitive and behavioral patterns are always being resurrected in the present time. The past and the present, the conscious and the unconscious are blended together to create the current moment of experience (Chartrand et al., 2007; Gendlin, 2012; Horga and Maia, 2012).

Self-other narratives as expression of unconscious Self-Systems

This section briefly explores one of the most familiar characteristics of negative self-states or maps: the all-consuming and utterly believable self-denigrating convictions and narratives. These emotional/cognitive beliefs, frequently distorted, are an inseparable part of unregulated emotional states. Such self-other narratives can acquire an intrusive, autonomous life; they surface unbidden and flare up as familiar thoughts, fantasies or images. They end up dominating our intra-psyche and interpersonal experience. As an expression of unconscious patterns, negative narratives that automatically rise to the surface during stressful situations can shed light on unconscious-conscious processes.

In essence, a recurrent negative narrative about the self or others gives an emotionally stressful state its familiar shape and feel, and intensifies its harmful qualities. In the midst of an unregulated state the

visceral, emotional, and cognitive are totally intertwined; feelings are fueled by words, and the words we tell ourselves reinforce the negative state. Neurally and therefore experientially, they are one and the same. To quote Panksepp and Biven (2012, p. 451): “in humans these [affective states] are always accompanied by cognitive changes, such as emotionally entangled attributions, ruminations, all sort of plans and worries.” These joined expressions of emotion and thought embody an important aspect of our unconscious and reveal a great deal about one’s implicit patterns.

As we see in our clinical work, such narratives—easily activated during stressful situations or in the transference—tend to be harsh and judgmental. They tend to be distorted, at times clearly removed from one’s impartial reality; a balanced perspective is lost and what remains is the conviction that one’s negative assessment of the present situation is the only correct one. Being an integral part of unconscious maps, negative narratives repeatedly enact unconscious self-states. They bring hidden emotions, experiences and memories, as well as the cognitive beliefs embedded within them, to the fore.

The Roots Of Repetitions: The Relationship Between Cortical And Subcortical Brain Regions

Unconscious self-systems repeat themselves when the influence of subcortical regions (e.g. the cerebellum and the basal ganglia which encode procedural learning and all emotional, cognitive and behavioral habits) overrides the influence of higher-level cortical areas. When this happens, subcortical neural messages bias the prefrontal cortex to interpret perceptions in an inflexible way that entirely relies on old maps and patterns. New information is not processed. In an interpersonal situation for example, when an entrenched prediction is biased toward a humiliating outcome, as in our example, the subcortical networks release old emotional habits and behaviors regardless of their adaptability to new situations (Koziol, 2014).

Persistent negative self-narratives as well as expectations of failure, shame and humiliation are based on an internal model alone, so they do not take into account the clear and fresh aspects embedded in current reality. These faulty predictive processes encoded long ago lead to distorted expectations and predictions (Pally, 2000, 2007).

The links between conscious and unconscious functioning, e.g. between subcortical regions and the prefrontal cortex and its various executive functions (Donald, 2001) explain the sway unconscious processes have over higher executive functions. It is important to underline the brain/mind’s propensity to employ existing maps in the constant effort to make sense of and interpret reality. We can all recognize in ourselves this tendency to see the world according to what we already know -- according to our subcortical maps.

The brain/mind favors automaticity. An automated response is one that occurs without conscious participation, biasing the prefrontal cortex to release old patterns in a rigid and repetitive way. Imaging studies show that automatic behaviors demand less effort and stimulate less activation than deliberate behaviors (Chartrand et al., 2007; Wegner, 2007).

The (Im)Possibility Of Change: Concluding Thoughts

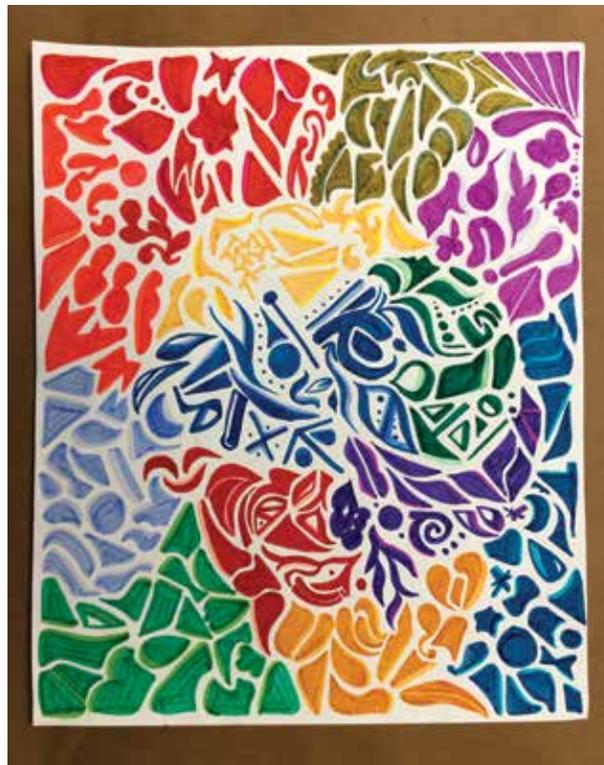
The continuous tug between the habitual power of the unconscious and the weaker ability of the prefrontal cortex’s efforts to slow down and reflect (Damasio, 2010; LeDoux, 2002) explains how unconscious patterns seem to have a life of their own, often winning over conscious intention and willful decisions. This characteristic explains what we often witness: the tendency to feel, behave, and interpret the world in very familiar and predictable ways, even when circumstances differ. These guiding systems often work against us and also explains why insight and even a determination to act differently often fail at achieving enduring change. In this case, the brain/mind/body habits override intention and even will.

However, we are not simply doomed to only repeat old patterns. The more deliberate higher-order functions of the prefrontal cortex provide autonomy from fast and automatic behaviors. But to enhance the ability to override automaticity we need to recruit the slowed down reflective capacities. This capacity can be especially effective when reflective awareness occurs in the midst of an emotional experience.

For many patients, unless mindful efforts are exerted in the midst of emotional dysregulation (Jurist, 2008), the automatic activation of subcortical networks can overcome the slower and reflective prefrontal cortex (Lane et al., 2014; McRae et al., 2013). Understanding the powerful forces of repetition and

resistance while at the same time attempting to empathically nudge patients toward greater awareness can be therapeutically successful (Ginot, 2009, 2012, 2015). All therapeutic changes are really changes in neural networks, the emotional network in particular, and the many associations and cognitive convictions stemming from them (Ecker et al. 2012).

As part as of any therapeutic process we need to recognize and address the built in difficulties that resist change. A better knowledge of unconscious processes and their embeddedness within our neurobiology will enable us all to tackle and ameliorate difficult patterns with more empathy and effectiveness. Understanding the power of reflective awareness to slow down harmful automatic processes (Siegel, 2007) can greatly inform such efforts.



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Organizing Adolescents(-ce): A Dynamic Systems Perspective on Adolescence and Adolescent Psychotherapy¹

Charles M. Jaffe, M.D.

It seems to me that papers about adolescence or adolescent psychotherapy frequently begin with a mantra, followed shortly by a lament. The mantra usually includes the invocation of adolescence as a developmental phase that reflects the confluence of physical and cognitive maturation, as well as the expectations of adolescents, families, and society within an historical context. We note its subdivisions into early, middle, and late manifestations that mark the progression of meeting the tasks of social, sexual, educational and vocational functioning, manifested in increasingly self-sufficient functioning. From an intrapsychic point of view, we note that the adolescent passage is centrally defined by a transformation of psychic structure, which we label identity or character consolidation. The concomitant subjective shift includes a realistic experience of oneself as unique, yet part of a context, with self-esteem resilient over a variety of circumstances. From the vantage point of therapists, we note our accustomed position of thinking about adolescent psychotherapy as removing obstacles that interfere with the unfolding of this developmental transformation, and even being a part of it through the opportunity for the adolescent to re-solve childhood dilemmas or to have a new experience of relationship.

Then comes the lament. The lament usually invokes the problems inherent in treatment during this phase of developmental change. Such problems are reflected in descriptions of the difficulty determining analyzability in adolescence, in the particular adolescent defenses that preclude the development of stable transferences, or in the special needs of adolescents for support and emotional contact.

In my view, the lament stems from the fact that psychoanalytic models of adolescent development successfully provide an overall picture of adolescent tasks and the psychological arenas that are engaged in meeting these tasks, yet they are of limited use in the actual encounters with adolescents. The distinct character of adolescence and adolescent treatment seems richer and more complex than the models that inform our understanding of the process. The result is some disjuncture between the pragmatic and flexible approach of adolescent psychotherapists, and the psychoanalytic developmental theories and their companion technical prescriptions that are meant to guide treatment.

In this paper, I will present a point of view that seeks coherence between our study of this significant period of reorganization in life, and our efforts as clinicians to be effective with our adolescent patients. I want to explore the question: How can we make more cohesive our view of the actions of therapists and the developmental transformations of adolescence? Recent applications of systems theory in developmental psychology provide us with a different framework within which to view adolescence. In my view, this perspective creates a more coherent view of adolescence and encounters with adolescents.

My thesis is that from the dynamic systems perspective, adolescence is a manifestation of the ongoing reorganization of the human system. The characteristics of adolescent psychotherapy are consistent with this view of adolescent development. Whether we consider adolescence as a developmental phase, adolescent psychotherapy as a technology for enhancing development, or the specifics of therapist and adolescent actions, is a matter of time scale and vantage point, rather than differences between developmental and therapeutic process. That is, the difference lies between a moment-to-moment perspective rather than one of years, and the view of transitions as nonlinear, flexible, and asynchronous rather than appearing as continuous stages or phases. At the level of patient therapist interactions, the process of development and the process of treatment merge. Our actions as therapists not only remove obstacles to development. Our actions as therapists, in interaction with our patients constitutes development. Rather than indicating any different therapeutic activities, this view suggests how we might re-assemble our view of the developmental process of adolescence so that our theory and our therapeutic work function with more coordination.

I will begin with some comments on current models of adolescence and their efforts to address the operational process of adolescent transformation. Next, I will provide an orientation to dynamic systems. I will then offer a view of adolescence as a developmental process within a dynamic systems perspective. Finally, I will suggest that assembling our view of adolescence and our encounters with adolescents within this alternative framework has the effect of creating a more coherent, flexible system of theory and practice

Current psychoanalytic approaches to adolescence

Despite the wide diversity of views on adolescence, there is general agreement that a central issue in adolescence is the shift towards guiding one's own experience (Richmond and Sklansky, 1984). This shift, variably termed reorganization, transformation, or integration, occurs along a number of trajectories. Clinically, we observe behavioral and subjective manifestations that demonstrate wide variations in this process – if it occurs at all. We see, for instance, adolescent transformation occurring in the ordinary course of life. Alternatively, we see adolescent reorganization slowed in a particular circumstance to the point of clinical symptoms, but overall proceeding with minimal delay. We also see the central process of adolescent transformation require long term assistance to achieve, and sometimes life long assistance to maintain.

What do we have to work with to conceptualize these phenomena? As psychoanalytically oriented psychotherapists addressing development, we have a language to describe the motives, developmental tasks, and psychic reorganization that are manifested in this transformation. Each model has its underlying commitments to the fundamentals of motivation and developmental aims, as well as corollary commitments

to the process of change in analytic treatment, how treatment should be conducted, and what one might expect as its outcome (Jaffe, 1991, 1997a).

From the theoretical perspective, psychoanalytic theories that follow Freud's emphasis on the biphasic nature of sexual development view adolescence primarily as the necessary revision of childhood sexuality in response to puberty. Independence, identity, intimacy, and realistic productivity reflect the successful transformation of oedipal and pre-oedipal structures so that the mature expression of sexual impulses and object finding is assured. Psychoanalytic theories that emphasize the primacy of object relatedness and self and object differentiation view adolescence as the manifestation of efforts to achieve self sufficiency, or autonomy, with stable internal self and object representations. Self Psychology is organized around the central importance of empathic relations with others as the key to forming a stable self that lives out a nuclear program of ambitions, ideals, and talents.

From our perspective as psychotherapists, whatever informs our specific views of motivation and development, we use that same framework to describe the conditions for change in psychotherapy. Ego psychology asserts that we can help developmental reorganization by removing the obstacles to drive, ego, and superego maturation through interpretation and analysis of unconscious conflict. Self Psychology centers on empathic immersion; the importance of establishing a stabilizing selfobject experience that eventually may be accompanied by explanation or narrative self-reflection. More recent contributions within Self Psychology place emphasis on the interpersonal field, wherein the adolescent can experience a secure base for shifting patterns of attachment, mature selfobject relatedness, or the appearance of a novel relationship with the therapist.

In contrast to ego and Self Psychology, object relations theory emphasizes the central importance of establishing a holding environment, with attention to internal representations of good and bad objects as they are enacted in thought and deed. Parenthetically, modern relational theories have little to say about the adolescent transformation, being almost exclusively focused on infancy (Frank Summers, personal communication). Apparently, the stepchild status of adolescence lives on!

When it comes to the central concern of this paper, however, – an explanation of the process of adolescent transformation itself – again each particular model of mind supplies its own view and we trail off into problems. Psychoanalytic models are at a loss to address the actual processes of integration and transformation in development in general or for adolescents in particular.

Of course, with whatever limitations, psychoanalytic models have certainly evolved over the past thirty years, and have been most usefully applied to understanding adolescence and to the treatment of adolescents.² Classical theory of adolescent phenomena as a reaction to puberty and the necessity of disengaging from now dangerous childhood imagoes has given way to viewing adolescence in a much broader range that includes a number of paths for the adolescent passage, (Offer and Offer, 1975; Galatzer-Levy and Cohler, 1993), and more distinct criteria for separating developmental fluctuations from psychopathology. We have come to appreciate that psychic disruption manifested by internal and behavioral turmoil is neither intrinsic, nor necessarily salutary in advancing from childhood to adulthood. While retaining an appreciation for the importance of fundamental aspects of development like

sexuality and differentiation, we no longer subscribe to a narrow view of an optimal outcome marked by heterosexual object choice, or to an ideal of the rugged individualist. We have also learned that there is more that motivates and organizes psychic structure and development than sex. We have learned that people need people throughout life, and not just parents, but that it does not necessarily make them the luckiest people in the world. We know that adolescents need stabilizing and stimulating experiences through the adolescent transition and beyond. We see the developmental advantages of being empathically understood, and of being able to adopt various points of view in understanding oneself and others. And finally, I think it is fair to say that over the past thirty years we have learned that we are organisms, not thermostats or computers. Consonant with the rest of analytic thought, we continue to struggle with the way in which biology counts, whether directly through puberty, through advances in cognition, or through one's subjective experience of oneself in the process of change.

Regarding a theory of change, while some view interpretation of unconscious conflict as central and others view an empathic relationship with intersubjective negotiation culminating in a new experience in as key, all subscribe to the idea that the therapeutic environment should be safe, with the goal of limiting the iatrogenic interferences created by a therapist's stance that is either overly controlling and intrusive or withholding and frustrating. Most analysts believe that analyst and patient impact each other in a way that makes each treatment unique and that may provide important data to further understanding the patient. At the same time, they most certainly do not agree about how central this factor is in the role of therapeutic change.

Overall, psychoanalysis has made significant progress in describing and providing an environment for psychic change in adolescents and in understanding that a variety of interventions facilitate this transformation. Analytic models address this process and its role in development as it is played on many stages. It may be the Oedipal drama in all its permutations, or the dance of attachment, or the rich or impoverished encounters with useable objects. The process may be quiet or raucous. It may look like a scene from Our Town, where Emily, perched on a stable ladder, could tolerate seeing her place in the cosmos. Or, it may resemble a scene from Rebel Without a Cause. Here, a similar encounter with the cosmos in the form a trip to a planetarium reveals the turmoil and loss of personal integrity amongst shame, rage and isolation.

We are left, however, with psychoanalytic theories that provide a view of the conditions for change, but leave a theory of transformation on the periphery of explanation. This is hardly a new problem or observation for the field of psychoanalytic psychology in general, or for the study of adolescence in particular. However, it is particularly unsatisfactory for us, since adolescence is centrally about this very process.

Efforts to identify the operational process of reorganization in adolescence.

There is no question that our psychoanalytic theory of adolescence has been most finely honed by Peter Blos' detailed elaboration of the phase appropriate challenges and transformations that occur during the second decade of life. Blos (1962) elaborated a model that included phase specific drive and ego modifications and specific conflicts to be solved. His account of the process begins with the upsurge of instinctual impulses, necessitating the withdrawal of cathexis from the parental imagoes of earlier childhood, and the appearance of typical defenses against the presence of dangerously increased drive pressure that

threatens regression to pre-Oedipal attachments. The process moves through the period of fluctuating moods, erratic and contradictory behaviors, and passionate though transient identifications that reflect the loss of the internalized parental super-ego and a recrudescence of bisexuality. Subsequently, there is the transition to a more stable sexual identity and choice of object that reflects re-encountered positive and negative Oedipal constellations. In the final phases of adolescence, a stable character configuration emerges, the overall purpose of which is to allow management of revived or unresolved childhood difficulties through signal anxiety, sublimations, and particular patterns of object relations. In this view, fixations provide specific choices of libidinal needs, relationship choices, and fantasies, residual trauma provides the force behind the compulsive repetition that pushes unintegrated experience towards ego integration, the super-ego and ego-ideal provide the direction of this process, and the environment and social institutions offer the avenue for expression (1962, p. 134).

Almost every paper on the topic of the psychoanalytic theory of adolescence includes reference to Bloss' phases of adolescence. Even those who vigorously disagree take Bloss' position as the point of departure. Many analysts still subscribe to this view of adolescent psychic transformation. Others dismiss as anachronistic the Freudian suppositions that frame his model, and assert alternative motivational foundations such as autonomy, self-cohesion through selfobject use, or attachment maintained through intersubjective relatedness. Still others see adolescence primarily as a social construction, a fabrication of historical curiosity in our culture. While each of these positions has implications for a view of the behavioral phenomena, clinical technique, and the expected outcome of the period, they nevertheless remain organized around the basic description of pre- and early adolescence, adolescence proper, and late adolescence that Bloss set forth.

In this rich construction, Bloss drew from a number of principles of ego psychology to form a theory of structural change in adolescence. For example, he incorporated the principles that a wish or defense relevant to one phase of development could, over time, change its function, or meaning (Hartmann), that a bit of psychic structure originally connected to libidinal impulses could become an autonomous ego function (Hartmann), that there was a normative fluctuation of progression and regression in the service of structural change (a principle that mirrored the clinical psychoanalytic finding that a certain degree of regression promoted enhanced ego functions), that this fluctuation occurred in the context of a number of developmental lines (A. Freud), and that each individual appeared to have a habitual way of integrating drive, ego, and defense (Lamp de-Groot).

To account for the final achievement of adolescence, the consolidation of character, Bloss (1962) employed another central ego psychological concept, the synthetic function of the ego: "... it is obvious that the psychic institution where the consolidation of the adolescent process occurs is the ego (ego synthesis)" (p. 134). For Bloss, formation of character in adolescence is the outcome of psychic restructuring accomplished by the synthetic function of the ego. It is implied then, in Bloss' assertion, "character formation and adolescence are synonymous" (Bloss, 1968, p. 246), that adolescence is defined by and proceeds in relation to this capacity. To put this another way, integration, or reorganization, is at the very core of adolescence, and that core is the synthetic function of the ego. Bloss supports his claims by referencing Erikson's concept of ego-identity, Gitelson's emphasis on character synthesis as the central task of adolescence, and Hartmann's assertion that the synthetic function must be supra-ordinate to regulation by the external world (1962, p. 177).

The synthetic capacity is, then, a central aspect of Bloss' influential theory of adolescence as the route to character formation. But the concept is far from simple. In many ways, it cuts to the core of what moves character to form, whether character is an outcome of a process or a process itself, and when and whether it can be said to consolidate.

In their review of concept of the synthetic function of the ego, Bley and King (1981) note that the synthetic function has been described variously as automatic and inevitable once the proper conditions have been created by breaking up resistances (Freud, 1919), as a participant in symptom formation (Freud, 1926), as an ego function subject to a range of splits and disturbances (Freud, 1940), as appearing with superego formation and thus connected with libido as the self-preservative instinct (Nunberg, 1955), and as resting on other ego functions and leading to insight in analysis (Kris, 1956). Furthermore, the synthetic function of the ego has been described as a special case of a more general biological principle of "fitting together", or organization of the organism, that transcends the specific relationship of the synthetic function to self-preservation (Hartman, in H. Lichtenstein, 1965, p. 124).³ This last, the relationship of the synthetic function of the ego to a broader concept of the organizing whole person, the self, marks the expansion of considerations of the integration process in adolescence that stretch the theoretical concepts that informed Bloss' descriptions of the adolescent passage.

Bloss (1962) himself seems to be at a point of straining beyond his own ego psychological foundations when he leaves us at the end of his chapter on the ego in adolescence in his definitive work, *On Adolescence*. Here, Bloss notes Spiegel's (1959) reference to self, whose operational significance is as a framework: "This constant frame of reference acts as a steadying flywheel to overcome disturbing discontinuity of intermittent self-representations." Bloss concludes: "The nature and function of the self have been presented here because it appears that the concept of the self is becoming an investigative and conceptual tool of increasing moment for the study of adolescence. The extensive exploration of defenses during the adolescent period seems to be giving way to an investigation of the self in its genetic and pathologic aspects, and the study of the psychic organization and psychic restructuring is complementing the concentration on instinctual conflict as the paramount feature of the adolescent process" (p. 196-197).

Bloss (1968) again seems to stretch the boundaries of ego psychology when he notes that the engagement of individuation, response to trauma, ego continuity, and sexual identity (his four preconditions for character formation) are not yet sufficient for character to emerge: "Character reflects on the level of personality development the attainment of the highest form of psychical structure formation and functioning. References, explicit or implicit, to the complex structure and function of character can be found in the analytic literature that attributes to character a holistic, integrative principle of various designations: the synthesizing function of the ego, fitting together (Hartmann), identity formation, organizing principle, consolidation process, the self, the whole person, etc. All these connotations have in common the subjective experience that one's character is identical with one's self. Psychic life cannot be conceived without it, just as physical life is inconceivable without one's body" (p. 260).

In this way, Bloss leaves the impression that his delineation of prerequisites for character formation go only so far, and we are left with a series of rather ambiguous terms that try to capture some overarching function of weaving together that must occur for an individual to

achieve that sense of continuity, resilience, membership, and uniqueness that is the hallmark of adolescence.

As is well known, the once secure metapsychological scaffold on which Blos supported his elegant observations and clinical formulations has been shaken by a ferment in psychoanalysis that has included revisions of the biological basis for thought and subjective experience, contributions from the clinical situation, and considerable input from developmental and cognitive psychology. This ferment is intimately connected to issues of the scientific standing of psychoanalysis, the definition of psychoanalysis as a method of introspection and empathy rather than of interpretation, and uses of the concept of a self within a model of subjectivity or as a concept synonymous with an organizing biological system.

In my view, the field has taken three directions in response to the failure of Freud's theory to provide an adequate biological basis for psychological development, or for the process of therapeutic change. The first has been to continue to use the language of ego psychology without concern for the problems with theoretical coherence that arise when one uses ego as a metaphor. For example, Coppolillo (1984), adding to Rapaport's concept that the ego can make alternative responses to the environment and to the id, suggested the additional view of the ego's capacity to view itself. Over time and in various combinations, there are flexible shifts between sensitivity to the environment, drive investments, and a sense of self in relation to the world. These three alternating ego activities comprise the synthetic function. Taken together, this activity creates an organizing, integrating effect, while the moment to moment shifts are manifested in typical adolescent behaviors. Richmond and Sklansky (1984) presented a critique of structural change as described by Blos, Gitelson, and Schafer, and suggest that the significant issue in adolescent synthesis is the attempt to establish ego autonomy, sighting the relationship of failed identity formation and early childhood conflicts over autonomy. And most recently, Bloch (1995) argued for three basic issues in adolescent development: internal striving to complete development, the need for parental sponsorship towards that end, and a wish to maintain a positive relationship with one's parents. In his orientation, Bloch retains an ego maturational view, while using infant observation, systematic research on adolescence, and clinical studies of subjectivity.⁴

A second direction has been to reject any need for theoretical coherence with biology or the developmental sciences and proceed with a view that psychoanalysis is purely the study of meaning systems and narrative coherence. Schafer (1979), for example, in his examination of character formation and change, argues that questions of character and character change are best described in terms of the way a person organizes and changes action patterns that relate to problems, conflicts, and priorities. While these processes may be unconscious and ego-syntonic, they are not governed by an inner agency.

The third direction has been to attempt to arrange the clinical findings of psychoanalysis on a coherent biological foundation. It is with this in mind that I now turn to a discussion of dynamic systems as it applies to developmental and clinical phenomena. I believe that a dynamic systems view of development has implications for our understanding of adolescence and our activities with adolescents. This approach may help us to describe more accurately the integrative process in adolescence, and, through that avenue, to bring together the theory of adolescence and the variety of therapist actions we take with adolescents.

Dynamic systems⁵: An introduction

Systems principles occupy a burgeoning area of interest for psychoanalysts (Spruiell, 1993; Galatzer-Levy, 1995; Shane, M., Shane, E., and Gales, M., 1997; Stern, 1998). However, they certainly are not new to our field. General systems (von Bertalanffy, 1969) concepts have been adopted by psychoanalytically informed researchers studying infants (Emde, 1983; Sameroff, 1983; Stern, 1985) and by some psychoanalysts (Gedo and Goldberg, 1973; Basch, 1980, 1988; Gedo, 1988, 1993; Lichtenberg, 1989) as the foundation of a theory of motivation, development, and adaptive dysfunction. Analysts who remain convinced that psychoanalysis must be coherent with knowledge from related fields of biology and cognition have looked to general systems theory to organize the yield of infant research, linguistics, learning and information theory, and neurobiology to provide a theory of mind. While analysts use this information in a variety of ways, there is little question that this trend has significantly impacted psychoanalytic explanatory and clinical theory, challenging and broadening accepted therapeutic techniques and views of the therapeutic process.

Systems principles in general have certain properties that are relevant to biological systems in particular (von Bertalanffy, 1969). Biological systems are self-organizing, self-righting, and self-stabilizing. They demonstrate multiple ways to achieve a common developmental outcome, a principle termed equifinality. In addition, as biological systems become more complex, they tend to progress from wholeness towards differentiated subsystems. Two aspects of this tendency are important for our discussion. First, while differentiated subsystems remain constituents of the whole, each subsystem develops more fixity and less flexibility, creating the appearance that the part may be separate from the whole. Second, if one part is more prominent, it may appear that the system centralizes around that part. In such cases, small changes in that so-called leading part may create large changes through the system as a whole, or appear to be the primary cause of changes in the system. In this sense, an individual may be defined as a centralized system, and individuality may be seen as a function of the hierarchical arrangement of relations of subsystems within a whole.

There is an interesting paradox embedded in this view. With greater complexity comes increasing differentiation and centralization, creating the appearance of independent elements. At the same time, the differentiated organization is entirely a function of the unity of the whole. "In this view, individual stands for indivisible. Strictly speaking, biological individuality does not exist only progressive individuation" (von Bertalanffy, 1969, p. 71).

While systems principles have been accepted for some time, they have only recently been formally applied to empirical studies of the developmental process.⁶ The goal of an empirical application of dynamic systems is to understand how local processes lead to global outcomes. These new contributions provide the opportunity to extend the application of a systems perspective in psychoanalysis beyond its previous bounds.

A core assumption of the dynamic systems approach (Thelen and Smith, 1994) is that "the acquisition of mental life is continuous with all biological growth of form and function" (p. xiii). This view is consistent with the core concept of the self system as it has been used to instantiate systems principles in psychoanalytic views of development. As with Freud, a self embodied in biology is fundamental, but the "biology" of self is defined as the ordering activity of the whole person.

The concept of self has multiple references. It connotes a system of organization that includes the whole person as a biological system, behavioral organization, and self-reflection or subjectivity. The concept of self replaces Freud's constructs of a mental apparatus constructed of instinctual energy with concepts of order and self-organization, affect, pattern matching and feedback, and the decision-making functions of the brain (Basch, 1988).⁷ There is no primary motive here; no biological bedrock of sex, aggression, attachment or autonomy. Similarly, there is no built-in force or instructional set that determines a particular developmental goal, nuclear plan, or even completing development. There are only some elemental tropisms in brain organization (i.e., visual orientation, kinesthesia, thermoregulation, satiation) that tilt the organism towards responding to circumstances that promote internal and adaptive function. The functional status of the self system is inferred via descriptions of behavioral and subjective phenomena that result from the systematic inspection of a person. In psychoanalysis, these views of the functioning system have been described in terms of motivational systems, levels of behavioral organization, and subjective domains of self and relatedness. The emphasis in this approach is on the shifts in functional organization and subjective experience.⁸

Dynamic systems (Thelen and Smith, 1994) assumes that while "the endpoints of human development are complex and unique, the processes by which we reach these endpoints are the same as those that govern development even in simple organisms, and to some degree, even in complex, nonliving systems (p. xiii)." Dynamic systems asserts that developmental principles are isomorphic from the level of DNA to the level of the day to day. As we shall see, this view allows general statements about development and attention to the moment-to-moment exchanges between therapist and patient to be treated as of a piece.

Dynamic systems explores development as a context sensitive, opportunistic cooperation of subsystems that result in the emergence of general developmental achievements and stable patterns of self-organization (Thelen and Smith, 1994). In this approach, the fundamentals of dynamic systems in operation occupy the central focus, rather than their emergent manifestations as phases or stages of development. This approach suggests a re-examination of the relationship between descriptions of development as phases and the actual operational occurrences that constitute developmental progression. It highlights aspects of development that may shift our understanding of the phenomena we observe, and therefore our approach to it in the clinical setting.

A dynamic systems view of development

Ordinarily, we think of development as progressive, orderly, incremental, and having direction (Thelen and Smith, 1994). For example, we expect that newborns will follow an orderly sequence of walking, talking, physical and psychological self-sufficiency, and reaching reproductive maturity. We can circumscribe the ages and sequences of these events into a progression of "developmental milestones" or "stages of development" over the life span. This process is generally viewed as directional and nonreversible. That is, once new structure forms, the person does not revert to earlier forms. Functions may decline, or appear childlike, but this does not equal an immature organism. In our field, for instance, we may speak of an adult functioning like an adolescent, but we do not view the adult as returning to adolescence. Similarly, we may see people who, under stress, may be unable to use certain functions, but that does not equate with their having returned to an era when those functions were not yet developed.

Thelen and Smith (1994), in their application of dynamic systems principles to the development of cognition and action, label this view of orderly, goal-directed and directional progression as "the view from above". The view of orderly progression makes development appear to head towards an end state such as the adult standard of formal reasoning. In our field, this may include some adaptive goal such as genital primacy, autonomy, or mature relatedness. As noted above, a problem with these approaches is that they have to postulate some underlying guiding mechanism to account for the general progression. In psychoanalysis that appears as some primary motivator such as libidinal instinct, autonomy, selfobject functions or some central organizer like the synthetic function of the ego.

In contrast, development may be viewed the other way around. From the "view from below" (Thelen and Smith, 1994), "development is messy ...linearity, uniformity, inevitable sequencing, and even irreversibility break down...What looks like a cohesive, orchestrated process from afar takes on the flavor of a more exploratory, opportunistic, syncretic, and function-driven process in its instantiation...At close range, the rules for development do not hold. What determines the behavioral performance seems less like the grand plan or timetable than the immediacy of the situation or task at hand. Our efforts to organize developmental phenomena into lawful relations appear stymied by the phenomena themselves...The paradox is that the organism moves along as an adapted, integrated whole as the component structures and processes change in fits and starts" (p. xvi-xvii).

This "view from below" highlights the idea that although development appears structured and driven, there are no pre-programmed rules for maturational progression that ultimately govern psychic structure. Instead, there is complexity (Thelen and Smith, 1994), "multiple, parallel, and continuously dynamic interplay of certain stable solutions that emerge from relations, not design...When the elements of such complex systems cooperate, they give rise to behavior with a unitary character, and thus to the illusion of structure. But the order is always executory, rather than rule-drive, allowing for the enormous sensitivity and flexibility of behavior to organize and regroup around task and context" (p. xix).

In this view of the path towards overall order and integration, development proceeds by the simultaneous cooperation of multiple subsystems. There are a number of important features to this assembly process. First, development is asynchronous, meaning that not all structures and functions develop in step with one another or as a unified whole. For example, humans are advanced very early in some abilities such as the sensory and visual systems, while motor skills develop over years. Second, elements of what will later emerge as integrated performance in cognition and behavior can be detected long in advance of the fully functional adaptation. In studying how infants learn to walk, for example, there is evidence that they are very competent stepers in certain contexts long before they can walk on their own (Thelen and Smith, 1994, p. 10-16). Third, there may be sudden appearances and disappearances of behaviors, referred to in dynamic terminology as phase shifts (p.84). Fourth, there is reversibility. There may be a decline of a function (sucking). Alternatively, the losses may be immediately context-bound and short-term, as in the commonly observed phenomena of *décalage* that occurs when new abilities are first emerging (p.86). Finally, at any given moment, the stability of the overall system, the manifest behavior, represents the cooperative function of the subsystems at the time the behavior is assembled. The assembly always occurs in a particular environment and task context.

Over time, developmental phases or patterns are formed from the cooperative interactions of subsystems that results in differing stable configurations. Change over time occurs in the context of any sustained internal or external conditions that create a context for reorganization. In the language of dynamic systems these conditions are termed control parameters. Over time, there may occur jumps from one configuration to another, there may be a seemingly linear progression from one to another, or configurations may not change at all. The overall view of phase-like progression is a function of the cohesiveness, resilience, and flexibility of the human system as it is active in assembly within parameters of context and task. There is equifinality, with many possible subsystem configurations yielding the same overall manifest adaptive responses. Patterns that emerge may change as conditions change, as subsystems vary in their overall effect, or as new subsystems are called into play.

From the perspective of “the “view from below”, context is centrally important. The phase-like order and local variability are inextricably tied through the very here and now that comprises the context of experience and action. First, context creates order, since it is the repeated here and now experiences that taken together over time create global order. Second, the context selects which order, or system of meaning or behavioral repertoire, will be adaptive. Third, context fits the history of responses to the current situation. Over time, development takes the general direction of moving from the here and now to associations across contexts, creating the appearance that behavior is removed from the moment-to-moment shifts. At the same time, it continues to select details that can cause the system to reorganize, making it more highly differentiated (Thelen and Smith, 1994, p. 216-217). In other words, the local details, the here and now, and the global order or the developmental phase, are the same thing. The difference is one of scale between the here and now and history.

Variability of behavior is intrinsic to the dynamic process of development. Quoting Thelen and Smith (1994): “These variable, fluid, task-sensitive local effects are not just noise in a grand developmental plan, but are the processes that engender developmental change. It is the very nature of such local complexity to produce behavior with global simplicity” (p. xviii). Variability, then, is an indicator of a system in flux, and an important aspect of transitions to new overall forms of behavior. During times of transition, when subsystems are not strongly cohesive, small changes in the environment or the organism can create large reorganizations. The system is free to reorganize. In contrast, subsystems that are inflexible may significantly limit the overall ability of the organism to change.

Adolescence: The View From Dynamic Systems

Within a dynamic systems perspective, adolescence may be considered a period of reorganization in the context of greater complexity. In the most generic sense, the shift occurs simply because contexts for adaptation change. We call these contexts for adaptation the developmental tasks of adolescence. But there is no inborn, supraordinate, primary motive such as pressure towards instinctual discharge, or a need to separate from infantile objects, or a new selfobject requirement. Instead, the adolescent process may be considered in terms of the shifting equilibrium of the organismic system, or self. It occurs as it does, in various forms in history and cultures, because the subsystem assemblies that are necessary for adaptation vary in context. Some integration will occur, but the on-the-fly, opportunistic, context sensitive nature of adaptation means that this will not be the same across all

time and cultures. In other words, one would expect that some new integration, or identity will emerge, but its behavioral manifestations, and even the individual’s subjective sense of it, will always reflect the context specific nature of its occurrence. Developmental tasks clearly are not the same for everyone. For example, one can imagine that an individual’s identity within a caste system, where all aspects of life are a function of specific status, would be quite different that a sense of oneself in a system where one’s role and status shifted as one moved in different areas of life (Sameroff, 1983).

From a dynamic systems perspective, psychoanalytic theories of adolescence may be considered examples of a “view from above”. Freud’s (1905) transformations to genital primacy, Mahler’s (1975) progression from hatching through object constancy, or Blos’ (1962) five phases of adolescence all serve as examples. These models carry the expectation of a maturational unfolding with order and directionality. To put this another way, psychoanalytic theory has largely approached development from the view of the desired end point, emphasizing analysis, or the question of how the whole can be understood in terms of the pieces. Recall that when Blos sought to explicate character formation in adolescence, he did so by analysis of the preconditions of individuation, residual trauma, genital sexuality, and ego continuity. The synthetic function of the ego was invoked to somehow tie everything together.

Dynamic systems (Thelen and Smith, 1994), however, emphasizes the alternative perspective that “development is not the specification of the outcome -- the product – but is the route by which the organism moves from an earlier state to a more mature state” (p. xvi). The emphasis is on the process of the emergence of new forms and functions. This view may shift how we think of such issues as re-working infantile structure and the variability of adolescent behaviors. Grandiose and narcissistic behaviors, well documented in descriptions of adolescence, provide an example.

The psychoanalytic study of toddlers includes the observation that very young children are apt to run headlong into dangerous situations. This observation has become associated with the proposition that toddlers are still driven by the pleasure principle, their infantile grandiosity holding sway over the reality principle (Mahler, 1975). Blos (1967) incorporated this idea into the theory that, consistent with the second individuation, the adolescent withdraws cathexis from the internal parental imagoes, with a return to narcissistic self-preoccupation. With it there is the re-emergence of grandiosity and a regression from the reality based ego of latency. A later revision of psychoanalytic theory added that the fearless behaviors of early childhood might also indicate the toddler’s need for a safe, guiding other, the idealized selfobject. This idea, too, was carried into a view that the phase appropriate de-idealization in adolescence results in the emergence of the archaic grandiose self that requires stabilizing selfobjects for self cohesion.

Interestingly, in a longitudinal study of how infants develop locomotion skills from crawling through competent walking, researchers have observed this very phenomena. In examining how infants learn to move effectively in different situations, Adolph and colleagues (as discussed in Thelen and Smith, 1994) examined how infants perceive the fit between their motor skills and the steepness of slopes. The researchers asked if infants could perceive whether or not a particular incline was beyond their ability to negotiate successfully. They found that infants’ knowledge about slopes was quite context specific. At first, crawlers flung themselves headlong down the slopes. Over time, they learned to be good judges of their capabilities and were much more cautious and

accurate about the task. However, when these same children began to walk, their knowledge about inclines did not generalize and they had to learn about slopes all over again. Strikingly, a child could be competent about slopes when on hands and knees, and immediately plunge headlong down the incline when standing.

These studies suggest that the so-called grandiosity of toddlers is, in actuality, evidence of developing locomotor skills that have yet to generalize into a broad pattern of hesitation at slopes until one can match skills to task. It is only through repeated trials in a variety of contexts that the overall adaptation emerges. To put this another way, dynamic systems highlights the exploratory processes that eventually coalesce into flexible knowledge. When the vantage point is on the route to adaptive function, context specific subsystems vary normally as stable patterns emerge.

The infamous variability and dichotomies in adolescent behavior takes on new meaning within this perspective. In this view, the fluctuations we observe in adolescents are not of necessity referable to re-evoked early developmental problems or modes of adaptation. They are not noise in the system, nor are they by definition indications of alienation from superego and ego-ideal with the reappearance of infantile narcissism, nor are they indications of loss of self-cohesion attendant to deidealization of stabilizing selfobjects. Instead, they are the very processes that engender developmental change. Such a person would be expected to demonstrate variations in capacities, some precocious, some crudely hewn and ungraceful, some functioning in harmony with the overall system, and some out of sync. There are areas where elements of maturity can be seen long before they are integrated towards adaptive progression, and there are areas where the need for external support leaves the adolescent quite dependent on the care and guidance of others. This process may be subtle or gross, loud, or soft, smooth or tumultuous, consistent with observations about the variety of normal manifestations of the adolescent passage that defy efforts to classify the many faces of adolescence according to single motivational models.

Let me provide an example.⁹ A nice boy wants to make love to a nice girl. There are many aspects of behavior and meanings that must work in harmony to effect the desired goal. In order to effectively develop a relationship, then perform sexually within it, he must first tolerate the intensity of the feeling. He must also associate it with pleasure without becoming overwhelmed so that a goal of satisfaction can be recognized. He must have realistic expectations for the sexual experience; that is, it may satisfy physiologic urgencies and bring about a temporary feeling of warmth and security, but it is not the entire relationship and will not in itself serve issues connected to power, attachment, or self-worth. He must find an appropriate partner who can mutually participate in the sexual experience. Problems in any area result in maladaptive behavior. For example, intolerance of tension may result in withdrawal from the stimulus. His inability to tolerate reality over illusion may lead to disruption in attaining sexual pleasure because it fails to fulfill the goal of establishing self worth or insurance against abandonment. If desire is morally unacceptable then inhibition or inappropriate choice of partners may be the outcome. Our amorous young man might be really competent in one area of this complex behavior, but quite inept in another.

Here lies the crux of the argument. What is important is the view that a reorganizing system requires many trials in multiple contexts to recruit many aspects of experience that will emerge in a stable overall adaptive pattern. In this view, action in thought and deed is the very

soul of development. Exploration, trial and error, assembly and reassembly in various contexts is how development proceeds. Interference with any one of the subsystems may derail the overall goal. In other words, it is the absence of opportunity for reorganization, or premature closure that is evidenced in adaptive problems. Turmoil is not necessary, but flexibility is.

Adolescent psychotherapy: A dynamic systems perspective

Like the psychoanalytic approach to development, the approach to psychotherapy has been from the perspective of an ideal of desired end points of maturation that are reached in an orderly, directional trajectory. It follows logically that such a position treats departures or variability from this trajectory as problems. That we have come to consider these phenomena as they appear in treatment in terms of resistance, deficits, or regression serves to perpetuate the notion that, save for problems creating disruptions, development would continue smoothly.

Of course, smooth is hardly a word most of us would use to describe adolescent psychotherapy. Therapy often unfolds erratically, with interruptions in sessions or crises in family or school. Even with a fairly reliable treatment setting, patients may manifest rapid shifts from reflective thought to reflexive action, or from organized goals, ideals, and ambitions to vague goals, unconnected to the paths towards their achievement.

Adolescent therapists are also distinct. The therapeutic process with adolescents typically includes interventions well beyond interpretation. In fact, the specific intervention of interpretation of unconscious conflict may form only a part, if any part, of the treatment. The therapist's activity is typically greater than in therapy with adults. It is not uncommon to hear that a colleague has appeared in a patient's life beyond parent or school conferences, having attended school plays, graduations, religious ceremonies, or weddings. While acutely aware of John Meek's (Meeks and Bernet, 1990) elegant cautionary advice about "unholy alliances", therapists nevertheless pursue the practical idea that the best alliance is developed by someone who can help genuinely, supplying both emotional authenticity and practical utility.

Still, somehow this fluid and messy process of actions and interactions does result in an overall shift towards adaptation, sometimes with a companion shift to a sense of oneself as at the center of one's own life. The addition of a dynamic systems view may point us towards a closer integration of these actualities of practice and a theory of adolescence. Recall that the "view from below" approaches development from the perspective of the processes through which stable organizations of behavior and cognition emerge. Moment-to-moment conditions create opportunities for behavioral responses that evidence the assembly of subsystems in the present, the history of that behavior in similar contexts, and the associations of that repertoire in the context of personal history.

As the adolescent, like our amorous young man, brings various subsystems to the fore in the form of behavior and subjective experience, the treatment provides a venue for multiple, context-specific trials towards reorganization. Venues may include individual, family, activity, and educational components. Sessions may run the gamut from interpretation to therapist self-revelation, and content may include fluid movement between existential contemplation to completing that night's homework. Each patient therapist pair will create a unique process.

Therapeutic change is embedded in these moment-to-moment interactions in the clinical encounter. Taken together, all these may reflect the active assembly process of adolescence itself. The organizing concept is that all these components of action, interaction, and reflection are of a piece, and together they result in new stable patterns of organization as they are assembled and influence the whole as it appears in the current environment. The process unfolds in a fashion isomorphic to the toddler learning to negotiate slopes.

Perhaps this approach can clarify the disjuncture between our view of adolescence and our encounters with adolescents. When we think in terms of stages of development, developmental tasks, or the recrudescence of childhood motivations and psychic structure, we organize our "view from above". Yet in our day to day experience of patients, we see and are part of exploratory, opportunistic, syncretic, and function-driven processes. Clinically, the "view from above" causes confusion because we look for sequential progression, while in fact we encounter multiple, often poorly synchronized interacting actions and experiences. In other words, a disjuncture arises when we think globally but act locally.

The advantage of a systems based theory is that it can retain the study of the unique organizing processes of each individual through exploration of meanings and motives contained in words, dreams, behaviors, and moods, while at the same time understand that the principles of change are related to the shifting organization of the system. Change is not a function of any particular technique informed by any particular theory; rather, change is a function of the actions, the moment-to-moment, opportunistic exchanges from which emerge a different self-organization. An understanding that there is an isomorphism between the scales of variable, context specific action and emergent stability over time allows us to see that developmental phases and the details of a moment are of a piece. There is cohesion between therapy and development because the processes of therapy are the processes of development itself. Therapy does not simply remove obstacles to development so that the synthetic function can step in to create spontaneously the denouement of the developmental story. At the level of patient therapist interactions we can appreciate that synthesizing and the events of the moment are merged. In this way, the central core of adolescence as a period of reorganization of behavior and self takes its place on center stage, rather than remaining in its previous role as the phantom of the developmental opera. And in the clinical encounter, we become part of the show.

In that regard, let me add a final word on the place of empathy and relationships in psychotherapy. A number of analysts have applied developmental findings to an understanding of therapeutic processes. Basch (1988), in particular, has aptly described psychotherapy as applied developmental psychology. Psychotherapy seeks to facilitate a reorganization in functioning through empathic immersion in the patient's subjective experience as well as an explanation of the patient's efforts to adapt. The fulcrum for change is the establishment of a relationship wherein the patient is able to use the therapist to enable self stability during the therapeutic process.

How does this square with a dynamic systems perspective? As I see it, dynamic systems suggests three perspectives from which to view relationships. First, in psychotherapy the therapist acts, in the totality of his or her verbal and behavioral conduct, as a control parameter; that is, as a steady, reliable, consistent presence, that creates a new context for the

patient, promoting reorganization in relation to that influence.¹⁰ Second, behavioral and subjective organization occurs throughout life in the context of interactions with others (Lichtenberg, 1989; Stern, 1985, 1998). In a systems perspective, that means that self-organization is not separable from relations. Self and other are inextricably entwined (Emde, 1983). It has even been argued that the appearance of a reflective self is itself an emergent property of, and dependent on, ongoing social interaction (Edelman, 1992; Barry, 1998). In that sense, as participants in the moment-to-moment exchanges, we are part of the system itself. The third point is related to the second. On the one hand, relationships ipso facto laden with emotion may serve as leading components of self-organization, and therefore small changes in relations may cause large changes in the overall system.¹¹ Nevertheless, there is no need to posit a primary motive of social relations embedded in the developmental process. If development is the process of reorganizing patterns, it is self-organization that is the thread through life. Some aspects of adaptive self-organization, in the normal course of life, may be unconnected to relationships at all.

Conclusion

The study of adolescents strikes me as a bustling marketplace of issues. Picture the open markets in Florence in the Renaissance or London's Portobello Road of today. In the marketplace of adolescent psychology, everyone gathered seems to share one thing in common: that somehow, roughly in the second decade of life, people transform from a state where they mostly behave and think like children to a state where they mostly do not. Merchants converge from diverse cultures with a variety of wares in the market square, loudly trumpeting their products, proclaiming their power and efficiency to understand development, describe its problems, and supply a fix. Biologists abound, proclaiming the power of their hormones to jump start development and to shape body and brain. Psychoanalysts have many kiosks, placed close together with the intent to drown out the cries of competitors with claims of superior power to explain and effect change. In this niche of the market especially, merchants tend to want their wares to occupy dominance, with the others' occupying a subsidiary role at most. Academics fill every spare inch, acting as monitors of truth in advertising, as referees reminding others not to occupy more space than they deserve, and as perspective enforcers who remind merchants that their much touted products are merely necessities of modern culture, with questionable enduring value or universal marketability.

In this chapter, I have suggested that a dynamic systems perspective points towards a cohesive, less cacophonous view of the study of adolescent development and adolescent psychotherapy. The concept of adolescence as a manifestation of an ongoing re-organization of the human system offers a unifying view of adolescent development, pathology, clinical interventions, and a theory of psychic change. Psychotherapeutic change and development represent shifting patterns of integration viewed from the differing perspectives of moments or years. Psychotherapy does more than remove obstacles to insight or development, at the level of patient-therapist interactions, we can see that it demonstrates the essence of development.

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Footnotes

1. A version of this paper was presented to the American Society for Adolescent Psychiatry. March 26, 1999. The author wishes to thank Drs. Virginia Barry, Henry Evans, Mark Gehrie, Lallene Rector, Brenda Solomon, Harvey Strauss, Frank Summers, and Barrie Richmond for their careful reading and critique of the ideas in this paper.
2. Our theory of adolescent development and treatment has continued to reflect these advances and controversies in the larger realm of psychoanalysis. Perhaps more than anywhere, the history of our own journal, *Adolescent Psychiatry*, reflects the influence of our progressively deepening understanding of adolescence. Fittingly, the first article of the first issue was authored by Peter Blos, while the first article of the most recent issue was by Dick Marohn, revising Peter Blos' concept of prolonged adolescence in light of our expanded knowledge of the importance of stabilizing others throughout development.
3. See Lichtenstein (1965), on Hartmann's "fourth dimension" and its relation to a metapsychological definition of self.
4. Parenthetically, this is an interesting example of how theoreticians with a variety of commitments to the fundamentals of the origins of psychological life enlist the same sources to argue their case, despite the epistemological inconsistencies in these approaches.
5. I use the term dynamic systems for consistency with Thelen and Smith's (1994) emphasis that these systems change continuously over time. The science has been alternatively named the study of chaotic, nonlinear, and self-organizing systems.
6. This work has been richly described by Thelen and Smith (1994; Smith and Thelen, 1993) and colleagues in two recent volumes. My overview is taken largely from their work.

7. his is not to diminish in any way Freud's contributions of a clinical theory of development and psychopathology. It does however, seek to place these and other clinical contributions in a context coherent with modern biology. Thelen and Smith use the neurobiological contributions of Gerald Edelman (1992) for their fundamental assumptions about human development. Edelman has suggested a theory of brain development and organization that views action, cognition, and conscious self reflection as emergent phenomena of complex reentrant neuronal pathways. They are not viewed as separate, but rather as of a piece, all emergent from the same basic organizing principles of biological systems.
8. See Stern (1985), Basch (1988), Lichtenberg (1989), and Gedo (1993), for detailed clinical and theoretical explorations of this approach.
9. This is an application of an example first used in Jaffe, 1997a.
10. See also Fajardo (1993) for a discussion of patient and therapist vantage points for addressing and experiencing this process.
11. This is precisely what we rely on in brief psychotherapy (Jaffe, 1997b).



Digital Immersion: Notes on Technology Use Among Yellowbrick Patients

Anne Beal, Ph.D.

Never before in history has innovation offered promise of so much to so many in so short a time.

– Bill Gates

Men have become the tools of their tools.

- Henry David Thoreau

Introduction

From May to December of 2017, I enjoyed the unique opportunity to devote one day a week to pre-clinical observation at Yellowbrick under the auspices of the Psychoanalysis for Scholars Program at the Chicago Institute for Psychoanalysis. A sociocultural anthropologist by training, I teach Freud, critical theorists, and others who draw inspiration from psychoanalytic approaches to mind and society. At Yellowbrick, I played the role of participant-observer, attending community meetings, individual rounds, advocate sessions, and patient groups, while taking note of informal patient and patient-staff interactions. Given my disciplinary training, Dr. Jesse Viner (CEO and Chief Medical Officer) and Dr. David Daskovsky (Senior Psychologist and Director of Professional Training), my immediate supervisor at Yellowbrick, invited me to develop a research project of general interest to the Yellowbrick community, with the expectation that I share my findings with patients and staff.

While a comprehensive ethnographic study of community life was impossible given my short stay at Yellowbrick, I embraced the opportunity to peer, however briefly, into the unique community that Yellowbrick is. Although anthropologists do different things, for many of us the study of ordinary, everyday life remains an irresistible focus. With this in mind, I spent my first month at Yellowbrick observing the routine rhythm of patient activities. Almost immediately, I was struck by the ubiquity of mobile phone use among patients as they congregated in corridors, passed time between scheduled sessions, and broke bread – or salads and sushi, more typically – around the lunch table. I began to wonder what impact technology use – and mobile phones in particular – might have on patients' subjective experiences, both as individuals immersed in an intensive treatment setting and as members of a shared community. Since the publication in 1984 of her groundbreaking work, *The Second Self*, Turkle's argument that technology should be understood not merely as a set of tools but as a crucial part of our psychological and social lives has become a truism in an age of ever-increasing digital immersion. What could be learned, I wondered, about the psychological and social experiences of patients from talking with them about their use of technology within the treatment setting?

This article is organized into five sections: project description; general findings (types of media, typical use, and extent of use reported);

individual impacts; community impacts; and conclusion. Given the small number of participants and limited duration of the project, my findings are only suggestive of connections between technology, individual psychology, and community functioning. Despite these limitations, reflection upon patients' experiences with technology affords a unique perspective from which to ponder some of the ways in which technology affects psychologically-troubled emerging adults. Moreover, it is plausible that the issues surrounding technology use discussed below are broadly relevant to us all, as we make our way amidst a rapidly-changing world in which personal and community relationships are increasingly mediated by electronic forms of communication.

Project description

During October and November of 2017, I conducted six individual 45-60 minute interviews with Yellowbrick patients, of whom two identified as female, three as male, and one as gender non-conforming, and who ranged in age from 19-30. Each of the patients volunteered to talk with me after I announced the project in a community meeting and posted a sign-up sheet on a bulletin board. The interviews were not recorded, although I took notes by hand. I did not record patients' names, nor did I share the content of conversations with patients or staff. The patients' detailed psychiatric histories were unknown to me.

Additionally, Dr. David Daskovsky, my collaborator in this project, distributed short questionnaires soliciting information about technology use to seven patients, two of whom identified as female, four as male, and one as gender nonconforming, during a regular meeting of his Attachment and Coping Styles group in September of 2017. Three of these patients (one female, one male, and one gender-nonconforming) volunteered to interview with me, bringing the number of individual patient participants in the study to ten (three female, six male, and one gender non-conforming).

Both interviews and questionnaires were structured around questions relating to the type and frequency of technology use as well as its effects on patients' psychological well-being and relationships within the Yellowbrick community. Questions and patient responses are discussed below. In addition, I presented on my final day at

Yellowbrick a thumbnail sketch of my findings to patients and staff at a community meeting and facilitated a group discussion of the issues raised. All patient interviewees remained anonymous in this forum. In one instance below, I draw from patient comments made during this culminating session.

General findings

Types of media and typical use. Patients reported using a variety of electronic media: Facebook, Pinterest, Reddit, YouTube, Instagram, Twitter, Snapchat, Skype, Tumblr, What's App, Linked In, Vine, Tinder, and GroupMe. All respondents brought mobile phones to Yellowbrick each day. Patients also reported using laptop computers at Yellowbrick, as well as desktop computers and gaming systems (Xbox and PlayStation) outside of the formal treatment setting. Listening to music, watching television and movies, searching the Web, reaching out to others through messages, emails, and telephone calls, and posting and reading updates on social media were all reported in response to an opening inquiry about the ways patients utilized technology. It is notable that no one mentioned using pornography, possibly because they were not queried directly about this topic, an omission on my part in light of various international studies estimating pornography consumption rates at 50 to 99 percent among men and 30 to 86 percent among women, with 25 percent of all internet searches directed to pornography sites (Hald, Seaman, and Linz, 2014, pp. 12-13). Patients may also have felt uncomfortable revealing sensitive information about their pornography use in a face-to-face encounter.

Time spent using technology. Patients reported a range of responses to the question of how much time they spent each day using technology. On the low end, two patients reported twenty minutes daily, while on the high end, one patient reported five to eight hours daily, as well as frequent all-night sessions on-line. The majority of patients reported using technology for an hour daily. This finding was met with general skepticism at the culminating group discussion, during which many patients asserted that actual time spent was much higher, particularly after taking into account nighttime use. The question of why patients likely underreported their technology use raises interesting questions about the extent of the patients' own awareness of their technology consumption as well as possible anxiety about perceived over-reliance on technology or the appearance of over-reliance, although these issues fall beyond the scope of this discussion.

Individual impact of technology use

Avoidance of difficult feelings. In response to the question, "Do you ever use technology to avoid difficult feelings?" all respondents except one responded in the affirmative. Patients were then asked to explain. A sample of patient responses follows:

I can escape into fantasy to escape reality.

Helps me when I feel boredom, anxiety, exhaustion, a sense of being alone.

I use my phone to turn down internal stimulation, like when my brain is bouncing from one thought to another. I use it to dull the volume on the other stuff (happening in the patient's mind). I need a palate cleanser and to recalibrate and sometimes a distraction helps sort things out.

If I'm depressed or angry, then yes, I use it as an emotional anchor.

It (technology) is a good distraction if I'm feeling psychotic, depressed, suicidal. YouTube videos are a really good distraction. I'm alive because of it.

Several patients volunteered that they knew that reaching for a phone to cope with difficult feelings was not optimal and that talking with a member of the Yellowbrick community would be a healthier strategy. At the same time, patients reported that the habit of turning to their phones at difficult moments was an entrenched habit that would be difficult to break, regardless of its negative consequences.

The view that modulating uncomfortable feelings with technology was problematic was not shared by all respondents. Two patients emphasized how helpful technology was to their daily functioning, both in and outside of Yellowbrick:

At Connections (Yellowbrick's group lunch setting with patients and staff), I need to relax after an intense morning (of structured programming). It's hard to make small talk then. It's nice to take a break with my phone.

For a long time I couldn't get on the "L" (Chicago public transit) because of my anxiety. Now I use my phone as a coping device. It's really great for someone overwhelmed by stimulation. I don't think I could leave my house without it.

Connecting with others. In response to the question of how often they had technologically-mediated contact with parents and other family members, responses ranged from daily to weekly contact (text messages, emails, and phone calls) with parents, while the majority reported approximately weekly contact with siblings and grandparents.

Patients expressed ambivalence around the benefit of electronic contact with parents. The majority acknowledged that they appreciated the opportunity technology afforded for family communication. At the same time, an undercurrent of dissatisfaction was characteristic of patient discussion around this issue, as exemplified by the following:

It all depends on the conversations I have with my family. If they (the conversations) are happy, I feel more connected with my parents, and I feel like trying harder to be independent. If not, I feel stuck and stop working toward my personal goals.

Notably, frequent contact initiated by parents did not enhance patients' feelings of meaningful connection with them:

They (parents) usually initiate contact to ask me a question or remind me to do something, usually with a text or email. My dad often sends me optimistic memes or links to articles he thinks I might like. They're not really personal interactions.

My parents mostly contact me about practical things, like whether I've paid a bill or whether I've finished unpacking or not. Sometimes they send me an article. It's not personal.

A majority of patients thought that receiving frequent texts and emails from their parents was sometimes unhelpful and hindered treatment progress:

It (frequent texts from parents) highlights the feeling of being not understood by them. Their constant reminders about things make me feel less independent, like I'm incompetent.

It would be better to have some space from my mother. She calls twice a week, and she texts a lot. I think it hinders me to have my mother's constant presence.

My parents are so critical (in texts and phone calls). My father texted one day that I better make good use of this (Yellowbrick treatment) because it's really expensive. That doesn't help.

Patients reported a wide range of responses to the question of whether they were in touch with friends outside of Yellowbrick during the treatment day:

Not so much. It's really difficult to integrate life here with life outside and life after treatment.

I like texting friends while I'm here, but I don't do it every day.

I text with my best friend every day, many times, throughout the day. Sometimes you need therapy for therapy.

Using social media. When asked about the impact of viewing social media on their psychological states, all but one patient reported a negative impact:

I compare myself with all the people who went to college, and I feel like a loser.

It's inevitable you're comparing yourself. Like seeing posts from parties where I'm not.

I saw pictures of my friend in Paris, and everyone's drinking wine in Paris. I felt so jealous! I didn't come here for problems with alcohol. It would be really nice to have a glass of wine. (Yellowbrick recommends patients refrain from consuming alcohol during treatment, regardless of their substance use history.)

I think social media makes everybody constantly anxious, constantly looking at everyone else. It's a community updating itself every few seconds. Everybody is judging, assessing, evaluating everybody else. It creates a kind of hypervigilance. You're always aware of things you don't need to be aware of.

Sometime I think, shit, why isn't my life like that? Then I remember I have depression.

I look at LinkedIn a lot. It's embarrassing how little I've accomplished compared to people I went to school with. I get jealous and pissed off.

Scrolling through updates on social media reminds me of my medical problems, and I think, "This isn't fair!"

If it's someone I like (on social media), then I'm happy for them (when they celebrate a success). Otherwise, I just feel bad.

Going on social media is a risk that you take - like driving a car you can crash.

In the context of this discussion, one patient was reminded that they (gender non-conforming) scrolled each day through an archive of personal photographs documenting their years-long descent from health to illness. "I see my life fall apart each day through 8000 pix," they sadly sighed.

Viewing social media was deemed such a vexing problem that three patients decided to avoid it altogether:

I stopped going on social media after a stalking incident.

I'm not a fan of social media. I used to go on it, but I just avoid it now.

I had to take a solid year off of Facebook. I just started it up again, but I think I might have to stop.

Only one patient reported no problems with social media use:

It's never an issue for me. I don't accept friend requests unless I meet a person and actually like you. You know, they used to call TV the idiot box. Well, they were wrong. TV is not the idiot box - phones are the idiot box.

Finally, several patients raised privacy concerns about information posted on social media. In one patient's words, "You shouldn't out someone as a mental patient on Facebook." Another patient mused that "there should be some secrets." Three other patients expressed anxiety about their posts on Facebook and Instagram being seen by members of the Yellowbrick community.

Worries about over-use of technology. Although patients were not asked specifically whether they worried about their technology use, several patients volunteered that they were uneasy about their reliance on technology as well as on the expansion of technology into so many aspects of daily life:

I use the computer to cool down. Sometimes I worry it's unhealthy. If I feel disgusted with how much I'm using it, I will stop. I think it requires mindfulness. (This patient repeated two more times during the interview that he was concerned that he had developed "unhealthy" patterns of technology use.)

Sometimes I tell myself I have to try to discipline myself to stop going on-line. Just turn it off. But it's really hard.

I think it (technology) has gone too far. It's too invasive. If it can be connected, it will be - and that's a bad thing.

Impact of Technology on the Yellowbrick Community

The question of the effects of technology use on the Yellowbrick community is an important one, as the development and maintenance of meaningful relationships among patients and staff are crucial to the open community treatment model. Beyond the shared daily structure of scheduled sessions and meetings, as well as the fact that many patients live together in the Residence, Yellowbrick offers additional opportunities for community members to come together such as weekly patient-hosted dinners, weekend trips to sites of interest in the Chicago area, parent weekends, and camping trips. Such shared activities constitute a form of ritual practice in that they express as well as create solidarity within the community (Durkehim 1912, 420); combined with collective commitment to ideals of patient well-being, growth, and connected autonomy, they help constitute a unique community setting integral to successful patient outcomes. During my time at Yellowbrick, the topic of community vitality was discussed frequently in weekly meetings as crucial to the Yellowbrick experience. Given the difficulties many patients face with social functioning as a result of emotional struggles, and the inevitable turnover of community members, Yellowbrick's success in establishing and promoting a sense of community among the patients is a remarkable accomplishment. How might technology affect the community life that Yellowbrick staff and patients collaboratively cultivate?

Benefits to the community. Patients expressed general agreement that technology – and mobile phones in particular – were very helpful for building community with respect to organizing group activities, coordinating plans with other patients, and setting appointments with Yellowbrick staff members. Beyond this logistical utility, four patients pointed to additional community benefits of technology use:

Seeing photos (on patients' mobile phones) from Saturday (group patient) activities is cool. It makes me feel like I'm part of the group.

It (technology) helps connect me to my peers and allows me to start conversations.

It makes me feel like more of a part of the Yellowbrick community. It helps me stay connected to peers who leave.

It's the only way I can keep up with people who've left (Yellowbrick). (Keeping up with other patients via electronic communication was a source of ambivalence for this patient, as she wanted to stay in touch but found that doing so was an ongoing source of worry about former patients' health. "How concerned do I need to be about a person?" she wondered aloud. "Being a caretaker is part of my core enactment.")

Five patients mentioned that sending text messages of support to patients going through difficult times as an example of positive technology use that helped strengthen relationships within the community. Two patients, however, reported that they did not appreciate well-intentioned texts from other patients but would prefer that patients approach them directly, a reaction consistent with Twenge's (2017, p. 88) finding that overall, in-person social interaction is superior to electronic communication when it comes to mental health. One patient explained the problem with texts this way:

Texts are a perfect way to miscommunicate. I hate the texts of

support. Non-stop texting is not supporting – it's overwhelming. Every morning I see texts in the teens (referring to the number of texts received), and they make me feel awful and overwhelmed. If I want support, I'll ask. I want to say, "Don't text me. Like just call me! Or, even better, come up and say hello!"

Negative impacts on community. With two exceptions, patients reported that frequent mobile phone use by patients during the day negatively affected their experience of connection with other patients:

I use my phone to distance myself from everyone else. I am literally in my own world when I look at my phone.

I look at texts during Connections (shared lunch hour) instead of dealing with awkward silences.

Sometimes I use my phone between groups so I don't have to talk to people at all.

Your phone can act like a shield. It's a sign that says, "Don't bother me!"

I put on my headphones between groups so I can avoid people.

While choosing to distance themselves from others by turning to their phones does not mean, of course, that these patients never experience moments of connection with patients and staff, there is little doubt that real-time face-to-face interactions with people in the same room are frequently foregone in favor of a virtual experience. This was perceived as especially frustrating in the context of group sessions:

Sometimes B (a patient) will have a phone out during groups when important stuff is happening, which is really frustrating.

People need to silence and put away their phones in group!

Yeah, it's really sucky (when people use technology in groups). You're allowed to wear headphones during art. It just feels very isolating and sad.

Avoidance is part of many people's core enactments, so it's kind of messed up that people are using their phones to avoid people here.

It seems like there are issues with (patients) distracting themselves from people and from programming. And it seems like there are issues with people with ADHD using their phone all the time to self-stimulate.

As a final question, patients were asked the following: If you and other patients were not permitted to use electronic devices, including mobile phones, during the treatment day, what effect do you imagine it would have on you and the Yellowbrick community? All patients immediately voiced practical concerns over the potential loss of their phones (What if there were an emergency? How would I schedule appointments? What would I use for a calendar? How would I call Uber?). Responses were mixed on the individual impact of the change:

I'm an introvert. I'd love not having to deal with all this stuff.

A huge relief.

I'd be fine without it.

I would welcome it. It often feels like an obligation to maintain contact with some people.

It would have less of an impact on me. Other people would push back – they're very attached to their phones.

I think it would be isolating for me because I only use my phone to contact friends.

I think I would feel really lonely without my social media. I don't think I would be able to function.

For me personally, it would not be good to not have a phone, because it would decrease contact with a friend I text every day.

On the question of the impact on the community, however, most patients thought that removing all electronic devices would benefit the group.

It would help peers connect and interact more when in the same room.

It would make people engage with each other more.

It would be good to get people away from the pressures of social media and pay attention to the people in front of them.

People would interact with each other a lot more.

Definitely people would talk to each other more. I think it would be really nice.

Conclusion

In this article, I have drawn attention to the prevalence of technology use among Yellowbrick patients and highlighted some of the potential consequences of that use on individuals as well as the group. My findings point to the potential benefit of addressing technology use within individual and group sessions as well as within the community as a whole. At a practical level, discussing the disruptive effects of technology on sleep (late-night on-line sessions, for example, may be a factor in some patients' struggles to get up and going in the morning) and brainstorming strategies for setting limits on technology could be important first steps, especially for those patients concerned about their relationship to electronic media. Research linking smartphone use to an increase in mental health problems among adolescents (Twenge 2017) supports the view that technology use, both in and outside of the treatment setting, is worthy of serious consideration by patients and staff alike. Given that advances in technology are not necessarily accompanied by increasing awareness of their effects on our individual and social lives, encouraging patients' recognition of the implications of their technology use might help them notice behaviors that escape conscious

awareness, provide an opportunity to make connections between patterns of technology use and core enactments, and in general promote Yellowbrick's goals of patient growth and connected autonomy.

Whether patients realize it or not, reaching for a phone at the lunch table or turning to social media in the hallway instead of toward the person standing nearby is not a choice without consequences for those around them. Such actions not only express internal feeling states such as anxiety but create in the moment a sign with implications for community life – a sign to be interpreted by other members of the community. As seen above, patients often understand the reflexive turn to phones as explicit attempts on the part of their peers to distance, distract, and disengage from the Yellowbrick community. Through the accumulation of many such acts, the consequences of technology use reverberate throughout the social fabric, putting at risk the hard-won accomplishment of community life. The irony here, of course, is that patients who rely on technology for escape into private worlds then bemoan the loss of sociability they find there. Perhaps the impulse to escape from social contact and into a virtual world – an impulse not limited to the patient population – should be challenged consciously as a fantasy that can only be fulfilled at the cost of losing meaningful connections with others.

In *Alone Together*, Turkle (2011, p. 243) advocates for *realtechnik*, an approach to technology in which we recognize its possibilities but are simultaneously mindful of its problems. In Turkle's view, technology affords both novel opportunities for connection as well as new solitudes, and it is up to us to use it in ways that promote our humanity rather than diminish it. "When we are at our best," she writes, "thinking about technology brings us back to questions about what really matter." Returning to questions that matter demands that we not only recognize the omnipresence of technology in our lives but that we resolve how to use it in ways that are life-affirming. In the insightful words of one patient:

Technology is not going away. We need to decide what's healthy for us, and what's not. I would say that what's most important is that we have to cultivate mindfulness about the way we use our phones.

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The Computer As Patient

Irwin M. Siegel, M.D.

All professions and most jobs require contact with people, medicine more than most. Undeniably, computers have facilitated record keeping, and data transmittal and retrieval for doctors in practice. Nonetheless, overzealous use of this technology, particularly in history taking, can disrupt and diminish patient contact, depersonalizing, even dehumanizing, the doctor patient relationship. I routinely ask my students after they have completed a "computer history" what color a patient's eyes are. Most do not recall; sadly, they were engaging the computer, not the patient. As practitioners, we seek the person in our patient. Emotional proprioception is refined not so much by medical instruction as by liberal education and life experience embodied in our singular histories and feelings. We are people first; we are doctors second. Our humanity informs our practice. Our patients are people, not products.

It is our fault that trainees often refer to "the gallbladder in room 315" or "the hot appendix in room 9." Management which is caring rejects emotional distancing from the patient. Just the opposite is sought. We should see ourselves as physicians, not health providers, and our cases as people, not clients. We call each other up as fellow human beings through facial recognition. Machine-mediated contact denies this to us. Philosopher David Hume said that "the moral imagination diminishes with distance." This distance can be mental as well as physical, as determined by computer use. Only through direct patient contact can we make whole those entrusted to our care and in so doing become our own best selves.¹

Which brings me back to the computer. An able slave, an inept master. The patient, not the machine, requires our attention. However slick the technology, there is no app for empathy. We should communicate with the person. Much of that communication is nonverbal. Only about 70 percent is words. Meanings are also found in feelings. In any clinical encounter, feelings should be regarded as facts, and listening is more important than talking. More information is gleaned from listening than speaking. You speak at a rate of 125-150 words per minute, but you can listen at a rate of 400- 750 words per minute. Listening should be empathetic. "How does your condition make you feel?" "What effect has this injury had on your day-to-day functioning?" We listen with our eyes, our ears, and our hearts. A computer inhibits this, as it allows us to dial down human contact, titrating its nature and extent, flattening a person into a profile. As physicians we are granted the privilege of presence with our patients. We should cherish, not ignore, this privilege.

How does a computer, instead of directly engaging the patient, affect the doctor? How can time spent on a computer spend you? What is lost? Intimacy? Authenticity? The computer is not the doctor. A computer has trouble understanding how a patient talks or feels. So we teach our doctors to talk and feel in the language of numbers, which can be understood by a computer. Often a dear price to pay for the digital efficiency it provides. As Thoreau once said, "Men have become the tools of their tools."

Overcomputerization of a medical practice is a cause of burnout. A recent study by the American Academy of Neurology of burnout in 1671 practicing neurologists² revealed that, among other dimensions, 41 percent felt high detachment (depersonalization), a state of mind enhanced by using a computer.

Our mirror neurons fire both when we observe others and when we act ourselves. The emotions occasioned by genuine patient contact release neurochemicals that generate required empathy. All this is lost in computer processing.

What is most suitable for our purpose in the practice of medicine as a forming and defining passion, a machine-mediated relationship or a genuine human contact? Joan Damsey, founder of Damsey & Associates Ltd., a practice management firm in Norfolk, Virginia, suggests the word SOFTEN as a mnemonic for effective body language indicating interest in and concern for the patient. S is for smile. O is for open posture, F is for slight forward lean, T is for touching, E is for eye contact, and N is for nod, saying "I hear you, I understand what you're saying."³

A patient needs to know that his doctor is sincere, not simply a digital catalog of easily-received facts and findings, stored on a cold disk. Albert Einstein once said, "Machines make our life impersonal, and stultify certain elements in us and create an impersonal environment."⁴ To be truly sincere is to regard and treat the patient as a person, a warm human being like yourself, with emotions, needs, fears, and feelings.

Computers are able slaves, poor masters. No one suggests abandoning these slaves, just using them properly. By engaging the patient, not the machine, conducting the interview directly and then transcribing the history, sitting facing the patient, not the computer screen, establishing and maintaining eye contact, creating a comforting and personal environment propitious for healing, the computer becomes a worthy agent.

The computer is no more or less than an instrument for treating our patients.

The computer is *not* the patient.

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Studies Presented at the International Clinical TMS Society Meeting May 12, 2018, Brooklyn New York

Zachary Bloomberg, Louis Dube, Matthew Graller M.A., Laura Viner, Ph.D. and Jesse Viner, M.D.

Deep TMS FOR MDD AND CO-OCCURRING SUBSTANCE ABUSE DISORDER

Louis Dube, Zachary Bloomberg, Laura Viner, PhD and Jesse Viner, MD
Yellowbrick Center for Clinical Neuroscience

Objective

This study examined the efficacy of Transcranial Magnetic Stimulation (TMS) for the treatment of complex and severe Major Depressive Disorder (MDD), with comorbid substance abuse, in a series of young adults.

Introduction

There is robust support for TMS as an effective treatment for MDD (Loo, 2005; Carpenter et al, 2012). Much less is known about its efficacy with complex and co-occurring disorders such as substance abuse. Almost one third of those with MDD have co-occurring substance abuse and have an increased likelihood of overdose and suicide (Davis et al, 2008; Schulte & Hser, 2014). Such complex problems are often interdependent and extremely treatment resistant. For these reasons, it seems important to begin to examine and address these comorbid conditions using TMS.

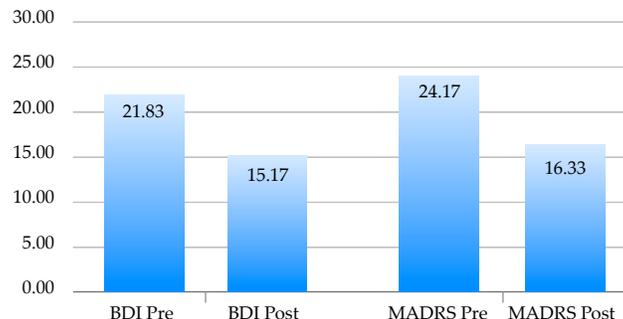
Participants

A series of 5 patients (3 males and 2 females) participated. They had MDD and substance abuse according to SCID interviews by an experienced psychiatrist.

Methods

The pre- and post-measures of depression included the Montgomery-Asberg Depression Rating Scale (MADRS) and the Beck Depression Inventory (BDI). Urine toxicology analyses served as measures of sobriety status. Each patient completed at least 18 sessions of dTMS utilizing Brainway's H1 helmet and the protocol for Depression.

Depression Scores



Results

All 5 patients improved in their pre- to post-TMS MADRS scores (mean = 34%, $t=3.26$, $p=.03$) and showed a trend on the BDI (mean = 41%, $p=.19$). All 5 patients showed improved sobriety, on all urine toxicology measures of alcohol and drug use, both during and after their TMS treatment (mean = 85% sobriety). Three of the 5 patients maintained 100% sobriety on the random urine toxicology screenings during TMS treatment and for the following 29.5 weeks.

Discussion

This series of 5 clinical cases supports the use of dTMS in the treatment of MDD with co-morbid substance abuse. While the sample size is small, the results of these 5 cases showed that treatment of severe, complex MDD with dTMS may also be beneficial for co-occurring substance abuse. Considering the cumulative risks associated with chronic substance abuse in MDD, it is critical to further investigate the parameters and effectiveness of dTMS in this population.

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Deep TMS for Obsessional Thinking: ACC Deregulation and Genomics as Possible Outcome Markers

Matthew Graller M.A., Laura Viner Ph.D., Jesse Viner M.D.
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Objectives

The purpose was twofold: 1) to examine whether TMS targeting the anterior cingulate cortex is beneficial in reducing severe obsessional thinking in complex patients and 2) to determine whether treatment response may be associated with a deregulated anterior cingulate cortex and/or certain genotypes.

Introduction

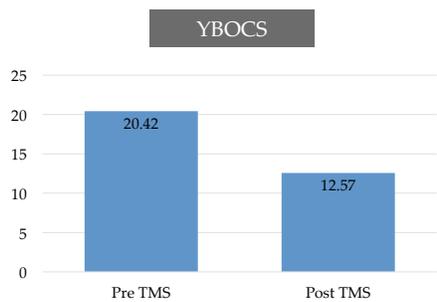
Evidence is accumulating in support of the use of TMS for the treatment of OCD (Berlim et al, 2013; Zangen, 2016). The anterior cingulate cortex (ACC) is the brain target of choice for OCD because it is central in the processing of negative emotions including fear and threat (Etkin, 2011; McGovern and Sheth, 2017), which is at the core of OCD symptoms. A TMS device that targets the ACC is a promising approach to this often treatment-resistant problem. At this point, it has not been established whether a deregulated ACC may, in actuality, be associated with more positive outcomes for TMS treatment targeting the ACC.

Method

A sample of 8 patients, 4 male and 4 female, aged 19-31, participated in the study. All 8 patients had severe obsessional thinking as determined independently by three senior psychiatrists. Baseline YBOCS, qEEG, and genomic analysis from Genomind were obtained at admission to treatment in an intensive outpatient facility. Patients underwent 29 DTMS treatments delivered over a 6-week period utilizing Brainsway's Deep TMS (dTMS) platform and the H7 helmet. YBOCS were measured weekly.

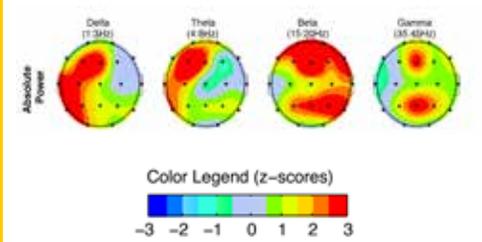
Results

All 8 patients achieved at least partial response to treatment. Five patients achieved full (>30% reduction) on the YBOCS) and 3 showed a partial (>20% reduction) response to treatment. Two of the 8 achieved full remission (<10 final YBOCS score). Severe deregulation (> 2 SD) was found in delta, theta, and gamma bands at Fz (over the ACC) in 5 of 8 qEEGs. Eighty percent of patients who achieved a full response to treatment showed a severely deregulated ACC in the gamma band, in relative power. Also, for the 6 patients who had full genomic analyses, all shared the INS/INS genotype on ADRA2 and 5 of the 6 shared a MET/MET genotype on COMT.



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Discussion

Our preliminary results support the use of dTMS, targeting the ACC, in the treatment of obsessional thinking. These findings also suggest that certain electroencephalographic and genomic markers may be associated with treatment response in OCD. The increased delta and theta frequencies found are associated with the perseverative nature of OCD while the increased gamma is associated with increased anxiety and worry. These findings mirror established qEEG patterns associated with OCD (Pacella 1944; Tot et al. 2002). The MET/MET genotype of COMT is linked with higher levels of dopamine in the prefrontal cortex associated with OCD (Sampaio et al. 2015). The ADRA2 genotype is associated with norepinephrine release and modulation and may be implicated in stress reactions in our severe cases (Cousijn et al. 2010).

Author Bios

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Anne Beal is a sociocultural anthropologist who has conducted fieldwork in Amman, Jordan, and in the Arab-American community in the Chicago area. She is a Lecturer in the Social Sciences at the University of Chicago, where she has taught classes in social and psychoanalytic theory for over fifteen years. A graduate of Harvard, she earned her doctorate in anthropology from the University of Chicago and is currently a trainee in the Psychoanalysis for Scholars Program at the Chicago Institute for Psychoanalysis. Her research interests include social theoretical approaches to the self, discursive representations of otherness, hermeneutics, and psychoanalytic theory and practice. Her current project, based largely on multi-generational interviewing, explores identity, memory, and symbolism among Palestinian-Americans living in Chicago's southwest suburbs.

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Irwin M. Siegel is an Associate Professor in the departments of Orthopaedics and Neurosciences at Rush University Medical Center, Chicago, Illinois. Dr. Siegel has been in practice for over 50 years and has lectured widely on his subspecialty, the orthopaedic rehabilitation of patients with neurological disease.

He has authored over 13 books, 150 papers and reviews, served on the editorial board of numerous journals, and holds memberships in many medical societies and academies.

In addition to his diverse medical activities, Dr. Siegel is an award-winning poet and an exhibited painter and photographer.

Jesse Viner, M.D.

Dr. Jesse Viner created Yellowbrick in recognition of the specialized needs of emerging adults and their families, and the necessity for a treatment system that addressed the unique challenges of the transition into adulthood. A recognized expert in the treatment of eating disorders, difficulties resulting from trauma and bipolar disorder, Dr. Viner has four decades of experience applying the knowledge of psychiatry and psychoanalysis to the challenge of creating meaningful and pragmatically effective treatment programs.

Following his education at Yale, The Chicago Medical School, Northwestern University Medical School Psychiatry Residency and The Chicago Institute for Psychoanalysis, Dr. Viner has served as Director of Adult Psychiatry Inpatient Services for Northwestern University Medical School; Medical Director of Four Winds Chicago, and Director of University Behavioral Health. He is on the faculty and Board of Trustees of the Chicago Institute for Psychoanalysis, and an Assistant Professor of Clinical Psychiatry at Northwestern Feinberg School of Medicine (1980-2012). Dr. Viner is a Distinguished Life Fellow of the American Psychiatric Association. Dr. Viner is the recipient of the Illinois Psychiatric Society 2015 award for *Excellence in Patient Services*.

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