Mental Health and Social Problems

A social work perspective

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13 Executive function conditions and self-deficits

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The efforts to integrate the research findings of the neurosciences into social work practice have gained increased attention in recent years. Works such as those of Applegate and Shapiro (2005), and Schore and Schore (2008) exemplify these efforts. Whereas social workers in school setting have historically been familiar with the challenges that children with learning disabilities and other neurobehavioral problems present, few efforts have been made to provide a conceptual framework for the clinical approaches involved in the treatment of these children (Palombo, 2001, 2006). Even less attention has been given to similar problems that adults confront. At the Chicago Institute for Clinical Social Work, students have generated several dissertations devoted to the study of some of these disorders (Himrod, 1995; Leamy, 2008; McNulty, 2000; Orenstein, 1992; Schufer, 1996; Segal, 1994; Zummo, 2007). This chapter attempts to fill in the part of the gap between clinical social work practice and recent knowledge derived from the neurosciences.

In his discussion of "executive function," Goldberg (2001, p. 23) compares the frontal lobes of a human being to the CEO of a corporation or an orchestra's conductor. Its functions involve the capacity to impose order among activities, to plan future actions, and to organize the sequence in which those actions should unfold. He suggests that among the talents of those who posses good executive functions are the capacity to be "smart" and "shrewd" (p. 104).

An initial tentative definition states that executive function disorders (EFD) manifest in patients as neuropsychological impairments that reflect frontal lobe dysfunctions. Individuals with these impairments suffer from a range of constraints on their competencies and on their capacity to function; their disorganization interferes with their ability to obtain successful outcomes in the tasks they undertake. They have difficulties initiating steps to implement plans; they are unable to manage time, to organize resources, and to self-monitor and self-regulate their actions to ensure the successful completion of the task. These disruptions may lead to academic underachievement in children and adolescents and to impairments in the capacity to be successful in the pursuit of a career path in adults (Palombo, 2001, pp. 163–190).

Such patients may also display problems in social interactions that disrupt their ability to sustain intimate relationships and emotional problems that lead to self-esteem disturbances and disorders of the self. Depending on the severity of their problems, the disorders of the self may range from mild disruptions in the capacity for self-regulation to serious disorganization in the sense of self. At the emotional level a sense of bewilderment as to why things do not work out overtakes them, resulting in an erosion of their self-esteem. Symptoms of depression, substance abuse, and negativity are common in those affected.

Although many affected by this disability fail to achieve academically or to realize their career aspirations, some, through a variety of strategies, are able to become highly successful in their chosen fields. In part, this is because success or failure is directly linked to the competencies that people bring to the challenges they face. Some succeed merely because they are able to

avoid tasks or situations that play into their vulnerabilities; others are able to find compensatory strategies that minimize the effects of their deficits (Anderson, Jacobs, & Anderson, 2008; Bernstein & Waber, 2007; Lyon & Krasnegor, 1996; Meltzer & Krishman, 2007).

The interest in brain function and dysfunction in the past decade has brought to our attention a number of conditions that were previously poorly understood. Among these are the non-verbal learning disabilities (Palombo, 2006), Asperger's disorders (Klin, Volkmar, & Sparrow, 2000, p. 141; Mcdonald, 2008, p. 476), autism (Baron-Cohen & Swettenham, 1997; Ozonoff & Schetter, 2007), and the developmental variant of executive function disorders (Anderson, 2008; Bernstein & Waber, 2007; Borkowski & Burke, 1996; Denckla, 1996; Eslinger, 1996; Lyon & Krasnegor, 1996; Meltzer, 2007; Palombo, 2001; Torgesen, 1994). The challenges these conditions present to psychodynamically informed practitioners are multiple. The first challenge is to establish an adequate *understanding of the effects of the neuropsychological deficits on a patients' development.* Questions arise as to which is the primary contributor to the presenting problem, the neuropsychological deficits or the effects of the environment. Granted that we accept the premise that all development results from the interaction between nature and nurture, how do we calibrate the effects of the constraints that factors related to endowment place on a person's ability to attain an optimal level of development and of functioning over those of the impact of the environment?

The second challenge is that of *formulating the psychodynamics* that structure the psyche of individuals with this disorder. The interplay between factors related to endowment and those related to the environment present a level of complexity that challenges traditional formulations. Since elements of both are intertwined, how do we differentiate whether a set of responses by the individual is the products of the neuropsychological deficits or whether they represent defensive strategies to deal with others' responses to them?

Finally, *conceptualizing the treatment process and modifying traditional modes of interventions* to make those interventions effective present a separate set of challenges. How are we to understand what constitutes transference and what is due to non-transferential factors in how the patient relates to the social worker? What is the role of interpretation in the helping of clients with these life conditions and are didactic formulations necessary adjuncts to the treatment?

Insufficient attention has been given to the psychodynamics that are at play in the symptoms of clients with executive function disorder, the primary focus having been on the nature of the cognitive impairment and its sequelae. Social workers unfamiliar with the effects of the neurobiological deficits of their clients have been at a particular disadvantage in their ability to formulate adequate assessment and diagnostic impression and, consequently, to modify their interventions to take these deficits into account. Any psychodynamic formulation must take into consideration not only the relational dimensions of their clients' experiences and the particular meaning they have assigned to their exposure to their environment but also the neuropsychological strengths and weaknesses that clients bring into the world with them. An illustrative vignette helps visualize how the disorder may appear when encountered by a clinician.

Cory's mother described him as having been a very active toddler. At times, he would have serious tantrums. He learned the alphabet by 18 months. By age three, he liked to climb and jump off the jungle gym, taking risks and being unafraid. As a student in grade school, his teachers said he always rushed through his work. He made careless mistakes and was poorly organized. They also said he needed to show more control and not speak out so often in class. In fifth grade, Cory's teacher asked his parents to empty his desk into

a garbage bag because it was so messy and unorganized. From grade school through high school, his mother would joke that she was going to tie him to his desk. When he would go to his room to study, he would stay 10 minutes, at most. She would next find him watching TV, or teasing his brother. He seldom brought home his assignments, he would procrastinate getting to work on them; even if he completed them, he would forget to take back to school the work he had done. Cory's mother constantly had to prod him and nag him to do his schoolwork because he had very poor time management skills. In the mornings, after his mother woke him up, she frequently found him lying in bed 15 to 20 minutes later. By the time Cory was in high school, it was a daily battle to get him out of the house and to school on time. They thought he would never graduate from high school. His bedroom and bathroom were cluttered with papers, clothes, and books. At home, Cory never followed through with his chores. It seemed as if he weren't listening and some tasks would take three days of nagging and reminding before he completed them.

With the considerable support of his mother and tutors, Cory was able to place remarkably well on his SATs. He graduated from high school and even qualified for a National Merit Scholarship. A well-respected university accepted him with the anticipation that he would be able to sail smoothly through its curricular demands. However, Cory spent the first semester partying with friends, seldom attending classes, and was asked to take a leave because he was on the verge of flunking out. He came home feeling confused and utterly embarrassed at having to live at home with his parents. In short order, he fell into a significant depression.

In consultation with a clinical social worker who specializes in learning disabilities, his parents accepted a referral for neuropsychological testing, which established that Cory had an executive function disorder and also suffered from a dysthymia disorder. Upon referral for an evaluation, the psychiatrist placed him on an antidepressant. Cory also accepted a recommendation for twice-a-week therapy.

Historically, the association between damage to the frontal lobes and the consequent personality changes that occur was first demonstrated in the famous case of Phineas Gage in the mid-1800s. Gage was a railroad worker who survived an accidental explosion that resulted in a metal rod penetrating his lower left cheek and exiting through his skull. This resulted in damage to his left and partly his right frontal cortical regions (Damasio, 1994, pp. 3–51). The injury left Gage with reasonably intact cognitive faculties but had a devastating effect on his personality. He changed from a valued leader of his crew to an impulsive, argumentative, erratic worker, who was no longer able to perform his job. In time, cases such as those of Gage helped establish an association between frontal lobe lesions and poor performance in the execution of life skills that we now identify as executive function disorders.

Between the 1930s and 1950s, neurologists performed lobotomies to "alleviate the symptoms of some mental disorders" (Solms & Turnbull, 2002, pp. 203–205). The procedure involved the random destruction of prefrontal cortical tissue. This left the person without the anxieties and psychotic symptoms from which they previously suffered but resulted in dramatic changes in the patients' personalities, displaying blunted affect and became zombie-like shadows of their former selves (see El-Hai, 2005; Gazzaniga, Ivry, & Mangun, 2002, pp. 122–123). Milos Forman's (1975) movie version of Ken Kesey's book (1962) *One flew over the cuckoo's nest* dramatically illustrated the devastatingly deleterious effects of the procedure. These procedures

provided further confirmation of the association between damage to the frontal regions of the brain and serious personality changes.

In his informative book *The executive brain: Frontal lobes and the civilized mind*, Goldberg (2001) states: "Frontal lobe dysfunction is to brain disease what fever is to bacterial infection" (p. 115). Executive function difficulties are ubiquitous among many conditions, such as Parkinsonism (De Luca & Leventer, 2008, p. 41), Traumatic Brain Injury (Baddeley & Wilson, 1988), and psychiatric disorders such as schizophrenia (De Luca & Leventer, 2008, p. 41). Drug dependence and Obsessive Compulsive Disorder (Green & Ostrander, 2009) may also disrupt executive function capacities. The neuropsychological deficits and psychosocial disturbances from which persons with these conditions suffer are not unlike those with the *developmental variant* of the disorder, who manifest no evidence of brain damage and who do not suffer from a major psychiatric condition, except possibly for ADHD, which is often a comorbid condition (Barkley, 1990, 1996, 1998). In this chapter, the focus is on individuals with the *developmental variant of the disorder of executive function disorders* (Bernstein & Waber, 2007; Harris, 1998, p. 43).

In spite of the apparent correlation between frontal lobe lesions and symptoms of personality changes, current views of brain function caution against attempts to localize specific psychological functions within specific regions of the brain. Whereas in the early days of the history of neurology, localization of the effect of brain damage yielded insights into the relationship between brain dysfunctions and behavioral manifestations, such a modular approach is now brought into question. Neuropsychologists now follow Luria's, the Soviet neuropsychologist's path in viewing a more complex picture (Luria 1973, 1979). Taking issue with localization theories, he proposed three functional interacting units as organizing brain activity: *the unit for regulating arousal, waking, and mental states; the unit for receiving, analyzing, and storing information*; and *the unit for programming, regulation, and verification of activities* (Luria, 1973, p. 43). The last of these is associated with executive function capacities. Luria led the way to conceptualizing brain functions in holistic terms rather than a set of isolated systems that have little impact on one another other. Multiple regions of the brain undergird any specific psychological function. Consequently, it is inaccurate to attempt to establish a direct correlation between executive function disorders and frontal lobe dysfunctions.

In summary, whereas historically executive function disorders were correlated with specific impairments of the frontal lobe, this view proved to be simplistic and imprecise. The brain systems that undergird the psychological functions associated with executive functions turned out to be much more broadly distributed. The personality changes that accompanied brain injuries or lesions present challenges to those who seek a psychodynamic understanding of the psychological makeup of these patients. Furthermore, the recognition that some children and adolescents for whom no evidence of actual brain damage existed but who displayed behavioral symptoms similar to those who had known brain lesions, led to the hypothesis of the existence of a developmental variant to the disorder. Answering those challenges requires a closer examination of the definitions that neuropsychologists propose and an exploration of their limitations.

Definitions of executive function disorders

Executive function disorders (EFD) of developmental origins are defined as learning disorders found in individuals of at least average intelligence, whose neuropsychological deficits are due to genetic, heritable, or environmental disruption in brain function. These deficits must be *unrelated* to brain dysfunctions caused by lesions, head injuries, or other physical impairments (Coplin & Morgan, 1988, p. 614). The dysfunctions interfere with the person's capacity to perform satisfactorily in one or more of the social, academic, occupational, or emotional

domains. Learning disabilities are a subcategory of learning disorders. Educators, educational psychologists, and neuropsychologists use the term learning disabilities in their assessments of children eligible for school special education services. Executive function disorders are not officially designated as learning disabilities, consequently children with the condition are not eligible for the school services that are mandated under federal legislation, but may receive accommodations because of the related attentional problems that often coexist with the condition (Cohen, 2009; Ellenberg, 1999).

From a neuropsychological perspective Lezak (1983, Ch. 16; Lezak, Howieson, & Loring, 2004, Ch. 16) describes four behavioral components of executive function: goal formulation, planning, carrying out goal-directed plans, and effective performance. Individuals with executive function problems may have difficulties in one or more of these areas. Goal formulation involves the capacity to conceptualize a plan and the ability to initiate steps to implementing it. Procrastination is probably the most prominent symptom of the failure in this capacity. Planning involves the ability to select and bring to bear a number of resources such as materials and skills that will be necessary to implement the plan. It involves drawing upon a pool of knowledge as well as envisioning the actual steps or obstacles that may lie ahead for the successful completion of the task. Carrying out the activities, or implementing the plan, involves the translation of the conceptual scheme into a set of behaviors or actions. Effective performance requires the person to inhibit responses to distractions so that tangential factors do not interfere with the attainment of the goal. Furthermore, it requires the resourcefulness and flexibility to find alternative paths to the goal if obstacles are met. Self-monitoring and self-regulation are important psychological functions necessary to stay focused on the task.

From an educational perspective, disorganization has frequently been considered a hallmark of EFD. Levine (1994, pp. 138–141) describes four types of persistent organizational failures in school-age children:

1. Material-spatial disorganization, which prevents children from dealing effectively with the equipment needed to be efficient in school. This occurs in such behaviors as losing personal possessions, creating messes among belongings; and not bringing home or returning assignments in a timely way.
2. Temporal-sequential disorganization, in which children display confusion about time and the sequencing of tasks, such as being late, procrastinating; having trouble allocating time, estimating how long a task will take to complete, or knowing the order of steps needed to complete a task.
3. Transitional disorganization, which involves difficulty shifting gears smoothly, and results in rushing from one activity to the next, having difficulty settling down to work, or being slow in preparing to leave home for school in the mornings.
4. Prospective retrieval disorganization, which involves the inability to remember to do something that had been planned in advance, such as forgetting the deadline of a project until the night before, failing to follow through with a promise to finish a task. Adolescents and adults are subject to similar difficulties.

Finally, the condition is not included in the *Diagnostic and statistical manual of mental disorders-IV* (American Psychiatric Association (APA), 1994).

From a neuropsychological perspective, Anderson (2008) states: "While a number of conceptual models of executive function have been proposed no model has been uniformly accepted" (p. 6). In what follows, I briefly summarize two of the major models proposed by investigators of the disorder.

Denckla (1994, 1996, 2007) presents a compelling argument for the relationship between executive function disorders and brain dysfunction. She presents data from neurology that indicates that patients with damage to the prefrontal cortex and its interconnected subcortical regions manifest many of the symptoms associated with executive function disorders. She suggests that executive function disorders are a domain-general impairment as contrasted with the modular or domain-specific impairments, such as dyslexia. By this she means that while researchers hypothesize a direct association between a set of symptoms and a dysfunction in a specific brain system, as in specific learning disabilities, such a direct relationship is too simplistic for our understanding of executive function disorders. The functions subsumed under executive function are broad and probably widely distributed, that is they involve a number of brain systems. Bernstein and Waber (2007) state:

> Developmental abilities and disabilities, therefore, are likely to reflect processes associated with the construction, integration, and the definition of functional networks, rather than the functions of specific brain regions. . . . It follows from this more systemic view that behavioral manifestations of executive functions can reflect the multiplicity of underlying factors that can influence the effectiveness and integrity of the network on which the task execution depends rather than the integrity of the specific region or regions, as a more modular approach would suggest.
>
> (Bernstein & Waber, 2007, p. 45)

Emerging agreement exists among researchers that an overlap exists between the executive function capacities and attentional abilities. Barkley (1996), who is a major advocate for this position, presents a hybrid model that incorporates both sets of functions. This hybrid model combines behavioral inhibition and four separable executive functions: non-verbal working memory; verbal working memory or the internalization of speech; self-regulation of affect, which includes regulation of arousal and motivation; and reconstitution, which includes the analysis and synthesis of the meanings of behaviors. This model of human self-regulation specifies that behavioral inhibition is critical to the proficient performance of executive functions. Behavioral inhibition refers to individuals' ability to inhibit responding to a stimulus. This implies that disorders of attention and executive function are closely intertwined; working memory is one of the most important components of the executive function system (Reader, Harris, Schuerholz, & Denckla, 1994; Sergeant, Geurts, & Oosterlaan, 2002).

Working memory is the term currently used to describe what was formerly classified under short-term memory (Torgesen, 1994). It is a frontal lobe function that has three component parts: a *visual-spatial sketchpad*, a *phonological loop*, and a *central executive* (Anderson, 2008, p. 10). As a short-term perceptual register that retains immediate visual and auditory stimuli, it makes that information available for manipulation and processing by the central executive. The *visual-spatial sketchpad* is the memory store (i.e., buffer) that retains the color and shape of objects or the spatial configuration of one's environment; such as the color of the wall of a room, its dimension and the placement of its contents. Whereas the *phonological loop* retains brief segments of auditory stimuli, such as spoken sentences, musical phrases, or other sounds. The schemas associated with these perceptual stimuli become available for processing by the central executive, which makes use of them to accomplish the immediate task. The *central executive* also has a retrieval function in that it may draw from long-term memory to sequence and organize the information necessary for the person's use. The critical role of working memory in the capacity for executive function becomes evident when we understand that it serves as locus for most cognitive and emotional activities and is a critical component of executive function abilities (Baddeley, 1996; Pennington, Bennetto, McAleer, & Roberts,

1996; Smith & Jonides, 1999; Torgesen, 1994, 1996; Wagner, Bunge, & Badre, 2004; Wong, 1984).

These definitions and explanatory paradigms highlight three central issues that require the attention of psychodynamically informed practitioners. First, by locating the disorder within the individual, they discount the view that, as with all organisms, human beings are the products of their endowments in interaction with the environment. Second, the definitions treat executive function disorders as related to deficits in cognition ignoring the widely held belief among researchers nowadays that cognition and emotions are indissolubly linked together. Third, the definitions leave little room for the psychodynamic elements of motivation as a contributor to the symptoms the patients display.

With regard to the interaction between endowment and the environment, two intertwined facets of this issue require consideration. First, few nowadays question the proposition that our brains require the stimulation of the environment in order to mature. Schore (2000, 2003, 2005a, 2005b) has amply documented in his work on attachment that infants require the timely responses of their caregivers for their orbito-frontal regions to acquire the capacity to regulate their emotional states. Those interactions contribute to the brain's maturation and enhance the capacities for self-regulation, which is an essential component of executive function (Beebe & Lachmann, 1988, 1997; Beebe, Rustin, Sorter, & Knoblauch, 2005a; Beebe, Sorter, Rustin, & Knoblauch, 2005b; Fonagy, 2005; Fonagy & Target, 1998, 2002; Fonagy, Gergely, Jurist, & Target, 2002). As Bernstein and Waber (2007) state: "Executive capacities may be thought of as the interface between the child and the social and physical world within which he or she interacts" (p. 46).

The second facet has been the subject of extensive debate in the psychoanalytic literature, the issue center around two views of psychological development, the so-called "isolated mind" view and the two-person psychology perspective (Leighton, 2004, pp. 169–170; Stolorow, 1992, pp. 7–28). One side of the controversy accuses the other of ignoring our interdependence and conceiving of the psyche as simply the product of its own internal processes. The other side responds by claiming that their opponents distort their perspective since their concern is with the factors that shape a person's internal psychodynamics. The controversy appears to conflate the perspective from which one views people's psyche with the undeniable contention that, as human beings, we are interdependent. Our interdependence is a central tenet of the position that I propose in this chapter, yet there is no denying that we can articulate the processes that are at work within individuals to account for issues such as the sense of agency, the motivations that drive development, and the affect states that accompany their subjective experience. I believe the two views complement one another rather than being antagonistic to each other (Gedo, 2005, pp. 127).

Second, the definitions of executive function also neglect the significance of *emotional factors* in the lives of individuals with the dysfunction. The neurologist, Damasio (1994) was among the first to examine the effects of brain lesions on a person's emotional life. He proposed that reason and feelings are closely enmeshed. Human reason depends on several brain systems, working in concert across many levels of neuronal organization, rather than on a single brain center. Both "high-level" and "low-level" brain centers cooperate in the making of reason. Cognitive functions, such as those involved in executive functions, are not dissociable from feelings. In his work, he details the emotional blunting that often accompanies brain lesions. By proposing the "somatic marker hypothesis," which describes how our body's responses reflect our cognitive states, he concludes that the division between cognition and emotion is an artifact of academic studies. There is now general agreement that we are "embodied" beings for whom mind and brain are indivisible from one another (Barrett & Lindquist, 2008; Klin & Jones, 2007; Semin & Cacioppo, 2008). However, the integration of these innovative views of

the neurobiological underpinnings of emotions with a psychodynamic perspective remains a work in progress.

Some neuropsychologists differentiate "cold" cognition, which does not involve affect states from "hot" cognition that does include an affective dimension. With regard to executive function, De Luca and Leventer (2008) state:

> The term "cold" executive abilities generally refers to strategic planning, organization, goal setting, behavior monitoring, problem solving, inhibition, working memory, and cognitive flexibility. The term "hot" executive ability has been applied to empathy, theory of mind, emotional regulation, and affective decision-making.
>
> (De Luca & Leventer, 2008, p. 23)

Finally, the definitions do not give sufficient importance to the *role of motivation* in the lives of these individuals. At the emotional level, individuals with EFD had often been exposed to considerable criticism. Whereas others often perceived them as bright and competent, some found it difficult to understand why they had so much trouble with the simple tasks that others perform with ease. They were berated for being lazy, not trying hard enough, or simply for being defiant of others' directions and expectations. These criticisms led them to feel considerable resentment of others. They felt misunderstood and devalued. These experiences led to the deflection of course of their development from its path. Some internalized the criticism and lost motivation to try to do better. The loss of motivation compounded the problem, as it reinforced others' negative perception of them. Some veered away from the social expectations and values common to their peers. They devalued their community's lifestyle, their career paths, and their moral standards; they embraced an anti-establishment lifestyle, which they found to be more in conformity with their own limitations and the image of themselves as not fitting in. Once again, the integration of this psychodynamic perspective with the neuropsychological data presents further challenges to practitioners (Palombo, 2001).

The *Psychodynamic diagnostic manual* (PDM Task Force, 2006), under Disorders of Mental Functions in children and adolescents, SCA317.5 Executive Function Disorders, provides a more comprehensive definition than those cited above. It can serve as the basis for a psychodynamic perspective. It states:

> Executive function disorders involve a complex set of deficits that include difficulties in the initiation, conception, and implementation of a plan. These difficulties include the inability to manage time, organize resources, self-monitor, and self-regulate so as to translate a plan into productive activity that insures its completion. Generally, children with these disorders know what they have to do but cannot take the initiative or implement their knowledge. Academically, the child underachieves because homework assignments are lost or not turned in. The child has poor study skills, procrastinates, is inefficient in doing class assignments, and is scattered and disorganized. No distinctive emotional problems are associated with this disorder, although a pattern emerges of not being able to keep life occurrences straight and in order. Children with problematic executive function generally achieve developmental milestones on schedule. Problems do not begin to emerge until demands are made of them to undertake tasks whose complexity is greater than their capabilities. Because these demands increase with maturation, they encounter greater difficulties over time. As they get closer to young adulthood, they are generally ineffectual in adapting to social and life situations, perhaps reflecting an inadequacy of psychic structure. No single pattern of affect, thought, somatic state, or relationship characterizes the executive function disorders.
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> (PDM Task Force, 2006, p. 272)

This definition implies that, whereas all patients with EFD have a range of neuropsychological deficits, the responses to those deficits by those in their environment as well as the individual's emotional responses to those responses and the meanings that they construe from those responses vary enormously. Consequently, no single set of psychodynamics or disorders of the self are associated with the neuropsychological deficits.

These considerations lead to the conclusion that the integration of a neuropsychological perspective with a psychodynamic perspective requires a new clinical model. I call this model the *neuropsychodynamic model*. This model proposes going beyond the use of the constructs of one theory and redefining them in terms applicable to the other. It entails the creation of a new terminology that can encompass neuropsychological, neurological, and psychological phenomena. In what follows, I outline some of the main concepts that inform this model as it applies to issues related to individuals with EFD.

Demographics

No data are available on prevalence rates of these disorders in children or adults. Neither are there any data as to the sex ratio among males and females (Palombo, 2001).

Population

The brain's developmental trajectory sets the course for the maturation of executive function abilities. As previously stated, cognitive psychologists distinguish between two interrelated components those of "cold" cognition that involve the tasks of plan formulation, initiation of activities related to the achievement of a goal, and self-monitory, the process made toward that goal. "Hot" cognition, on the other hand, includes the capacity for empathy, and emotional regulation. De Luca and Leventer (2008) describe developmental stages of these two components. The brief summary that follows is largely based on their chapter.

The maturation of the frontal regions of the brain that are associated with executive function capacities is progressive and continuous into early adulthood – around the third decade of life. The normal aging process brings with it a decline in those capacities. Environmental factors may influence positively or negatively this trajectory, although its bell shaped configuration of increasing and decreasing function remains stable.

Evidence suggests that by the age of two, most neurotypically developing children develop a greater capacity to control their responses and a more sophisticated understanding of others' mental states. Adolescence is a period of major brain reorganization with synaptic and neuronal pruning that impacts executive function abilities directly. In spite of the turmoil associated with this period, adolescents make gains in the areas of working memory, and the ability to plan and problem solve.

By the mid to late twenties, executive function abilities reach their peak when they plateau, before beginning a slow decline that becomes evident by the mid sixties, when the speed at which information is processed decreases, attentional capacities decline, working memory is less reliable than previously, and the capacity for self-monitoring is reduced. These changes may affect selective areas of executive function and may vary from individual to individual, with some retaining greater capacities than others.

There are no comparable data for individuals with deficits in the developmental variant of executive function discussed above. Clinical evidence, based on over 45 years of experience with children, adolescents, and adults, presents a mixed picture. From informal follow-up obtained from the parents of children and adolescents I have seen in psychotherapy, I have reports of remarkable changes in patients with significant executive function disorders identified

in childhood and adolescents. To my surprise, the reports indicate that in some of my former patients major positive shifts in functioning occurred towards the end of their junior years in high school or later during their sophomore years in college. A few have gone on to obtain degrees in law or higher education, with comparable achievements in their careers. However, in general, the detrimental effects of EFD that were evident earlier became magnified by the increased demands that adulthood imposes, leading some of my former patients to become totally reliant on their parents for their support and making marginal and spasmodic social adjustments themselves.

Mental health care disparities

Given the absence of data, it is not possible to give an accurate account of the mental health care disparities for the provision of services to individuals with executive function disorders. The following comments are impressionistic based on my clinical experience.

School social workers have traditionally been in the forefront of professionals that provide services for students in schools. There is general agreement that these services vary greatly from district to district across the nation depending on the affluence of the population in those districts. Furthermore, given that EFD are not on the list of learning disabilities or other mental health impairments for which services are mandated, this disorder is seldom identified and no provisions exist for its remediation in those children affected by it. However, since some of these children also suffer from ADHD, which is considered a mental health impairment for which schools must provide accommodations, these children may receive indirectly some services for the condition. This situation is complicated by the fact that the symptoms that children with EFD manifest are often falsely interpreted as being motivated by lack of discipline, poor parenting, or laziness. The children are then found to have behavior problems and sometimes labeled "Oppositional/Defiant" because they fail to comply with expectations. Such labels fail to address the children's problems and compound the difficulties that the service providers face.

Some isolated affluent communities nationally have schools with resources that permit their social workers to attend seminars that inform them of trends and have brought to their awareness the nature of this condition. However, strategies for its remediation are still evolving and their application produce mixed results. In some of those communities, some private practitioners and tutors have developed special techniques to help these students. However, the cost must be borne by the families as no insurance coverage exists for these types of interventions. One center, with which I have been associated for some years, is unique in the United States. It is the Rush Neurobehavioral Center, which is part of a large medical center in the metropolitan Chicago area. It has a department that provides diagnostic and tutorial services to meet the needs of children under 18 years of age, but it charges fees and does not accept insurance reimbursement.

The situation for adults with the disorder is even direr, as few are diagnosed. When assessment is available by a neuropsychologist, the cost generally exceeds $3,000. Furthermore, the availability of services is even more limited than for children and the cost must be carried by the affected individual.

Social work programs and social work roles

As the comments in the prior section indicate, to my knowledge, specific social work programs are nonexistent in spite of the fact that school social workers as well as clinical social worker have a large role to play in the provision of services to this population. What is required is those school social workers begin to advocate for the inclusion of this disorder under the category of

"Other Mental Health Impairments" by the U.S. Department of Education. This would trigger processes that would permit referral for testing of children with the condition and mandate schools to provide both accommodations and remediation to affected students.

As for the role of social work in services for adults, a campaign to publicize the condition and its deleterious effects on the function of those affected should be followed by seminars and programs that educate clinicians to recognize the disorder and to make adequate referral for services.

Professional methods and interventions

The *neuropsychodynamic model* flows out of an evolutionary perspective. It proposes that we are born pre-adapted to survive in our environments. All development results from the interaction between our environment and ourselves. Our brains require exposure to external stimuli in order to grow and function. Both endowment and the environment impose constraints on the extent to which we can develop and mature. Innate differences may limit the extent to which we are able to achieve in our environment and, in turn, the unavailability of resources in our environment may impose limitations on how we mature. Furthermore, our social interactions as well as our emotional communication with others shape our relationships to others. The attachment system brings with it a configuration of secure or insecure bonds to others that we carry with us for a lifetime. A set of patterns of interactions is laid down during development that act as organizers of experience and become predictors of how we expect others to respond to us. These patterns are the product of our unique givens, our experiences within the social system in which we mature, and the unique set of meanings that results from our interpretation of events in our lives.

We are also imperfect beings who require others to sustain us. We search for involvements that will give meaning to our experiences. Our greatest anxiety is the fear of isolation and disconnection from those who are significant to us. The failure to find meaning in our lives leads to despondency and despair. In brief, we live in a world in which we are interdependent and interconnected with one another. What we do or how we act can have consequences that extend far beyond the reach of our imaginations. This view is in contrast to prior views of development that proposed the idea of mature development as consisting of the achievement of separation and individuation. This is not to deny that each of us has his/her own individuality and distinctive personality. We each possess a unique history, a sense of agency, and a capacity to make choices. The concept of being separate from others as an end-point of mature development that Mahler's (1975) developmental framework proposes reflects the frontier mentality and values of prior times when rugged individualism was tied to the idea of self-sufficiency and freed them from reliance on others. Whether the ideal is now outdated or whether it provided an inaccurate vision of human nature might be a matter of debate. What seems undeniable at this time is that our survival as a species is contingent upon assuring the survival of all of our conspecifics.

In what follows, I highlight these two themes of *imperfection* and *interdependence*. I conceptualized our imperfections as self-deficits that interfere with our capacity for self-cohesion. I expand the traditional view of self-deficits as resulting from factors related to nurture to include those that are related to nature, i.e., our endowment. As for our interdependence, it manifests in the psychological functions that we provide each other by filling in the functions that are absent because of our self-deficits, thus complementing each other's sense of self. I refer to *the sense of self* as *the experience of being a self*. I will refer to these as the *complementary functions* that we provide each other. These constructs will provide a bridge between the neuropsychological and the

psychodynamic framework, which is central to the neuropsychodynamic model (Kaplan-Solms & Solms, 2002).

The proposal to extend the *concept of self-deficits* originated from my work with children with learning disorders and my familiarity with self-psychology. For self-psychology, deficits result from a developmental failure. Such deficits results from the repeated frustrations associated with an environment that persons experienced as unresponsive to their needs. The deficits denote the absence of the development of a psychological structure. Evidence for the absence of psychic structure appears in the anxiety associated with inability to sustain an integrated sense of self and the manifestation of a desire for the requisite selfobject functions. Selfobject functions are psychological functions that others provide, which are eventually internalized. A pattern ensues that structures situations and provides motives for interactions with others (Kohut, 1971, 1977, 1984; Palombo, 2008b).

This formulation raises the question of the existence of a parallel between neuropsychological deficits and selfobject deficits. We may conceptualize the symptoms that emerge in individuals with executive function disorders also as reflective of deficits in their sense of self. These individuals suffered from failure in the recognition of their need for the missing cognitive functions in a fashion similar to the failures for responses to their selfobject functions needs. Phenomenologically, the effects of both types of deficits on a person's development are categorically the same. Whether we deal with narcissistic personality disorders who suffer from selfobject deficits, or patients with insecure attachments who have not internalized the capacity for self-regulation (Schore, 2001a, 2001b, 2005a), or patients with learning disorders whose neuropsychological deficits interfere with their functioning (Palombo, 1985b, 1987, 1991, 1993, 1995), the sequellae are often associated with disorders of the self. These individuals' sense of self may be either threatened or become unstable.

Elsewhere, I proposed that the process through which complementarity is achieved is what I have called mindsharing. *Mindsharing is a form of intersubjectivity in which one person understands the mental state of another and/or provides psychological functions that complement another's psychological functions. At times, this complementarity is essential to the maintenance of an integrated sense of self. The interchanges between dyads may be reciprocal* (Palombo, 2008a). We distinguish between two senses of the term mindsharing. In one sense of the term, we speak of mindsharing as the set of phenomena in which one person is capable of *understanding what is on another person's mind or his or her mental state.* Examples of this sense of the term are the capacity for empathy, in which one person may apprehend what another person thinks. The second sense of mindsharing is as we have seen that complementary functions are those that I have identified and self-deficits, i.e., neuropsychological deficits, deficits in the capacity for self-regulation, and selfobject deficits (Palombo, 2006).

From an evolutionary perspective, Bowlby (1969) states:

> [B]ecause . . . the survival of populations of higher species is dependent on the co-operation of individuals, much of the equipment of one individual is *complementary to that of another* of different age or sex in the same population. Behaviour patterns mediating attachment of young to adults are *complementary to those mediating care of young by adults.*
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> (Bowlby, 1969, p. 141, italics added)

The responses from those in the person's context may either heighten or mitigate the effects of a self-deficit. In line with the premise that our connection to others is essential to our survival, the relationship between our psychological strengths and weaknesses and the extent to which we provide supports to others or obtain support from others becomes a critical factor in our ability to maintain a sense of self-cohesion. We can conceptualize that relationship as one of

complementarity with those to whom we provide and those from whom we borrow function (Palombo, 2001).

It now becomes possible to carry over the concepts of deficits and complementary to the development of an approach to the treatment of patients with executive function disorders; keeping in mind the three types of deficits, the neuropsychological, the self-regulatory, and the emotional as well as the need for complementarity that patients bring to the clinical setting. The patients' transferences will reflect these psychodynamics. We can conceive of treatment process as a process that involves a measure of mindsharing that includes an empathic understanding of patients' experience of their deficits and a response that addresses those deficits.

In some ways, the processes involved in the neuropsychodynamic model of individual psychotherapy are no different from traditional psychodynamic approaches to psychotherapy; in other ways, as we will see; the model offers strategies that depart from traditional modes of responding to patients. With regard to its similarity to traditional approaches, it consists in understanding patients and explaining their psychodynamics. Patients replicate in the transference the thwarted desires to have their deficits complemented by others. They also re-enact the defenses they have habitually used to deal with the pain of not having their desires satisfied. The differences between the two approaches consist in the explanations that patients require and in the interventions that are necessary to deal with the neuropsychological deficits. These deficits do not represent developmental arrests that the process will repair. As we will see, those deficits require different strategies for patients to benefit from the process.

I conceptualize the treatment process of patients with neuropsychological deficits as a series of moments. Moments in therapy are organizing events that capture the essence of the issues with which the patient is struggling at a given time during the process. These moments do not necessarily arrive sequentially but occur episodically. Moments are activated when specific types of exchanges between the therapist and patient are in the foreground of the interaction. By foreground I mean periods during which the ebb and flow of the process is focused on a set of patterns that emerge in the transference. Such moments activate mindsharing responses on the part of the therapist, that is, they evoke empathy or the desire to complement the patient's deficits. I conceptualize three types of moments, *concordant moments, complementary moments*, and *disjunctive moments* (Racker, 1968, 1972). We can now turn to a more detailed description of the treatment process itself.

Concordant moments are moments during which maintaining empathic contact with the patient's experience is in the foreground of the process. This part of the process involves attempts by therapists to understand their patients. During such moments, therapists become attuned to patients' experiences and their meaning. The therapist can then catch a glimpse of the ways the patient experiences and organizes his or her perceptions. However, fully understanding and empathizing with patients with EFD requires that we go beyond what they can tell us (Gedo, 2005, p. 17). Patients with brain-based deficits, in particularly, require that we digest information included in psychological or neuropsychological reports, reports from speech and language pathologists, occupational therapists, school personnel. Information about the family's dynamics, the patient's relationship with siblings and peers, and other relevant data may enhance our view of the factors that contributed to the patient's self-state. The notion that we can rely exclusively on patients' reports in order to understand them seriously underestimates the importance of these other sources of information. True empathic understanding cannot be achieved in many cases in the absence of such information. In fact, a danger exists of seriously misunderstanding both the patients' self-state and the motives for their thoughts and behaviors in the absence of such information. Consequently, if some of this information is not available, it is necessary to supplement the history we obtain from patients with a referral for a full neuropsychological evaluation. The completion of an accurate diagnostic assessment can

occur only after obtaining a full accounting of the patients' neuropsychological strengths and weakness.

A factor that frequently confounds therapists' understanding of these patients' symptoms is the basic psychoanalytic premise that all thoughts and behaviors are motivated. From a psychodynamic perspective, it may be true that all behaviors or symptoms have reasons that may explain their occurrence. Yet, from a neuropsychological perspective, it is difficult to extend this principle to behaviors that manifest underlying brain-based deficits. In the case of patients with EFD, it is difficult for therapists to attribute motives, particularly unconscious motives, to the manifestation of some of these impairments, as it leads to a misunderstanding of the patient's mental states. These are no more "motivated" than are the expressive language difficulties of patients who suffer aphasia because of a stroke in Broca's area. We cannot say that such patients resist talking to us. The thoughts, feelings, and behaviors of patients with such deficits must be understood differently. They display symptoms that directly or indirectly relate to an underlying impairment. Much like the person with aphasia who cannot speak, these patients evoke in therapists a desire to complement their deficits to help them restore the ability to communicate. The fact that they are unaware of precisely what their needs are does not indicate that they have lost their desire for the function, it is simply that they may have no conscious awareness of what it is that they lack.

Two corollaries follow from this formulation. First, the absence of an awareness of the deficit does not mean that patients have not attached meanings to the manifestations of the deficits, that is, patients provide therapists with what they believe to be the *reasons* for their thoughts and behaviors. Those meanings may or may not have something to do with the impairment itself. As Gazzaniga (1988) states:

> Our interpretative mind is always attributing a cause to felt states of mind, and we now know that these interpretations are frequently irrelevant to the true underlying causes of a felt state. Our mind's explanations become more relevant only as we come to believe our own theories about the cause of a state like anxiety.
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> (Gazzaniga, 1988, p. 98)

Some patients may believe that they are inept, or may attribute their difficulties to the injustices perpetrated by others, or may attribute difficulties to a number of seemingly rational, inaccurate explanations of objective reality. These meanings become a rich source of exploration during the therapeutic process. However, understanding the meanings helps only to clarify the nature of the deficit, it does not correct it. Understanding and interpretations cannot reverse the brain dysfunction or repair those kinds of self-deficits. As we will see, other intervention will be necessary to circumvent the sequelae of those deficits.

The second corollary is associated with the defenses that patients institute to deal with the sequelae of their deficits. Patients with EFD may have experienced directly or indirectly its effects. Their failures loom large on their horizon. They had felt criticized for their deficits and had frequently been injured by what they felt was unjustified disapproval. They instituted a variety of defenses in the service of avoiding these injuries and protecting themselves for the anxieties that overshadow their lives. They may have suppressed or disavowed the effects of the deficits as a defense against the pain caused by others' responses to them. These defensive styles may become habitual patterns of interaction. It is often necessary to undo the effects of these defenses before patients can move on to develop compensatory functions.

In summary, understanding these patients involves more than simply empathizing with their self-state. Therapists must go beyond those patients' experiences to the underlying factors to appreciate fully the motives behind the overt thoughts and behaviors. Patients are often

unaware of their neuropsychological deficits not necessarily because they are dynamically repressed, but rather because they are descriptively unconscious. In their struggles to understand their responses, they attach meanings that are unrelated to the causes of their feelings, thoughts, and behaviors. Furthermore, they institute defenses to deal with the frequent injuries they sustain.

Complementary moments are episodes that occur when the transference occupies the foreground of the interaction. Patients re-enact the needs for complementarity associated with their deficits within the transference. In other words, complementary moments represent episodes during which patients' deficits, whether neuropsychological, self-regulatory, or of selfobject functions become activated and the patient expects the therapist to respond by providing those functions. These are moments when positive or negative transference issues gain ascendancy. During these moments, sorting the patterns that drive the transference from those that simply reflect the EFD may be difficult. Applying our understanding of brain function in the clinical setting requires a reconsideration of our views regarding what constitutes transference and non-transference. Therapists who treat patients with EFD problems find it difficult to distinguish between a patient's responses based on transference and those based on the patients' search for complementary responses to their neuropsychological deficits. While sharp differentiations are difficult to make, some distinctions are possible which would help therapists in making interventions.

These moments offer therapists the opportunity to provide interpretations or explanations to patients of their psychodynamics. Interpretations in this model provide explanations of the psychodynamics associated with the deficits and of the nature of the deficits themselves. Through the process, patients reformulate the meanings they construed from the sequelae of their deficits and rework the associated idiosyncratic views of themselves. They had interpreted their responses and others' responses to them from a particular vantage point that was often critical and negative, filtered through the lens of their deficits. These interpretations and explanations are no different from the traditional forms of interpretation, which involve dealing with the psychodynamics associated with the deficit, that is, to the patterns that have crystallized because of the deficit. They may relate to the erosion in self-esteem that may have occurred, the fantasies surrounding the meaning associated with the effects of the deficits, the effects of the patients' responses to others and others' responses to patients' that led to relational difficulties, and the impact on the sense of self and self-cohesion. These take the form of mutative interpretations.

Clients require a different type of explanation for them to understand the nature of their self-regulatory difficulties, or neuropsychological dysfunctions. These explanations involve the non-conscious functions of the patients' minds. Patients need to understand the ways in which their brains process their experiences. However, these explanations alone do not lead to the internalization of the function or to development of the missing capacity that is due to the neuropsychological deficit. Since such explanations alone cannot heal the neuropsychological deficits, other interventions are indicated.

At this juncture, interventions depart from traditional modes. Therapists may find it necessary to complement the patient's social and cognitive deficits by providing the client with missing functions related to the deficits. Whereas traditional technique frowns upon supplying such "provisions" because it gratifies the client's desires and is thought not to produce growth, in cases of EFD, depriving patients of such interventions would represent failures in empathy that may give rise to negative transferences. Much as some patients need medication to help restore their neurochemical imbalances, these patients require activities that help remediate the deficit.

In order to give up old habits or patterns of behavior and acquire new ones, patients must undertake a particular form of learning to modify their responses to the circumstances they

confront; the new learning involves facilitating the transfer of knowledge from episodic memory to procedural memory (Gedo, 2005, pp. 152–155). In essence, what is involved is having clients use conscious information, present in episodic memory, to develop new procedures to guide their conduct and using that information to develop new habitual patterns, which are then stored in procedural memory. The techniques for the attainment of this goal may involve didactic methods that include direct instruction and rehearsal of ways of approaching and solving individual life stressors and problems.

Such clients require instruction so that they may compensate for the deficit. They may require actual modeling of the function or even provision of that function. These interventions are not necessarily "curative" in that the insight does not lead to a repair of the deficit. The explanations open the possibility that they will acquire more effective ways of having others complement the missing functions or that they will develop compensatory structures that bypass the effects of the deficits. At times, a client may develop compensatory structures either spontaneously or through the process, nevertheless some deficits may remain as lifelong impairments; such persons require mindsharing functions for the rest of their lives.

When offered, both the emotional supports and the complementary functions are best provided in the *zone of proximal development* (Vygotsky, 1986, p. 187). This term, used in developmental psychology, refers to a type of scaffolding that others provide to permit the patient to exercise available functions. This term may translate into Tolpin's concept of the "forward edge," although it comes from a different theoretical framework (Tolpin, 2002, 2007). As stated earlier, the dilemma that confronts caregivers of patients with these deficits is how much to do for them and how much to let them struggle to do for themselves, when to praise and when to withhold praise. If too much is done for them, they will be prevented from exerting any effort to do for themselves. They may also regress and develop an inordinate reliance on others. If too little is done, they may become frustrated, fail at a task, give up trying, and lose motivation. Staying within the zone of proximal development means meeting them half way and challenging them even as they are supported to avoid failure. By using this approach, social workers can avoid having clients become overly dependent or failing to develop potential competencies.

Specific types of interventions can be designed to address the requirements for complementary function in patients with EFD. Among others, these interventions may involve, first, providing suggestions that help clients enhance their working memory, second, giving assistance in transferring knowledge from episodic memory to procedural memory thus encouraging the development of new patterns and habits, and third, encouraging the use of assistive devices that compensate deficits.

Given our understanding of *working memory*, we can help clients reinforce the auditory channel or the visual channel. The auditory channel may be reinforced by techniques such as self-talk. We can suggest to clients that they verbalize to themselves what they are doing which helps them focus their attention, allowing them to keep track of the steps in the task. Hearing is one of our strongest senses. Hearing our own voice repeat things assists our memory. By talking to ourselves, we hear what we are about to do. Patients may find it helpful to hear themselves say: "I'll put my key here, so I won't forget it!" By talking to the object they wish to remember, they attach a verbal tag that allows them to remember. Similarly, the visual channel may be reinforced through visual aids. List making or the use of a white board on which to write items that the client must remember may be useful. Keeping a large calendar on a desk or a wall, which cannot be overlooked or ignored, may act to visually refresh the person's memory and recall tasks for which the patient must plan. Such clients' personal space may look like a disaster area to most people with a sense of organization, but when asked, those clients will claim that they know exactly where everything is. This is indeed often the case. They rely on their visual

strength to compensate for their disorganization. What a social worker might recommend is that items be placed on an open shelf system rather than in drawers, where out-of-sight is out-of-mind.

Episodic memory is conscious, often verbal memory of events to which a person has been exposed. Autobiographical memory is an example of episodic memory. Procedural memory is non-conscious memory that encodes activities in which we habitually engage or repetitive tasks that require little conscious effort. Procedural memory is not memory of events that have been dynamically repressed. Examples of the manifestation of procedural memory are such activities as driving a car, swimming, dancing or other automatized actions. Less concrete examples are such activities as how we approach complex tasks, implement plans, or monitor our progress to assure the completion of a project.

For individuals with EFD, *substituting habits, by encoding them in procedural memory* in the case of actions that require conscious decision making, clients can bypass a central impediment that they face in their effort to accomplish a task. Given their difficulties in initiation and decision making, and their procrastination as avoidance to undertaking tasks, the development of a set of non-conscious habits may allow them to compensate for their deficits. A precondition to the formation of such habits is the motivation to bring about change in their lives and to persevere and sustain the effort that will be required for them to succeed. We may say, facetiously, that a cure for EFD is the development of a mild form of obsessive compulsive disorder. Therapy directed to the motivational aspects of these patients' difficulties may enhance their abilities to succeed in their efforts to bring about change.

At a more abstract level, dealing with these clients' distractibility and proclivity for the pursuit of tangential thoughts is somewhat more problematic. Nevertheless, some of strategies can be effective, if combined with those of the enhancement of working memory.

What were once simple devices to make phone calls, cell phone have now become accessories that are capable of complementing many functions that we require to live in our complex world. The Global Position System permits us to obtain directions, especially for those who have difficulties with directionality. Its alarm can act as reminder that tasks require our attention. Its thousands of "apps" permit people to enhance their everyday lives. What many fail to realize, however, is that these aids are of greater assistance to those who do not have the deficit than those who do. It requires executive function capacities for the efficient use of these devices.

Among the more complex issues with which social workers must deal with these clients is the issue of procrastination. Most clients with EFD insist that they know exactly what they have to do to accomplish the goals set by a task, however, where they fail is in the initiation of the steps necessary to begin working on the task. Procrastination is a pejorative term that we use for those who appear to willfully avoid undertaking tasks for which they are responsible. They defer taking action, they find excuses, and they may claim to have forgotten they were supposed to, and on and on. What is overlooked is that the *procrastination is part of the syndrome* in that it involves the inability to initiate activities. Decision-making is a major problem for individuals with EFD, consequently, what appears as willful avoidance is very much a part of the deficit. Matters become more convoluted in that often a set of dynamics have evolved that are entwined with the neuropsychological deficit. As a defense against the embarrassment some clients feel regarding their indecisiveness, they have instituted modes of responding that blur the reasons for their inaction. Those dynamics may become part of another set of dynamics, such as the fear of failure or of competition, that make it almost impossible for social workers to determine the motives behind a set of responses. Furthermore, having faced repeated failures and criticism many patients are hesitant to undertake any task that will test their capacities. They appear to be unmotivated to try. Unless the therapist can confront these dynamics and help the client work those through, real changes may not be forthcoming.

An important caveat to undertaking these departures from traditional modes of intervention must now be stated. The initial reason for instituting these interventions was in order to inform clients of the nature of their deficits and to deal with the associated psychodynamics. In the absence of adequate motivation to change, the helping efforts would face defeat. Clients also require a demonstration of the effectiveness of alternative modes of functioning before being able to take the initiative to bring about change on their own. Once such issues have been dealt with, it is possible to make a referral to an appropriate educational specialist who can provide more extensive strategies to compensate for the EFD. Such specialists are found increasingly in some regions of the country and constitute and excellent resource for such patients.

Disjunctive moments: the rupture and repair sequence The imperfections in our capacity to stay connected to others lead inevitably to ruptures in our relationships with clients and their connection to us as social workers. A *disjunction* may occur when the client ceases to feel understood by the social worker. When such disjunctions occur, *the treatment is in crisis*; it is essential that the therapist heal the rupture and reestablish the concordance between himself and the patient. These disjunctions may emanate from negative transference reactions, transferences of the social worker to the client, and non-transferential areas of the social worker's functioning.

If the social worker is unable to fill in the functions required by the client, for whatever reason, the client will experience that incapacity as an intentional assault. In a sense, the therapist's motives are irrelevant; only the effect on the patient is relevant. Such disjunctions become crises in the treatment that require repair to make further work possible. For example, there are moments when the frustration and rage that has accumulated in the client from years of feeling isolated and misunderstood may surface in the relationship with the social worker. The social worker in turn responds with impatience, anger, puzzlement, or distancing. Such moments represent opportunities for the client and social worker to work through an important interaction. The client's rage at others must be distinguished from the frustration and rage the client may feel toward the therapist. While both are understandable, the social worker must be able to look at and acknowledge any contribution he or she has made to provoke the patient's response. That piece of reality must first be addressed before the transference dimensions can be dealt with.

We see then that as the social worker responds differently from the way others have, a new set of experiences is generated for the patient. This new set of experiences lays the groundwork for what is to be curative in the process. In obtaining help, clients experience patterns that are different from those they resorted to in the past, and gain an understanding of the old patterns through the social worker's interpretations. Clients are then in a position to compensate for their deficits. The new patterns include the meanings of past experiences and the new meanings gained through the relationship with the social worker. The understanding clients acquire through this set of shared experiences with the social worker serves to break through their former isolation. Patterns that were central in the configuration of the patient personality are reshaped. New patterns come into play and the patient's expectations are modified. These new patterns give the patient greater hope for success than was possible in the past.

The evidence for the greater integration of the client's experiences is found in the greater sense of cohesiveness clients experience. Themes that formerly reflected the construal of personal meanings now encompass a set of shared meanings that grew out of the client's maturation and experiences in therapy. Specific events or interventions are difficult to specify that produce this greater sense of coherence; it usually results from the cumulative effects of the implementation of the broad service plan. The client's rehabilitation and restoration to better function can be credited to the combination of greater understanding, improved social functioning, enhanced self-esteem, and the social worker's educative, corrective, and interpretive efforts.

It is useful to review briefly some of the kinds of *countertransference* problems clients with EFD present. Therapists at times experience extreme frustration at what they perceive to be a patient's resistance to treatment. They may then resort to power struggles or to punitive measures in an attempt to involve the client. What social workers must keep in mind is that, from the perspective of the client, the environment has felt so hostile that the client cannot allow the social worker to experience the world as the client experiences it (Palombo, 1985a).

Another possible source of countertransference can be the social worker's theoretical orientation. Some social workers do not believe neuropsychological deficits are neurologically based conditions that have a heritable or constitutional basis. In the helping of these clients, such social workers often inadvertently re-create disjunctions similar to the ones the client has experienced already, the consequence being that stalemate occurs. In such instances, it is advisable that social worker seek consultation that would help broaden their theoretical outlook or refer the client to a therapist who can deal with such issues. The stalemate must be brought to a resolution or the therapy will be interrupted.

Illustration and discussion

Mark's mother, Mrs. P, requested a consultation regarding her 18-year-old son, who is a senior in high school. A psychologist who evaluated Mark found that he exhibits aspects of attention deficit disorder without hyperactivity. He had difficulties in particular in the area of activating himself, organizing his work, and sustaining his efforts to complete tasks. She made a diagnosis of a learning disability. Mrs. P's greatest concern was that Mark has not been doing well academically; he was failing sociology and analysis. Part of the problem was that he procrastinated. After seeing a tutor for a while, he decided that he wanted to be on his own and stopped seeing her. In addition, he had stopped seeing a psychologist because he did not find that relationship helpful.

On a day-to-day basis, he was always late for school; at times he would wake up feeling that he did not want to go to school. He was often critical of himself saying, "I can't do anything right." Socially, he had a group of friends with whom he played soccer. Mark reported that he frequently got moody and sad. He considered himself a "huge" procrastinator. Although, he wanted to do well in school, he ended up failing some his tests. He watched too much TV, played computer games, and did not make good choices. His tutor told him that he was too lazy to put any effort into his work, and that he had trouble organizing his thoughts. Now, he was working at a computer store, repairing computers. His major interest was in computer security and he expressed the wish that someday he could work for the security division of the FBI.

Mrs. P reported that in elementary school Mark did well academically because he was so bright. He was an independent learner, who loved to spend time in the library. She never saw him as distractible or as having a short attention span. He read voraciously, was creative, and loved school. When Mark was five years old, his father was diagnosed with leukemia. There was much upheaval as the family relocated temporarily to Seattle, where he had a bone marrow transplant. They were there for approximately six months. Mr. P then had a long remission of six years, at which point he relapsed. Mark, who was at summer camp at the time, was called back home. In the Fall, his father's condition deteriorated; by January, Mr. P went back to Seattle for a second bone marrow transplant. This was not successful and he remained in intensive care for three months. He died in mid-July of that year. Mark was 11 years old.

It was Mrs. P's impression that after his father's death, Mark was never quite the same. She made several attempts at instituting psychotherapy, but for the most part these were unsuccessful. He saw a social worker for a few times, then a school counselor, then a psychiatrist. None of the therapists were successful in engaging him. Although he appeared quite depressed, he had no wish

to discuss his feelings about his father's death. Another psychiatrist prescribed medications, none of which were effective. He was tried on Prozac, Wellbutrin, Remeron, Adderall, Ritalin SR, and Celexa. He is now on Paxil and Ritalin SR.

The clinical psychologist who evaluated Mark saw him as an extremely bright young man. His Verbal IQ on the WAIS III was 140, in the Very Superior range, his Performance IQ was 119, in the High Average range, and his Full Scale IQ of 129 was at the very top of the Superior range. Mark's particular strengths were in verbal comprehension, verbal reasoning, acquired knowledge, and logical thinking (both language-based and non-verbal). He showed a relative weakness in perceptual organization, specifically having difficulty in knowing how to approach, analyze, conceptualize, and remember complex visual stimuli, registering important details as well as taking in the whole gestalt. He also had difficulties sorting through facts and ideas he had at his disposal, being unable to pick out what is most salient to the issue at hand. He got bogged down in less relevant details and often did not differentiate these from the main point. These cognitive problems were exacerbated by Mark's emotional response to them. Mark had a strong wish to do well, but his anxiety built up quickly, especially when he was under time pressure and he felt he was not meeting his own very high standards. As his anxiety built up, he was less and less able to think flexibly and productively. He then became frustrated and directed his anger toward the test, the assignment, or the person who imposed it on him. In his wish for a successful outcome, he disregarded external cues that indicated that his approach to the problem was not correct. A major factor was the emotional interferences with his productivity and not a lack of motivation.

After my initial diagnostic session, I referred Mark for a second opinion to a psychiatrist familiar with medications for adolescents with learning disabilities. Her impressions were that Mark was a bright young man whose poor executive functions created much pain and discomfort. He had periods when he succeeded after trying hard but could not sustain the effort over long periods. Mark's difficulty with perceptual organization created internal tension and anxiety when he met external expectations and was disappointed at not meeting his own standards. That left him with anxiety and tension that increased his rigid thinking and interfered with his problem-solving abilities. The intense anxiety and internal pressures that he experienced, as well as the fluctuations in his functioning, made it hard for him to deal with his emotions when faced with situation in which he had to make reasoned, careful judgments about everyday life situations, relationships with others, and solve problems intellectually. She felt that medication to treat his anxiety was appropriate but it would not help the anxiety created by his poor executive skills. Stimulants were generally not helpful in learning to prioritize and follow through, so it was not surprising that stimulants have not worked in the past. Stimulant treatment would only enhance sustained attention once the task was selected. She gave as her diagnosis as Axis I: Dysthymia, Generalized Anxiety Disorder, and ADHD, Inattentive Subtype. She recommended a trial of Paxil.

When I saw Mark, he stated that he felt depressed, burdened by everything, and bored. He believed that his depression may have started with his father's death, but then other problems developed on top, so that now he felt completely overwhelmed and wished to withdraw or distract himself. He was waiting to hear from the colleges to which he had applied. In the meantime, he had started the Paxil prescribed by the psychiatrist. The medication did not seem to improve his mood. We agreed that we would meet twice a week until he left for college, which gave us three months in which to work.

Mark felt some urgency to deal with his organizational problems since he was at risk of not succeeding in college if his current patterns of functioning persisted when he left home. He did not see the relevance of dealing with his father's death, as he did not feel it contributed to his current problems.

Most of these initial sessions were spent discussing practical issues, such as the need for him to develop some regularity in his schedule to avoid the disruptions caused by his lack of organization.

He expressed confidence that once he was out of the house and away from his mother, he would be able to manage his life. He knew what he needed to do and once at school he would implement the plans we had discussed. It seemed unproductive to point out the fact that knowing what he should do was not the same as being able to implement that knowledge.

Before he left for school, we agreed that he and I would keep in touch by phone once a week to make sure that he maintains his functioning. During these initial phone calls, he reported that he was having a great time socially. He had made many friends and was hoping to join a fraternity. However, after a while, he stopped contacting me until he came home during the Christmas break, at which point he made two appointments. We spent these catching me up on his adaptation in college.

I did not hear again from Mark until March of the following year, his sophomore year. He had been asked to take a one-year leave of absence from school because he was failing. He wanted to come and see me, but he also wanted to live at the college to be close to his friends. This meant that he had to drive for six hours each way for his twice a week appointment. I did not challenge these unrealistic plans. He came to the sessions regularly, although he was most often ten to fifteen minutes late. Shortly after we started, he realized that his plans were unrealistic, and with my encouragement, he decided to move back home.

For the next nine months, I saw Mark twice a week for approximately 60 sessions. Three major themes organized the material of these sessions: the use of medication to help alleviate his depression, the problems with organization, and the loss of his father.

Mark would generally begin each session with a discussion of the *medication* he was taking. He complained bitterly about not feeling well. He kept hoping that the psychiatrists would find the right medication to alleviate his depression. He described feeling sad and depressed, feeling disconnected from the world. At times, when he became deeply depressed, he had paranoid thoughts that his food was being poisoned by his mother, which he acknowledged could not be true. His psychiatrist found him difficult to medicate. Mark complained about his medications' many side effects and the weird feelings that they produced in him. When he had to have an EKG to check his heart before he could begin a new medication, he expressed concern that he might die. At one point the psychiatrist, hearing of the severity of the symptoms, became convinced that Mark was manifesting pre-schizophrenic symptoms – a diagnosis with which I disagreed. He worried about an eventual breakdown. He put Mark on Geodon. Mark stopped taking that medication within two days, claiming that it made him feel weird. None of the medications were effective. In fact, he felt much better off medications than on them. Eventually, he settled on Effexor since it helped with his anxiety but not with the depressive symptoms. I remained convinced that those symptoms reflected his defenses against the intense feeling associated with the unresolved grief over his father's death, and emphasized the need to address those feelings.

A central focus of our discussion was on his desire to deal with the problem of his *poor time management and his disorganization*, which he now recognized were responsible for his failure in school. As I mentioned earlier, Mark consistently came late to his sessions. At first, he joked about it, stating that his appointments really began ten minutes after the hour. He then became more self-conscious about his lateness, and gave excuses, such as a train at the crossing stopped him, or that his mother had insisted that he take care of some chores, or that he had to make an urgent phone call. In an effort to break the pattern, I even offered to change his appointments from 10 AM to 4 PM because it was difficult for him to get up in the mornings. He never succeeded in coming on time, in spite of my calling him to wake him up so that he could come on time. Eventually, I pointed out to him that he was playing games with himself and defeating his own determination to develop different habits. This led him to start coming precisely on time, something in which he took great pride and of which he kept asking for my affirmation of his improvement.

Another issue centered on his desire to complete a difficult advanced computer course that he had not completed the previous summer. To obtain the degree, Mark had to pass five exams

covering sections of the course. His efforts were half-hearted. He had taken and passed one of the five exams. My efforts to help him structure his studies were unsuccessful. Instead of studying, he found himself playing games online until three or four in the morning, and sleeping until one or two in the afternoon.

Mark became increasingly concerned that he would be a failure in life. He talked about his pattern of beginning tasks with much enthusiasm and preparation. He always felt confident that he would do well. However, after about three to four weeks, his interest would wane; he would get distracted and lose his sense of direction. He would get behind in the work and not be able to catch up to get a passing grade. He felt considerable shame that his image was already tarnished. How could he face his friends and relatives who always thought of him of becoming as successful as his father had been? He expressed his determination to overcome the difficulties in his path, although, he did not know what he had to do to avoid further failure.

In a final effort to break the pattern of disorganization, I enlisted his cooperation in choosing a simple task in which we could be assured that he would succeed. He decided that he wanted to clean up his room, which was in total disarray. I coached him into breaking down the task and estimating how long each activity would take. First, he suggested that he would get all his clothing off the floor, and then he would clean some drawers that he had not cleaned since high school, and then he would clean his desk, and finally, his closet. He estimated that each task would take three to four hours, and decided he would work for two hours two days a week until he got everything done. According to this plan, it would have taken six weeks for him to finish. I agreed to the plan. The first three weeks, he came and proudly informed me of the progress he was making. His mother was impressed. Then, I stopped hearing about it. When I finally inquired what was happening, he said he had run into a problem. Our plan had not included maintenance and upkeep of the areas already covered. After three weeks, his floor was as messy as it had been. He finally gave up.

These issues were always accompanied with discussion of dynamic factors that also intruded into his desire to be successful. In this connection, we dealt at length with the meaning of the loss of his father.

Mark experienced *delayed grief and mourning*. His father had been a highly successful producer of music videos. He had started his own business after he was first diagnosed with leukemia, and managed to reach national prominence in his area. Mark's fantasy was that, had his father lived, his life would have taken an entirely different course. Not only would he not have had his current problems, but also he would have had a mentor who would have taught him the ins and outs of the computer business so that he could have followed in his father's footsteps. In addition, the family would not be as financially constrained as it is now. He was convinced that his father would have bought him his dream car – a $75,000 Porsche. With this car and his father's support, Mark felt that he would be on top of the world. He would not be depressed, he would be encouraged to complete his work, and his future would be assured.

Mark talked about how he felt a year ago when he was dating a girl who was the daughter of a CEO of a multinational corporation. The girl's father liked him very much, as did her mother. They welcomed him warmly into their house and took him on vacations with them. He felt on top of the world. The problem was that he felt that the girl was shallow and superficial, which eventually contributed to their breakup. He now wished he could recapture that old feeling. He was tempted to call her to see if they could get back together again. However, he knew it would be wrong; he had a new girlfriend and could not do that to her. The new girlfriend's parents were divorced and he could not get the same feeling from them that he got from his old girlfriend's parents.

I commented on the parallel between how he must have felt when his father was alive, and how he felt after his father died. It is as though something within him died with the death of his father. He now wished he could recapture how he felt before. He asked how he could do that. I respond by saying that he needed to recover his ability to feel and to recapture some of the sadness he felt

after the loss. He had suppressed many of those feelings and they were now disconnected from the loss. He responded that even if he could go back it would be too painful and he wanted to avoid doing that.

Mark could recover few memories of his experiences with his father. He could not remember specifics. His memories were global and hazy. His father was around in the evenings; he was not working as hard after he became successful. He used to help him with his written work. I asked if he had any feelings about the relationship but he remembered none. He did remember that when his father was away during the first bout of his illness, his mother said that his father tried to fight hard so he could get back to be with the family. At this point, Mark became tearful for the first time. He remembered sitting in the living room on the couch with his father; he had asked his father if he was afraid that he might die. His father said that he was afraid but he felt he could conquer his illness. At this point, Mark stopped and said that in the past, therapists tried to get him to talk about these things, but he had always refused. He wondered why that was so. I said that as a kid he was probably in great pain; the feelings were intolerable for him. He probably suppressed them and now it is hard for him to get in touch with them. That was probably why he gets those feelings of being disconnected.

Such sessions would be followed by sessions in which he would come and say that he was feeling depressed, he did not see how therapy was helping. His coming to see me had become ritualized; he felt that he just repeated the same stories but seemed to go around in circles. He did not seem to see any progress. I commented on how hard this kind of work is for him, but that his avoidance was also reflective of his pattern of starting new things but not hanging in long enough to get results. He gets discouraged, loses interest, and eventually drops out. His response was to ask how he could get out of repeating this pattern. In addition, he just wanted to feel better. I suggested that therapy is hard work, it would eventually yield results but he needed to stay with it.

When we could return to that topic, I asked what makes it so hard to talk about his feelings. He responded that he gets overwhelmed; he feared that he might die and abandon his mother just as his father had. There was so much he had not said to her that he would now like to tell her. If he were to die, these would be left unsaid. He felt much guilt about the way he had treated her, and had been mean to her when she asked him to help around the house. On the other hand, he thought about the possibility of his mother dying; he would have so many regrets about things he had done and said to her. He would feel terrible. He realized that he got angry at her for no reason. He remembered a scene when his father was in the hospital in the intensive care unit. He had asked his mother if he could see his father, but she said he could not. He was enraged at her, but said nothing. Now he realized that he had been carrying a lot of anger at her and directed his resentment for his father's death toward her.

I said that he feels she deprived him of the opportunity to get close to his dad. He responded by saying that he needed to see his father; it was a chance for him to be with him. There were times, when he was at the hospital, that she told him that he could go home if he wanted to. She was giving him permission to leave. However, he felt that she was depriving him of the opportunity of being with his father. Now he understands her motives; she was trying to protect him from seeing how sick his father was, she wanted him to have good memories, but instead she caused more pain in the long run for him.

He described a dream in which he was sitting in a field of dark green grass, the sun was setting, and it was getting dark. He felt all alone. I suggested that the loneliness that he experienced was related to what happened to him. It may mean that when his father died his mother was also unavailable because of her grief; that left him all by himself to deal with his sadness. He responded that he had always felt alone, he did not feel connected to anyone. It is as though he stood next to himself and watched events, even when there were people around. There always was a feeling of distance between him and others.

During another session, I explained to him the mourning process: grieving, the pain associated with the loss, and morning that lasts a much longer period. Then there are the anniversaries usually associated with "Yortzeit," the Jewish yearly revisiting of the period of mourning. This process included working through old memories. He responded by saying that he could not locate himself in this process. He did not see things that way, because his mind did not work in a sequential manner. This is like his room; there is no orderly way to proceed. I agreed that he was unable to have a map before him that plots where he started and where he is going. It was more like being in a jungle where he felt lost. He got discouraged seeing that there was no path to follow. He gave up or backtracked, telling himself that he would do better by starting over. He agreed and said this problem got in his way in so many areas. It affected his entire life. What could he do? He needed to establish some kind of template that would guide him through the process.

During our discussion of his organizational problems, the issue of his lack of motivation to try harder came up frequently. I asked if he could remember when he lost his motivation to do well in school. He thought it happened in sixth grade. He had done very well until then. His father got sick and they moved to Seattle so that he could be treated. When he came back to seventh grade, he did poorly and became a behavior problem. He then went on to talk about how discouraged he had felt. Now he saw no point in making any effort to achieve, because his life might be cut short at any time, just as his father's was.

He reiterated, as he had numerous times before, that he has the knowledge, the means to be successful, but simply could not act on that knowledge. He listed three reasons for not trying harder. First, why should he give up the pleasure he gets from playing his computer games, if there is no certainty of a future. Second, he will die young in any case, as did his father. Third, if he tried, he might fail. If he failed, he could not live with himself. The threat of death hung over his head. That's why he could not get over his feelings; if he is certain to die, he might as well enjoy the moment, and get as much pleasure as he can! He went on to say that even if he lived and worked hard, even if he made millions, what good would that do if he were to die at 25 or 30. His father got sick at 35 and died when he was 42. As he reflected about this, he said, on the other hand, he might live to be 80 and then he would look back and feel he had accomplished nothing. That would be weird!

I responded by saying that his father did not give up, even though he knew the illness might have been fatal. Why did he think his father did that? He responds that it was true; not only did his father conquer the illness the first time, but also he went on to build a very successful business after the first bone marrow transplant. He left the family quite comfortable from the proceeds of that business. The second time, he did not succeed. He went on to say that there were moments when he did get fired up, he could then take the initiative and work hard and do very well, like the time when he spent an entire week devising a business plan. Not only did he write out the plan, but also he designed stationery, business cards, invoices, everything. He did not feel discouraged; he was swept up by flow of energy.

I said that the difference was that he had started therapy; he had someone whom he could consider to be a mentor, a teacher who was by his side. He responded that when he has someone like that, it is as though his father was there helping him. He wished that his father could be by his side, teaching him and urging him on. He would not feel the sadness and despair he now felt. He was silent for a while, then said, "Yes, but he is not!" I said it is hard for him to see me in that role, it does not feel to him as it would if his father was alive. My encouraging and cheering him on simply does not do it. He agreed. I responded, saying that he might think of how proud his father would be to see him be successful.

At this point, our work had to be interrupted because it was time for him to go back to school. Once more, we agreed to stay in touch, although the contacts were erratic. He reported that he was doing well in his classes, had not been late or missed a single class. He felt very proud,

considering it a great accomplishment. His girlfriend was a young woman who was well organized and was happy to help him with his organizational problems.

The following summer, he returned home for a few weeks. This gave us the opportunity to meet for a few sessions. I noticed a perceptible change in his demeanor and attitude at this time. The lack of concern that was habitual was no longer there. What he had to say was moving and encouraging. He had managed to get good grades during the last semester. However, his overall grade point average was brought down by the grades he had received in the first year at college. This meant that he would not be accepted in the internship to which he intended to apply as part of pursuing his career goal to be an FBI agent. He complained that no matter how hard he worked during the next three years, he could never raise his grade sufficiently to get the government job to which he aspired. He blamed himself for having wasted that first year in college and once more reverted to wishing that his father had been alive. Had his father been alive, he felt sure that would never have happened. I commented that he continues to grieve that loss and is able to draw strength from memories he had of the time when his father was alive. He responded that without the work we had done together, he would never have been able to succeed in college as he did the past semester; but, he added poignantly, "It's not the same as if my father were alive!"

This case illustrates, first, how intertwined psychodynamics and neuropsychological deficits can be in an adolescent with an executive function disorder. Second, it illustrates the type of explanations that an adolescent can give himself to understand the nature of his difficulties. Third, it illustrates the modifications that were introduced into the therapeutic process in order to bring about a beneficial result.

Understanding the intertwined nature of the psychodynamics and the executive function disorder required taking a closer look at the unfolding transference. Mark's executive function disorder was partly responsible for his failure to achieve at the level at which he was capable. The other set of deficits were related to the failures to develop self-regulatory and selfobject functions. Although self-regulatory disruptions are ubiquitous in adolescence, the fact that in Mark's case these included and impairment in self-organization indicated that these were related to his EFD. At the selfobject level, the loss of his father interfered with the ontogenetic development of a specific aspect of the idealizing selfobject functions that would have provided him with the inner strength to confront the adversities he faced. The cognitive impairments may also have contributed to these selfobject deficits. In the therapeutic context, these deficits manifested as transferences and non-transferences.

In the initial phase, Mark did not wish to deal directly with his father's loss. This led us to focus on the contribution his neural psychological deficits made to the problems he faced. The non-transference dimensions that manifested in his behavior were his lateness for his appointments, his cognitive style, and his inability to order his thoughts sufficiently to track his location in the process, and to organize aspects of his personal space.

The central organizing theme that Mark had drawn from his experiences did not include the contributions of his neuropsychological deficits to his life's problems. In spite of the fact that the psychologist and psychiatrist had given him cognitive explanations regarding his executive function difficulties, the explanations were not fully integrated. His inability to function in accordance with his expectations contributed to his depression and demoralization.

I have found it necessary to modify the model of interventions to accommodate my understanding of the contributions of neuropsychological deficits to his psychodynamics. In part, the modification involves demonstrating directly within the context of the therapeutic relationship the precise way in which the deficits interfere in the patient's day-to-day functions. My attempt at mentoring him through the process of organizing his room was an educational effort that was meant to demonstrate to him how he could use complementary functions that others can provide. He became aware of the self-discipline that is necessary to complete an assigned task. Mark found

the exercise instructive although it did not alleviate his problem; in part, it was because he found it difficult to sustain the effort involved in persevering with the task. However, when he returned to college he was able to make better use of his girlfriend's organizational abilities and with some effort develop the self-discipline to undertake successfully the school tasks that faced him.

It is notable that no major rupture occurred between Mark and me. My understanding of the causes of his symptoms forestalled my becoming impatient with him or irritated at him. Others, without an understanding of EFD, might have interpreted his behavior as representing a resistance to the process or as provocative intended to get a response. Such a misunderstanding of the psychodynamics would not only have triggered a rupture but also have set the stage for the emergence of a negative transference.

In closing, Mark came into adolescence saddled with problems that forestalled his ability to consolidate an integrated sense of self. The combination of the loss of his father during early adolescence as well as his executive function deficits was partly responsible for this failure. The responses he got from others in his context did not or could not complement his deficits sufficiently for him to compensate for them. In addition, his own distress interfered with his ability to use others who were available to complement his needs. As he integrated an understanding of his EFD and worked through the loss of his father, Mark was able to begin to exercise the self-discipline necessary to complete tasks within the context of a supportive relationship. He developed a greater sense of self-cohesion and greater self-understanding. However, he remains at risk for blaming future failures to the loss of his father and would lead him to perceive himself as a victim of circumstances.

Conclusion

Executive functions are psychological functions associated with the development of the frontal lobes. These functions, however, are more broadly distributed and not strictly localized to that region of the brain. Although executive function disorders were initially associated with injuries to that region, the existence of a developmental variant with similar symptoms was discovered in individuals without specific brain impairments. This variant may be classified among the learning disorders, but has not been categorized as a specific learning disability.

Current neuropsychological definitions and explanatory theories of EFD have not paid sufficient attention to the psychodynamics associated with this disorder. These conceptualizations have neglected the significance of the social context on those affected and of the responses by those affected to their context. Furthermore, they did not give sufficient consideration to the role of emotional and motivational factors.

Individuals filter their experiences through their endowment. Because of their executive function deficits, these clients cannot adequately regulate their thought processes, affect states, and/or behaviors. They respond to events based on their experience, but the responses are not congruent with the expectations of those in the context. The efforts of both patients and others to continue the dialogue lead to confusion and to a derailment of the dialogue. The consequence is that patients cannot avail themselves of the obtainable selfobject functions. Others, in the patients' context, misinterpret the motives behind the patients' responses and perceive the behavior to be defiant, oppositional, or negativistic. A set of patterns of interactions is established in which patients expect to be misunderstood, and are made anxious because of their failure to understand. Their frustration increases and eventually leads to rage or to withdrawal. Overlaid over this set of patterns are the selfobject deficits that result from the primary neuropsychological deficits.

This chapter attempts to bridge the gap between the developments in the neurosciences and clinical social work practice. It highlights school social workers, who provide services to children

and adolescents, and practitioners, who provide services to adults, unfamiliarity with the disorder as a major impediment to the provision of services to these populations. These problems are compounded by the economic disparities that exist in school districts and the failure of insurance companies to reimburse for diagnostic and treatment services.

From the perspective of a clinician who provides individual therapy to clients of all ages, I proposed a neuropsychodynamic model that permits the formulation of some of the psychodynamics of individuals with the disorder. Two major components of those dynamics were those associated with the self-deficits the disorder produces and the complementary functions that individuals with the disorder require others to perform for them to avoid the development of a disorder of the self. These complementary functions include those associated with the neuropsychological, the social, and the emotional deficits from which persons with the disorder suffer. When others provide those functions, those with the deficits are able to sustain an integrated sense of self. Given these formulations, the model offers a set of treatment approaches that are more likely to produce a therapeutic outcome than those that neglect to take into consideration the neuropsychological deficits.

The treatment approach conceives of the process as a set of moments during which one of three different aspects of the relationship between the client and the therapist is in the foreground, the concordant, the complementary, or the disjunctive. During concordant moments, the focus of the interaction centers on the therapist's efforts to understand the patient's experience and the factors such as the neuropsychological, the social, and personal meanings that contribute to the patient's interpretations of those experiences. To arrive at an accurate diagnosis, the therapist needs to supplement the information gathered through empathy with that of other sources, such as neuropsychological testing, or reports from significant others in the patient's social context.

During complementary moments, the positive and negative transferences are in the foreground, activated by the patient's expectations that the therapist will either gratify the need for the complementary function or disappoint that expectation as others have in the patient's past. Whereas in traditional forms of therapy providing for the missing function is not considered necessarily therapeutic, a different approach is indicated with these patients. Interpretations involve not only unconscious repressed contents but also the non-conscious functions of our minds. Patients need to understand the way in which their brains process information just as they need to understand how they relate to people. For some patients with these types of deficits, understanding is not enough. Interpretations alone do not lead to the internalization of the function or to development of the missing capacity. Some patients require scaffolding or instruction so that they may compensate for the deficit. Other clients may require actual modeling of the function or even provision of that function. Others still may need medication to help restore their neurochemical balance.

The implications for practice of these modifications are numerous and remain to be fully explored. As we begin to apply these newer ways of thinking to clients with such disorders, many of the formerly problematic technical issues, such as whether the provision of functions is contra-indicated, fade and no longer need to burden our work with such patients.

Web resources

Dyslexia
www.dyslexia.wordpress.com/2007/11/09/exercise-and-executive-function-in-the-brain/

Learning Disabilities
www.learningdisabilities.about.com/od/eh/a/executive_funct.htm

References

American Psychiatric Association (APA). (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: APA.

Anderson, P.J. (2008). Towards a developmental model of executive function. In V. Anderson, R. Jacobs, & P. J. Anderson (eds), *Executive functions and the frontal lobes: A lifespan perspective* (pp. 3–21). New York: Taylor & Francis.

Anderson, V., Jacobs, R., & Anderson, P.J. (eds). (2008). *Executive functions and the frontal lobes: A lifespan perspective.* New York: Taylor & Francis.

Applegate, J.S., & Shapiro, J.R. (2005). *Neurobiology for clinical social work: Theory and practice.* New York: W.W. Norton.

Baddeley, A.D. (1996). Exploring the central executive. *Quarterly Journal of Experimental Psychology, 49A* (1), 5–28.

Baddeley, A.D., & Wilson, B. (1988). Frontal amnesia and the dysexecutive syndrome. *Brain and Cognition, 7*, 212–230.

Barkley, R.A. (1990). *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment.* New York: Guilford Press.

Barkley, R.A. (1996). Linkages between attention and executive function. In G.R. Lyon & N.A. Krasnegor (eds), *Attention, memory, and executive function* (pp. 307–325). Baltimore, MD: Paul H. Brookes.

Barkley, R.A. (1998). *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (2nd ed.). New York: Guilford Press.

Baron-Cohen, S., & Swettenham, J. (1997). Theory of mind in autism: Its relationship to executive function and central coherence. In D.J. Cohen & F.R. Volkmar (eds), *Handbook of autism and pervasive developmental disorders* (pp. 880–893). New York: John Wiley & Sons.

Barrett, L.F., & Lindquist, K.A. (2008). The embodiment of emotion. In G.R. Semin & E.R. Smith (eds), *Embodied grounding: Social, cognitive, affective, and neuroscientific approaches* (pp. 237–262). New York: Cambridge University Press.

Beebe, B., & Lachmann, F.M. (1988). Mother-infant mutual influence and precursors of psychic structure. In A. Goldberg (ed.), *Progress in self psychology* (Vol. 3, pp. 3–25). Hillsdale, NJ: Analytic Press.

Beebe, B., & Lachmann, F.M. (1997). Mother-infant structures and presymbolic self and object representations. *Psychoanalytic Dialogues, 7*, 30–182.

Beebe, B., Rustin, J., Sorter, D., & Knoblauch, S. (2005a). An expanded view of forms of intersubjectivity in infancy and their application to psychoanalysis. In B. Beebe, S. Knoblauch, J. Rustin, & D. Sorter (eds), *Forms of intersubjectivity in infant research and adult treatment* (pp. 55–88). New York: Other Press.

Beebe, B., Sorter, D., Rustin, J., & Knoblauch, S. (2005b). Forms of intersubjectivity in infant research: A comparison of Melzoff, Trevarthen, and Stern. In B. Beebe, S. Knoblauch, J. Rustin, & D. Sorter (eds), *Forms of intersubjectivity in infant research and adult treatment* (pp. 29–54). New York: Other Press.

Bernstein, J.H., & Waber, D.P. (2007). Executive capacities from a developmental perspective. In L. Meltzer (ed.), *Executive function in education: From theory to practice* (pp. 77–105). New York: Guilford Press.

Borkowski, J.G., & Burke, J.E. (1996). Theories, models, and measurements of executive functioning: An information processing perspective. In G.R. Lyon & N.A. Krasnegor (eds), *Attention, memory, and executive function* (pp. 235–261). Baltimore, MD: Paul H. Brookes.

Bowlby, J. (1969). *Attachment and loss: Vol. 1, Attachment.* New York: Basic Books.

Cohen, M. (2009). *A guide to special education advocacy: What parents, clinicians and advocates need to know.* London: Jessica Kingsley Publishers.

Coplin, J.W., & Morgan, S.B. (1988). Learning disabilities: A multidimensional perspective. *Journal of Learning Disabilities, 21* (10), 614–622.

Damasio, A.R. (1994). *Descartes' error: Emotion, reason, and the human brain.* New York: G.P. Putnam's Sons.

De Luca, C.R., & Leventer, R.J. (2008). Developmental trajectories of executive functions across the lifespan. In R. Jacobs, V. Anderson, & P.J. Anderson (eds), *Executive functions and the frontal lobes: A lifespan perspective* (pp. 23–56). New York: Taylor & Francis.

Denckla, M.B. (1994). Measurement of executive function. In G.R. Lyon (ed.), *Frames of reference for the assessment of learning disabilities* (pp. 117–142). Baltimore, MD: Paul H. Brookes.

Denckla, M.B. (1996). A theory and model of executive function: A neuropsychological perspective. In G.R. Lyon & N.A. Krasnegor (eds), *Attention, memory, and executive function* (pp. 263–278). Baltimore, MD: Paul H. Brookes.

Denckla, M.B. (2007). Executive function: Binding together the definitions of attention-deficit/hyperactivity disorder and learning disabilities. In L. Meltzer (ed.), *Executive function in education: From theory to practice* (pp. 5–18). New York: Guilford Press.

El-Hai, J. (2005). *The lobotomist: A maverick medical genius and his tragic quest to rid the world of mental illness*. New York: John Wiley & Sons.

Ellenberg, L. (1999). Executive functions in children with learning disabilities and attention deficit disorder. In J.A. Incorvia, B.S. Mark-Goldstein, & D. Tessmer (eds), *Understanding, diagnosing, and treating AD/HD in children and adolescents: An integrative approach* (pp. 197–219). Northvale, NJ: Jason Aronson.

Eslinger, P.J. (1996). Conceptualizing, describing, and measuring components of executive function: A summary. In G.R. Lyon & N.A. Krasnegor (eds), *Attention, memory, and executive function* (pp. 367–395). Baltimore, MD: Paul H. Brookes.

Fonagy, P. (2005). Attachment, trauma and psychoanalysis: When psychoanalysis meets neuroscience. IPA 44th Conference on Trauma: Developments in psychoanalysis, Rio de Janeiro.

Fonagy, P., & Target, M. (1998). Mentalization and the changing aims of child psychoanalysis. *Psychoanalytic Dialogues, 8* (1), 97–114.

Fonagy, P., & Target, M. (2002). Early intervention and the development of self-regulation. *Psychoanalytic Inquiry, 22* (3), 307–335.

Fonagy, P., Gergely, G., Jurist, E.L., & Target, M. (2002). *Affect regulation, mentalization, and the development of the self*. New York: Other Press.

Gazzaniga, M.S. (1988). *Mind matters: How mind and brain interact to create our conscious lives*. Boston, MA: Houghton Mifflin.

Gazzaniga, M.S., Ivry, R.B., & Mangun, G.R. (2002). *Cognitive neuroscience: The biology of the mind* (2nd ed.). New York: W.W. Norton.

Gedo, J.E. (2005). *Psychoanalysis as biological science: A comprehensive theory*. Baltimore, MD: Johns Hopkins University Press.

Goldberg, E. (2001). *The executive brain: Frontal lobes and the civilized mind*. New York: Oxford University Press.

Green, R.L., & Ostrander, R.L. (2009). *Neuroanatomy for students of behavioral disorders*. New York: W.W. Norton.

Harris, J.C. (1998). *Developmental neuropsychiatry*. Oxford: Oxford University Press.

Himrod, L.K. (1995). Protective vigilance: The experience of parenting an adolescent who has learning disabilities. Ph.D. dissertation, Institute for Clinical Social Work, Chicago, IL. Retrieved February 3, 2010, from ProQuest Digital Dissertations database (Publication No. AAT DP11762).

Kaplan-Solms, K., & Solms, M. (2002). *Clinical studies in neuro-psychoanalysis: An introduction to a depth neuropsychology* (2nd ed.). New York: Karnac.

Kesey, K. (1962). *One flew over the cuckoo's nest*. New York: Penguin.

Klin, A., & Jones, W. (2007). Embodied psychoanalysis? Or, on the confluence of psychodynamic theory and developmental science. In L. Mays, P. Fonagy, & M. Target (eds), *Developmental science and psychoanalysis: Integration and innovation* (pp. 5–38). London: Karnac.

Klin, A., Volkmar, F., & Sparrow, S.S. (eds). (2000). *Asperger syndrome*. New York: Guilford Press.

Kohut, H. (1971). *The analysis of the self*. New York: International Universities Press.

Kohut, H. (1977). *The restoration of the self*. New York: International Universities Press.

Kohut, H. (1984). *How does analysis cure?* Chicago, IL: University of Chicago Press.

Leamy, D. (2008). The lived experience of young adolescents with learning disabilities. Ph.D. dissertation, Institute for Clinical Social Work, Chicago, IL. Retrieved February 3, 2010, from ProQuest Digital Dissertations database (Publication No. AAT 3334415).

Leighton, J. (2004). The analyst's sham(e): Collapsing into a one-person system. In W.J. Coburn (ed.), *Transformations in self psychology: Progress in self psychology* (Vol. 20, pp. 169–188). Hillsdale, NJ: Analytic Press.

Levine, M. (1994). *Educational care: A system for understanding and helping children with learning problems at home and in school*. Cambridge, MA: Educators Publishing Service.

Lezak, M.D. (1983). *Neuropsychological assessment*. New York: Oxford University Press.

Lezak, M.D., Howieson, D.B., & Loring, D.W. (2004). *Neuropsychological assessment* (4th ed.). New York: Oxford University Press.

Luria, A.R. (1973). *The working brain: An introduction to neuropsychology*. New York: Basic Books.

Luria, A.R. (1979). *The making of mind: A personal account of Soviet psychology*. Cambridge, MA: Harvard University Press.

Lyon, G.R., & Krasnegor, N.A. (eds). (1996). *Attention, memory, and executive function*. Baltimore, MD: Paul H. Brookes.

Mahler, M.S. (1975). *The psychological birth of the human infant*. New York: Basic Books.

Mcdonald, S. (2008). Social information processing difficulties in adults and implications for treatment. In R. Jacobs, V. Anderson, and P.J. Anderson (eds), *Executive functions and the frontal lobes: A lifespan perspective* (pp. 471–499). New York: Taylor & Francis.

McNulty, M.A. (2000). Dyslexia and the life course. Ph.D. dissertation, Institute for Clinical Social Work, Chicago, IL. Retrieved February 3, 2010, from ProQuest Digital Dissertations database (Publication No. AAT 9979953).

Meltzer, L. (ed.). (2007). *Executive function in education: From theory to practice*. New York: Guilford Press.

Meltzer, L., & Krishman, K. (2007). Executive function difficulties and learning disabilities: Understandings and misunderstandings. In L. Meltzer (ed.), *Executive function in education: From theory to practice* (pp. 5–18). New York: Guilford Press.

Orenstein, M. (1992). Imprisoned intelligence: The discovery of undiagnosed learning disabilities in adults. Ph.D. dissertation, Institute for Clinical Social Work, Chicago, IL. Retrieved February 3, 2010, from ProQuest Digital Dissertations database (Publication No. AAT 9816334).

Ozonoff, S., & Schetter, P. L. (2007). Executive dysfunction in autism spectrum disorders: From research to practice. In L. Meltzer (ed.), *Executive function in education: From theory to practice* (pp. 133–159). New York: Guilford Press.

Palombo, J. (1985a). Self psychology and countertransference in the treatment of children. *Child and Adolescent Social Work Journal, 2* (1), 36–48.

Palombo, J. (1985b). The treatment of borderline neurocognitively impaired children: A perspective from self psychology. *Clinical Social Work Journal, 13* (2), 117–128.

Palombo, J. (1987). Selfobject transferences in the treatment of borderline neurocognitively impaired children. In J.S. Grotstein, M.F. Solomon, & J.A. Lang (eds), *The borderline patient* (pp. 317–346). Hillsdale, NJ: Analytic Press.

Palombo, J. (1991). Neurocognitive differences, self cohesion, and incoherent self narratives. *Child and Adolescent Social Work Journal, 8* (6), 449–472.

Palombo, J. (1993). Neurocognitive deficits, developmental distortions, and incoherent narratives. *Psychoanalytic Inquiry, 13* (1), 85–102.

Palombo, J. (1995). Psychodynamic and relational problems of children with nonverbal learning disabilities. In B.S. Mark & J.A. Incorvaia (eds), *The handbook of infant, child, and adolescent psychotherapy: A guide to diagnosis and treatment* (Vol. I, pp. 147–176). Northvale, NJ: Jason Aronson.

Palombo, J. (2001). *Learning disorders and disorders of the self in children and adolescents*. New York: W.W. Norton.

Palombo, J. (2006). *Nonverbal learning disabilities: A clinical perspective*. New York: W.W. Norton.

Palombo, J. (2008a). Mindsharing: Transitional objects and selfobjects as complementary functions. *Clinical Social Work Journal, 36*, 143–154.

Palombo, J. (2008b). Self psychology theory. In B.A. Thyer (ed.), *Comprehensive handbook of social work and social welfare: Human behavior in the social environment* (Vol. 2, pp. 163–205). Hoboken, NJ: John Wiley & Sons.

PDM Task Force. (2006). *Psychodynamic diagnostic manual*. Silver Spring, MD: Alliance of Psychoanalytic Organizations.

Pennington, B., Bennetto, F.L., McAleer, O., & Roberts, R.J. (1996). Executive functions and working memory. In G.R. Lyon & N.A. Krasnegor (eds), *Attention, memory, and executive function* (pp. 327–348). Baltimore, MD: Paul H. Brookes.

Racker, H. (1968). *Transference and countertransference*. New York: International Universities Press.

Racker, H. (1972). The meaning and uses of countertransference. *Psychoanalytic Quarterly, 41*, 487–506.

Reader, M.J., Harris, E.L., Schuerholz, L.J., & Denckla, M.B. (1994). Attention deficit hyperactivity disorder and executive dysfunction. *Developmental Neuropsychology, 10* (4), 493–512.

Schore, A.N. (2000). Attachment and the regulation of the right brain. *Attachment and Human Development, 2* (1), 23–47.

Schore, A.N. (2001a). Effects of a secure attachment relationship on right brain development, affect regulation, and infant mental health. *Infant Mental Health Journal, 22* (1–2), 7–66.

Schore, A.N. (2001b). The effects of early relational trauma on right brain development, affect regulation, and infant mental health. *Infant Mental Health Journal, 22* (1–2), 201–269.

Schore, A.N. (2003). Minds in the making: attachment, the self-organizing brain, and developmentally-oriented psychoanalytic psychotherapy (Seventh Annual John Bowlby Memorial Lecture). In J. Corrigall and H. Wilkinson (eds). *Revolutionary connections: Psychotherapy and neuroscience* (pp. 7–51). London: Karnac.

Schore, A.N. (2005a). Attachment, affect regulation, and the developing right brain: Linking developmental neuroscience to pediatrics. *Pediatrics in Review, 26* (6), 204–217.

Schore, A.N. (2005b). A neuropsychoanalytic viewpoint: Commentary on paper by Steven H. Knoblauch. *Psychoanalytic Dialogues, 15* (6), 829–854.

Schore, J.R., & Schore, A.N. (2008). The central role of affect regulation in development and treatment. *Clinical Social Work Journal, 36* (1), 9–20.

Schufer, A. (1996). Social-emotional disturbances in children with learning problems and a 15-point Wechsler Performance IQ deficit. Ph.D. dissertation, Institute for Clinical Social Work, Chicago, IL. Retrieved February 3, 2010, from ProQuest Digital Dissertations database (Publication No. AAT DP11784).

Segal, E. (1994). Mothering a child with attention-deficit hyperactivity disorder: Learned mothering. Ph.D. dissertation, Institute for Clinical Social Work, Chicago, IL. Retrieved February 3, 2010, from ProQuest Digital Dissertations database (Publication No. AAT 9612115).

Semin, G.R., & Cacioppo, J.T. (2008). Grounding social cognition: Synchronization, coordination, and co-regulation. In G.R. Semin & E.R. Smith (eds), *Embodied grounding: Social, cognitive, affective, and neuroscientific approaches* (pp. 119–147). New York: Cambridge University Press.

Sergeant, J.A., Geurts, H., & Oosterlaan, J. (2002). How specific is a deficit of executive functioning for attention-deficit/hyperactivity disorder? *Behavioural Brain Research, 130*, 3–28.

Smith, E.E., & Jonides, J. (1999). Storage and executive processes in the frontal lobes. *Science, 283* (5408), 1657–1661.

Solms, M., & Turnbull, O. (2002). *The brain and the inner world: An introduction to the neuroscience of subjective experience.* New York: Other Press.

Stolorow, R.D. (1992). *Contexts of being: The intersubjective foundations of psychological life.* Hillsdale, NJ: Analytic Press.

Tolpin, M. (2002). Doing psychoanalysis of normal development: Forward edge transferences. In A. Goldberg (ed.), *Progress in self psychology, Vol. 18: Postmodern self psychology* (pp. 167–190). New York: Analytic Press.

Tolpin, M. (2007). The divided self: Shifting an intrapsychic balance the forward edge of a kinship transference: To bleed like everyone else. *Psychoanalytic Inquiry, 27* (1), 50–65.

Torgesen, J.K. (1994). Issues in the assessment of executive function: An information-processing perspective. In G.R. Lyon (ed.), *Frames of reference for the assessment of learning disabilities: New views on measurement issues* (pp. 143–162). Baltimore, MD: Paul H. Brookes.

Torgesen, J.K. (1996). A model of memory from an information processing perspective: The special case of phonological memory. In G.R. Lyon & N.A. Krasnegor (eds), *Attention, memory, and executive function* (pp. 157–184). Baltimore, MD: Paul H. Brookes.

Vygotsky, L. (1986). *Thought and language* (A. Kozulin, Trans.). Cambridge, MA: MIT Press.

Wagner, A.D., Bunge, S.A., & Badre, D. (2004). Cognitive control, semantic memory, and priming: Contribution from prefrontal cortex. In M.S. Gazzaniga (ed.), *The cognitive neurosciences* (Vol. 3, pp. 709–725). Cambridge, MA: MIT Press.

Wong, B.Y.L. (1984). Metacognition and learning disabilities. In T.G. Waller, D. Forrest-Pressley, & E. MacKinon (eds), *Metacognition, cognition and human performance.* New York: Academic Press.

Zummo, J.C. (2007). Measuring the impact of milieu therapy for students excluded from public schools. Ph.D. dissertation, Institute for Clinical Social Work, Chicago, IL. Retrieved February 3, 2010, from ProQuest Digital Dissertations database (Publication No. AAT 3267061).