

ON LAPSES IN CONSCIOUSNESS: ATTENTION AND DEFICIENT ATTENTION

3.1 INTRODUCTION

The process of attention allows the nervous system to focus on aspects of the world and also on aspects of the brain itself. The process of imagining allows the nervous system to represent places and objects so that it can reach those places and obtain those objects. The process of consciousness is essential for distinguishing real movements from mental movements, real objects from mental objects, and ongoing events from memories. (Kolb & Whishaw, 1996:487)

The neuropsychological problems identified in borderline psychopathology provide, I believe, an important clue to grasping the development of increasing psychopathology in a frustrating, invalidating environment, an ‘unempathic matrix’, amidst disruptive procedural repertoires, i.e. in a context of Type I, II and III traumas (Kernberg, 1984, 1985b); Linehan, 1993; Kohut, 1977, 1984; Ryle, 1997, Zanarini & Frankenburg, 1997, respectively). This is because a fundamental problem in borderline psychopathology is dysfunctional frontal, executive systems, undermining attention and working memory, upon which consciousness is predicated. With such a problem, and its action in the interpersonal space, the context for chronic and subtle trauma is created.

As I have done in Chapter Two, in this chapter I have selected aspects of the literature to clarify what might disrupt development, and what might reflect that disruption. In this chapter, I explore how attention, consciousness and deficient attention with attendant lapses in consciousness are conceptualised by leading authors in the field, indicating possible sites of entry for borderline psychopathology when there is

impairment in these functions. One form of deficient attention is Attention Deficit/Hyperactivity Disorder (ADHD), and to elucidate the action of the social on the psychopathological, I present historical and current conceptualisations of ADHD. The discussions in the previous chapters and in this one are at all times dedicated to answering my research question, which is directed at understanding the developmental issues of borderline psychopathology and the possible implication of deficient attention for this development.

3.2. ATTENTION AND WORKING MEMORY

The doctrine of attention is the nerve of the whole psychological system, and that as men judge it, so shall they be judged before the general tribunal of psychology (Titchener, 1908, in Kolb & Whishaw, 1996:466).

At the boundary of the hetero-modal cortex and the social world are the mechanisms, processes and products of attention. Attention is the gateway for the comings and goings of memory. What is attended to in the present is both chosen and made sense of in terms of what is recalled from the past, under the auspices of the hippocampi. This raises William James' question: "is attention a resultant or a force?" (1890 in Styles, 1997). There are many examples of causal agent theories and emergent property theories (Styles, 1997). It is submitted at this point, following the notions of quantum theories rather than Newtonian mechanics, that the '*and factor*' applies here: attention is both a causal agent and an emergent property, functioning in a continuous feedback loop. The net result is that attention must create and sustain an entire universe of representations from memory and from being in the world. Thus if attention is disrupted, so is the universe of representations and the sense of being in the world. This disruption is probably experienced as traumatic. William James pinpoints the essences

of attention best:

Everyone knows what attention is. It is the taking possession by the mind, in clear and vivid form, of one out of what seems several simultaneously possible objects or trains of thought. Focalisation, concentration, of consciousness is of its essence. It implies withdrawal from some things in order to deal effectively with others (1890:403-404, in Styles, 1997).

Neuropsychologically, attentional processes are described as a “pool of processing resources” (Styles, 1997:31), directed by networks dedicated to vigilance, orienting and executive management. Optimally, all three systems are influenced (not overwhelmed) affectively by the limbic system.

The vigilance network is responsible for maintaining a state of quiet alertness – the anterior cingulate quieters until it is needed for detection, and “subjectively, one feels empty headed, as one tries to avoid any stray thoughts” (Posner & Bourke in Beaumont, Kenealy & Rogers; 1999:175; Posner & Raichle, 1997). In a traumatised state, however, it is possible that there are always stray thoughts, distractions towards the source of trauma, and concomitant exhaustion in the absence of rest for the anterior cingulate, which is then unprepared for appropriate detection.

The orienting network is responsible for filtering both object- and space-based stimuli, although there are conflicting theories favouring one or the other (object or position in space) in their pursuit of how features of objects are combined and brought into conscious awareness. If the stimulus is novel, the reticular formation is released neurochemically, resulting in arousal, which in turn activates the parietal lobes. These disengage attention from its current focus. Simultaneously, the midbrain receives information, which allows it to move the spotlight of attention from its current focus to the area of the cue. The thalamus then selects the necessary contents of the attended

area, enhances and prioritises those contents for processing by anterior areas that will detect targets and generate responses (Posner & Raichle, 1997). In the case of trauma, however, it becomes difficult to disengage, shift and refocus attention on much more than the source of trauma (Herman, 1998; van der Kolk, 1994).

Although all three networks are connected in a complexity of feedback loops, the executive system, which is heavily implicated in deficient attention, seems to operate at a higher level of processing than the others, monitoring “the selection of information for conscious processing and action and also the maintenance of that alert state required for attentive processing” (Posner & Bourke in Beaumont *et al*, 1999). The executive system also regulates a sufficiency of arousal (of the right frontal and right parietal areas) and sufficient calming (of the anterior cingulate). Such regulation permits the interlude necessary for a release from the current focus of attention, the unobstructed move to the object and whatever subtle novelty it presents on each occasion, focusing and enhancing this attended-to object. This would be in an optimal situation.

It is the executive network that is responsible for detection, i.e. bringing the perceived object into conscious awareness, an awareness that not only accounts for the presence of the object but also for the recognition of its identity and recognition of its place in the fulfilment of a desired goal. Detection implies that this network is also responsible for the following of rules, or, to rephrase, the ability to organise one’s thoughts according to instructions. Executive functions are precisely those that are compromised in both deficient attention (see below) and in borderline psychopathology (see Chapter Two), thus permitting disorganisation of the self¹.

¹ The notion and definition of the ‘self’ will be explored in greater detail in Chapter Four.

Although the brain is apparently unlimited in its capacity to process information, its ability to select the right response from several alternatives is severely attenuated, and more so in a context of trauma. If there were no primacy of action and ultimate choice of response, which are made possible by the executive system, behavioural chaos would result, and is likely when trauma dictates primacy of action. Optimally, actions, unlike reflexes, are adjustable to prevailing conditions, an evolutionary necessity to ensure coherent behaviour. Actions are controlled by skills, which “are stored as nested schemata in long-term memory” (Styles, 1997:120). Skills do not provide comprehensive guidance for the action to be carried out – other parameters are provided by the environment. Following proper combination of attributes of all possible objects for action, inappropriate actions are blocked or inhibited. This involves the negative priming effect, which “suggests that one way of decoupling potentially relevant objects from the immediate control of action is to inhibit their representations or response mappings” (Styles, 1997:122).

Target detection by the executive network is much more than orienting to a cue: it absorbs so much of attention that interference by other signals is ideally effectively resisted. This high level of attention control deals with conflict resolution, planning, response to novel or difficult stimuli, and error detection. Detection gives rise to focal awareness: “Indeed, it seems likely that the executive network is somehow related to our subjective experience of awareness” (Posner & Raichle, 1997:178). It is in this way that trauma impacts on experience, i.e. through a dysfunctional executive network giving an overall ‘bad’ subjective experience of awareness.

Ideally, two lateral areas of the frontal cortex, which (with other areas of the brain) underpin the executive attentional network, assist the anterior cingulate gyrus in spatial positioning and, on the left side, in obtaining word associations. Although these three areas do not represent an exhaustive account of the executive network, together they form the neural substrate of *working memory*, i.e. *both the representation of absent information and the controlled activation of selected representations*. Frontal lobe structures are involved proportionally to the amount of effort involved, increasing with volume, complexity and novelty of task. The involvement decreases as the task becomes practised and automatic, and the insula cortex takes over (Posner & Raichle, 1997).

The central executive system co-ordinates working memory, i.e. selecting and holding information temporarily while it is being processed, allowing, for example, the simultaneous entertainment of the object (significant person) as both good and bad. Such capacity for simultaneity is less likely in the case of deficient attention. Further, it is important, for purposes of this study, to note Le Doux's (1998) comment: "Working memory is the gateway to subjective experiences, emotional and nonemotional ones, and is indispensable in the creation of a conscious emotional feeling" (Le Doux, 1998:296). The quality of intentional, explicit, memory (i.e. plans, both long and short-term) and learning turns upon conscious, initial attention paid. It would then stand to reason that these too are negatively impacted upon in the presence of deficient attention. Feelings of familiarity, on the other hand, are informed by automatic, implicit, unconscious processing (Styles, 1997).

Attention has been described cognitively as selective, divided and automatic, the latter

being outside of awareness. It is noteworthy that normal selective attention is unable to exclude distractors within a one-degree region of what is attended to. This would parallel the efforts required by the normal small child to anxiously keep good from bad, under constant threat that bad will overwhelm. In borderline psychopathology, attention is paid primarily to bad with occasional, unpredictable good experience falling within the one-degree region, thus creating a context of ongoing and subtle trauma. From this one-degree aspect, the notion of a minimum-width spotlight emerged, with the stimuli falling under the spotlight being fully processed (Treisman in Styles, 1997). Furthermore, distractors do not disappear but serve to prime or negatively prime selections. The unpredictable nature of good stimuli in borderline psychopathology would serve to maintain hope and disillusionment, leading to the fundamental traumatised ambivalence of borderline presentation.

Attention favours novelty, indicated by studies of shifts in attention, which can be covert, controlled by conscious decision or automatic. Shifts are “exquisitely linked in time to the occurrence of cues” (Posner & Raichle, 1997:156). Here, the principle of inhibition of return applies: if an initial cue is given and followed by another, it takes longer to shift attention to the initial cue than to the second, novel cue. Inhibition of return has further been interpreted as evidence that spatial tagging takes place. Again, this would serve to maintain the hope-disillusionment-trauma cycle in the case of borderline psychopathology.

Functional vigilance and orienting networks, overseen by an executive that detects novelty, but does so subject to priming, provide the prerequisites for the journey from part object perception to unconscious and conscious experiences of the whole object.

They provide the basis for the human imagination to learn the basics of testing “the best possible future-life scenario” (Marshall & Zohar, 1997:300), in the service of coherent goal-direction. Goals can range from satisfaction of basic needs such as hunger to abstract hunger for the empathic attunement function of the “selfobject” (Kohut, 1977). This implies that not only must object features be integrated (Treisman’s Feature Integration Theory and similar, in Styles, 1997) but also different conscious experiences must be integrated over time, blended into a congruency of self and other. In the case of deficient attention, goal-directedness in the service of the best possible future-life scenario is unsustainable and the cycle of hope-disillusionment-trauma further entrenched until the borderline capacity for self-defeating action or for stopping just short of reaching a goal (DSM IV, 1994) may become apparent.

3.3 CONSCIOUSNESS

My fundamental point in including consciousness in a discussion of attention is that the former is predicated upon the functionality of the latter. As with attention, William James (in Stevens, 1996) provides the most incisive account of consciousness at the experiential level relevant to this study:

...the mind is at every stage a theatre of simultaneous possibilities. Consciousness consists in the comparison of these with each other, the selection of some, and the suppression of the rest by the reinforcing and inhibiting agency of attention...The mind, in short, works on the data it receives very much as a sculptor works on his block of stone. In a sense, the statue stood there from eternity. But there were a thousand different ones beside it, and the sculptor alone is to thank for having extricated this one from the rest (in Stevens, 1996:156).

The ‘sculptor’ who is unable to attend, however, carves in a fragmentary manner, and is constantly presented with his or her unsuccessful efforts. Currently, consciousness, or the emergence of phenomenal awareness, is viewed as optimally arising from a stable

brain state, according to Styles (1997), who cites Allport's suggestion of behavioural integration, Shallice's ideas on coherence between control subsystems, and Crick and Koch's theory of neural synchronisation. Note is also taken of the types of consciousness suggested by Young, Ropper and Bolton (1998). These authors usefully distinguish crude, alert states from phenomenal consciousness, in which preliminary attentive registration of phenomena begins. In their formulation, selective attentive processes are recruited at the level of 'access consciousness', which includes awareness of both self and other.

States of awareness are influenced by levels of arousal or through "an intentional and momentary change in the focussing of attention. Focussed attention gives rise to perceptual clarity, and is regarded here as processing at the highest available level of consciousness" (Underwood in Beaumont *et al*, 1999:240). Underwood suggests a continuum of levels of consciousness: maximal awareness occurs with focal attention, resorting to explicit memory; less awareness is possible when attention is divided; still less when attention is directed towards another source of information (such as trauma). "At the extreme end of this continuum is processing without awareness – the recognition of stimuli without conscious representation" (Underwood in Beaumont *et al*, 1999:240). It is suggested that the borderline individual is in a more or less continuous state of maximal distraction, hoping for the unpredictable good whilst focusing on the bad experiences of life, rather than on what is crucial to survival in the current situation. Perceptual clarity is therefore only rarely achieved and trauma persists.

Evidence from neuropsychology for the existence and properties of consciousness illustrates this latter end of the continuum, as neglect syndromes and consciousness share neuroanatomical involvement. Perceptual, motor, intentional, motivational and representational factors are implicated in neglect, which thus serves as an umbrella term for a variety of dysfunctions, although florid unilateral neglect is unmistakable. “Unilateral neglect is a neurological condition, characterised by an unawareness and subsequent failure to orient or respond to events in the contralesional hemispace, which cannot be explained by primary sensory or motor deficits” (McCarthy in Beaumont *et al*, 1999:511). Mesulam (1985) captures the essence of the experience of neglect when he states: “neglect is not a deficit of seeing, hearing, feeling or moving but one of looking, listening, touching and searching” and “when neglect is severe, the patient may behave almost as if one half of the universe had abruptly ceased to exist in any meaningful form” (Mesulam, 1985:142). This is not to say that all sufferers of borderline psychopathology have lesions on one side of their brains. I am merely suggesting that the extreme of neglect permits thinking of subtle, invisible forms, manifest only in behaviour and subjective experience of missing things, or of individuals being told they are ‘careless’ in their work.

Central to consciousness is attention, which includes the ability to become the object of one’s own attention (Morin, 2000; Prigatano, 1991). Consciousness is being (a knowing, affect-laden state, the legislature and judiciary); attentional processes constitute doing (working memory and affect-influenced agency, the executive). In this conceptualisation, the doings of deficient attention would lead to consciousness disrupted by knowing the self as ungovernable but unable to act correctively. Following

James (in Stevens, 1996), conscious awareness is characterised by continual change and a stream-like nature:

Our state of mind is never precisely the same. Every thought we have of a given fact is, strictly speaking, unique, and only bears a resemblance of kind with our other thoughts of the same fact...Experience is remoulding us every moment, and our mental reaction on every given thing is really a resultant of our experience of the whole world up to that date (James in Stevens, 1996:155).

The subjective experience is one of continuity when consciousness and attention are intact. Within consciousness, James (in Stevens, 1996) identified sub-worlds of experience with different senses of time and qualities. Just outside of consciousness, probably within the one-degree range around the spotlight, is the penumbra, which “gives a particular feel to what we are conscious of, may be the source of vague apprehensions or anticipations, and may serve to direct the focus of our awareness” (Stevens, 1996:156). Consciousness is located in the particular individual, and is essentially private, holding the sense of self and will (ability to direct thought and action or, similarly, an inability to do so).

Csikszentmihalyi conceives of consciousness as “intentionally ordered information” (in Stevens, 1996:157). It is thus representational and directive. The act of focusing attention is equated with psychic energy, depleted in the case of deficient attention and the subsequent exhausting trauma it can provoke in the interpersonal space. Such agency varies considerably. At one extreme is entropy (i.e. intrusive events or thoughts serve to disorder consciousness and disrupt intentionality), as would be the case in borderline psychopathology. At the other extreme is flow, in which “incoming information is congruent with goals, facilitating the effortless flow of psychic energy” (Stevens, 1996:157) an optimal experience releasing attention for free investment. Flow

experiences are crucial for the functioning of self, but are probably few and far between for the child with deficient attention and the adult with borderline psychopathology.

Both quantum physics and the human imagination allow for nuance and superpositions. They contain several possible realities, often mutually contradictory and all juxtaposed one on top of the other. Both throw out “feelers towards the future” in exploring the viability of these possible realities. Quantum systems do this to test the most stable future energy state; the human imagination does it to test the “best possible future-life scenario” (Marshall & Zohar, 1997:300). In order to illustrate the multiple sites of impact that deficient attention may have on consciousness, following the dysfunctional frontal systems identified in borderline psychopathology, I have summarised several notions of levels of consciousness diagrammatically:

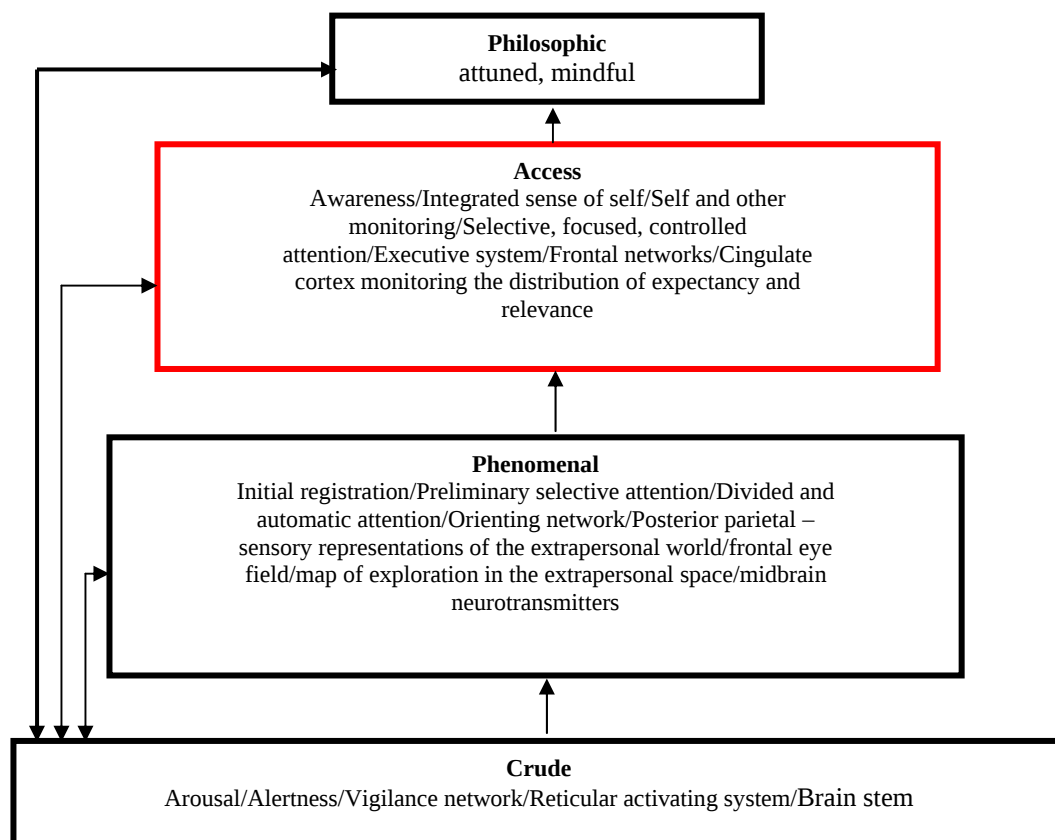


Figure 3.1 A construct of attention and levels of consciousness

[Note: derived from Young, Ropper & Bolton, 1998; Mesulam, 1985; Prigatano, 1991, and Styles, 1997]

3.4 HISTORICAL PERSPECTIVES OF ATTENTION DEFICIT/ HYPERACTIVITY DISORDER

Like Borderline Personality Disorder, Attention Deficit/ Hyperactivity Disorder is (at least partially) produced socially and has undergone historical modification in the search for its ‘true’ essence (Barkley, 1998; Woods & Ploof, 1997). The ancient concept of temperament could begin the history of ADHD, in the sense that

it is the quality of the mammalian brain...which forms the physiological basis for our ability to benefit from the effects of conditioning, that is, to attach meaning to the people, ideas, objects and events in our lives – to colour, imprint, or complex them with feelings of psychic pain and psychic pleasure...In the global sense, temperament can be seen as the emotional template upon which all of the activity of the individual is superimposed (Woods & Ploof, 1997:27).

Still (1902, in Barkley, 1998) described children who were “often aggressive, defiant, resistant to discipline, and excessively emotional or ‘passionate’ and who showed little ‘inhibitory volition’. These children also manifested ‘lawlessness’, spitefulness, cruelty, and dishonesty” (Barkley, 1998:3-4). The hallmarks of these children were immediate gratification of the self and heightened emotionality. Many were insensitive to punishment and unable to sustain attention. The notion of “control of action in conformity to with the idea of the good of all” (in Barkley, 1998:4) was foreign in the absence of inhibitory volition.

From 1938 the involvement of the frontal lobes in hyperactivity was specified. However, this had little impact on most people involved with these children and unless there were visible quantities of brain missing, mild forms were still attributed to bad parenting and bad environments. These latter two aspects were not defined. From 1960 to 1969, the Minimal Brain Dysfunction (MBD) construct was applied less, although it did serve to emphasise the neurological basis of the disorder. It was replaced to a great

extent by two views – one a parent-blaming psychoanalytic view of aetiology and the other based on the separation of types of learning disability into descriptive categories defined by observable deficits, and the emergence of the hyperactive child syndrome. This child was “one who carries out activities at a higher than normal rate...or who is constantly in motion or both” (in Barkley, 1998:8). In this latter view, parents were relieved of blame. Activity level became the defining feature of the disorder, and brain damage only one possible explanation. Descriptions of the disorder tended to be over-inclusive and thus less useful: in addition to learning problems, underachievement, oppositional and defiant behaviour, poor attention span and poor interpersonal relationships, it was considered benign and thought to disappear by puberty. The DSM II of the time followed this line – hyperkinetic reaction of childhood was described as overactivity, restlessness, distractibility, and short attention span, diminishing by adolescence.

An important suggestion made at this point was that of Stein (1964), who proposed that “ongoing behaviour is either repeated or avoided because of the expectation of reward or punishment, and not because of their actual occurrence” (in Woods & Ploof, 1997:4). Desirable behaviour is reinforced association with a pleasurable feeling tone, stored with the behaviour in memory creating what Woods and Ploof term a “memory-feeling tone complex”, similar to object relations units (Kernberg, 1984, 1985b). Stored negative complexes act to inhibit behaviour. The ADHD child was seen to be impervious to rewards, punishment, and expectations of these and to have different memory-feeling tone complexes.

In the period between 1970 and 1979, hyperactivity became a focal interest of both

scientific research and popular interest. Features previously only associated with it were included in its definition: impulsivity, poor frustration tolerance and aggressiveness, *inter alia*, were added to overactivity, short attention span and distractibility. MBD persisted in the view of some (Wender in Barkley, 1998). Wender noted three primary deficits: a decreased experience of both pleasure and pain, a poorly moderated level of activity resulting in hyper- or hypoactivity and extraversion. These primary deficits gave rise to six symptom clusters: motor clumsiness, attentional and perceptual cognitive impairments, learning difficulties, disinhibited impulse control, interpersonal problems arising from an unresponsiveness to social demands; and emotional lability, anger, aggression, depression, anxiety and poor self-esteem. Barkley (1998) gathers these diverse symptoms together in 'behavioural disinhibition', and provides a critique of this approach as lacking in clarity and over-inclusive.

Douglas (in Barkley, 1998) at this time highlighted that the disorder was better characterised by deficits in sustained attention (vigilance) and impulse control than by hyperactivity alone. She separated out other disorders, which had been ascribed to this one: learning disabilities, perseveration on concept learning tasks, auditory problems, directionality and deficits of short-term memory. Hyperactive children were not distractible but could not sustain attention even in the absence of distractors, except if continuous and immediate reinforcement was available. Task performance was extremely variable. Deficits in attention and impulse control were associated with inadequate moral development, especially in adolescence. There were many whose symptoms did remit in early adolescence and for whom stimulant medication did assist. However, deficient sustained attention and poor impulse control frequently persisted, resulting in poorer academic achievement and social adjustment than was previously

thought. Douglas' model of attention deficits, which has been partially substantiated by later studies, proposed four deficits:

- (1) the investment, organization, and maintenance of attention and effort; (2) the inhibition of impulsive responding; (3) the modulation of arousal levels to meet situational demands; and (4) an unusually strong inclination to seek immediate reinforcement (Barkley, 1998:13).

This shift away from hyperactivity because it was non-specific to the disorder, to attention deficits culminated in the DSM III label of Attention Deficit Disorder. Stimulant medication became the treatment of choice, “the most well-studied therapy in child psychiatry” (Barkley, 1998:14) as well as the most popular drug scapegoat ever, it seems. Attempts were still being made to ascribe hyperactivity to teachers and parents intolerant of normal childhood exuberance. Environmental aetiologies without foundation were proffered, including diets and rapid technological and cultural change. Behaviour modification programmes proved effective although not as effective as the stimulant medications. Research centred on underlying physiology although the only consistent finding that emerged was the underarousal of cortical areas. The persistence of symptoms into adulthood was recognised and Adult ADHD became an arena for better understanding of the disorder over time and of its neuropsychology at all ages.

Pontius (1973, in Barkley, 1998) proposed and demonstrated that frontal lobe and caudate dysfunction would lead to “an inability to construct plans of action ahead of the act, to sketch out a goal of action, to keep it in mind for some time (as an overriding idea) and to follow it through in actions under the constructive guidance of such planning...[an inability]...to reprogramme an ongoing activity and to shift within *principles* of action whenever necessary” (in Barkley, 1998:20).

3.5 CURRENT PERSPECTIVES OF ATTENTION DEFICIT/HYPERACTIVITY DISORDER

What ADHD is currently held to be is listed in the criteria of the DSM IV (1994), detailed below. Recent studies point to expansion of the investigation of ADHD in several directions, providing some indication that its importance as a disorder is noted, albeit from separate points of view. It has been explored experimentally (Beaumont *et al*, 1999; Styles, 1997; Posner & Raichle, 1997; Kolb & Whishaw, 1996; Mesulam, 1985). Its epidemiology has been discussed (Sergeant, 2000; Vogel & Holford, 1999; Rohde, Biederman, Busnello, Zimmermann, Schmitz, Martins & Tramontina, 1999; Robison, Sclar, Skaer & Galin, 1999). Currently there are several investigations into its heterogeneity of presentation in studies of subtypes, comorbidities and gender (Arcia & Conners, 1999; Willcutt, Pennington, Chabildas, Friedman & Alexander, 1999; Nigg, Hinshaw, Carte & Treuting, 1998; Pliszka, 1998; Lalonde, Turgay & Hudson, 1998; Barkley, 1998; Gaub & Carlson, 1997; Eiraldi, Power & Nezu, 1997; Lynam, 1996; Arnold, 1996; Seidman, Biederman, Faraone, Weber, Mennin & Jones, 1997). Most usefully for this study are the models of ADHD provided in part by Sergeant (2000) and in particular by Barkley (1998) and Woods and Ploof (1997).

3.5.1 The Psychiatric Perspective

3.5.1.1 Manifestations of ADHD and associated features

A difficulty with the specific construction of ADHD, as it is set out in the DSM IV (1994), is that there is a lack of diagnostic consensus, despite its reported prevalence, a further area of controversy. Definitional, measurement inexactitudes or differences and muddling of subtypes make the establishment of prevalence figures difficult, and wild fluctuations are reported in Barkley (1998). Nonetheless, there is agreement that

ADHD carries significant risk for co-existing disorders: 44% have at least one other disorder; 32% have two others and 11% at least three others (Pliszka, 1998). “As a group, ADHD children are rated as having more symptoms of anxiety, depression or dysthymia, and low self-esteem than normal children or children with learning disabilities” (Barkley, 1998:139). A substantial proportion meet full diagnostic criteria of anxiety and mood disorders: 20% to 36% have a major affective disorder and 27% to 30% also have an anxiety disorder. These figures are clear indicators that trauma, taken as a resultant state, visible in disorders of mood and anxiety disorder, is occurring alongside deficient attention, intrapsychically.

There are also greater levels of familial psychopathology in the families of sufferers of ADHD, “particularly antisocial conduct, major depressive disorders, and substance use disorders as well as greater social adversity than [in the families of] children with either disorder alone” (Barkley, 1998:152). An average across studies finds comorbidity of at least 35% with Oppositional Defiant Disorder (ODD); 20% to 56% of ADHD children with Conduct Disorder (CD); and 44% to 50% of adolescents have comorbid Conduct Disorder (Willcut *et al*, 1999; Nigg *et al*, 1998; Pliszka, 1998; Lalonde *et al*, 1998; Eiraldi *et al*, 1997; Lynam, 1996). ADHD and Learning Disorders are frequently associated, although the relationship between them is not yet clear: “8-39% of ADHD children are likely to have a reading disability, 12-30% have a math disability, and approximately 12-27% may have a spelling disorder” (Barkley, 1998:101). These figures point to concurrent trauma in both the intrapsychic and interpersonal domains.

The ADHD child is also likely to have specific problems in speech development, particularly in expressive language and verbal problem solving. It is noted,

furthermore, that inner speech and self-awareness are positively related to each other (Morin, 2000). According to Barkley (1998), ADHD children are likely to be on average 7 to 10 points below controls on standard IQ tests. However caution is advised in reading figures such as these, as averages disregard individual strengths and weaknesses and, as individual members of a group, these children probably represent the entire bell curve, from gifted to well below average. Several subtests in these standard IQ tests do rely heavily on working memory (Digit Span, Coding Mazes and Arithmetic). Verbal IQ is particularly affected, which Barkley (1998) attributes to the delay of internalised or private forms of speech and thus verbal thought. It is suggested, however, that these tests are not unfair to ADHD children in assessing intelligence as it is defined by the IQ tests, which are simply one more yardstick against which to compare ADHD children with the norm, as defined by standardisation procedures in psychometric test development. This is complicated by the frequent description of ADHD children as learning dysfunctional in terms of school performance. Trauma can be inferred from the experience of being less intellectually adept than peers.

Performance on these measures is reflected in a second area of particular difficulty, i.e. academic performance, from which the trauma of experiencing oneself as incompetent can be extrapolated. Rate of productivity in the classroom is slow and level of complexity in required tasks that are mastered is low, even when IQ predicts better outcomes. Although everyone around the child comments on this underachievement, the most frequent outcome is attenuated education (dropping out or expulsion) and poorer occupational achievement (Rapport, Scanlan & Denney, 1999; Raggio, 1999; Corkum, Moldofsky, Hogg-Johnson, Humphries & Tannock, 1999; Marshall, Hynd, Handwerk & Hall, 1997). This cognitive profile, while subject to individual differences, is further exacerbated by poor motor inhibition that results in weak fine

motor co-ordination, messy handwriting (Raggio, 1999), and probably irritated caretakers.

Adaptive functioning is particularly poor compared to normal children. ADHD children are not usually at an age-appropriate level of relating to peers, self-care, responsibility or independence (Maedgen, 2000), thus perpetuating their feelings of incompetence. Barkley lists adaptive functions such as “chore performance, trustworthy use of money, etiquette” (1998:98). The greater the degree of adaptive impairment the more likely it is that these children turn eventually to other self-destructive means to bolster their fragile selves (Schulz, McKay, Newcorn, Sharma, Gabriel & Halperin, 1998). Other difficulties that the child may experience, (but that vary from individual to individual) and that impact negatively on relationships, are sleep problems (Corkum *et al*, 1999); sensory problems, including frequent bouts of otitis media; undue sensitivity to loudness, and poor accuracy of speech discrimination in the presence of background noise.

3.5.1.2 Subtyping

It appears that type of comorbidity depends on subtype of ADHD, and this latter is not yet settled. Subtyping studies have suggested that ADHD comprises a heterogeneous group of disorders (Barkley, 1998; Ratey, 1995). It seems there is, furthermore, a continuum of severity of subtypes; ranging from least to most severe are: Predominantly Inattentive, Hyperactive-Impulsive, Types comorbid with ODD/CD and Types comorbid with Bipolar Disorder (Willcutt *et al*, 1999; Faraone, Biederman, Mennin *et al*, 1998; Clarke, Barry, McCarthy & Selikowitz, 1998; Hazell, 1997; Gaub & Carlson, 1997). Subtyping is the focus of many current studies (cf. Neuman, Todd,

Heath, Reich, Hudziak, Bucholz, Madden, Begleiter, Porjesz, Kuperman, Hesselbrock & Reich, 1999).

Subtyping studies abound and Barkley (1998) suggests three clinically useful ways in which ADHD can be unpacked: subtyping on hyperactivity, subtyping on aggression, and subtyping on internalising. Nevertheless, despite differences in presentation of these subtypes (i.e. aggressive, internalising or hyperactive), there are no differences in terms of abnormal medical histories and developmental delays. Barkley's (1998) research also revealed that mothers of all three subtypes "reported greater levels of interpersonal sensitivity and hostility as well as general psychological distress than did mothers of normal children" (Barkley, 1998:150). It is conceivable, therefore, that these mothers adopt a persecutory stance that can result in feelings of rejection and, ultimately, a sense of dispossession.

Predominantly inattentive children are reportedly anxious, dreamy and lethargic. These children are viewed as cognitively sluggish, lost in thought and socially withdrawn, having problems with focused attention, memory, speed of information processing and psychomotor speed, i.e. input analysis and information retrieval. These types of description bring to mind a sense that the self is exhausting itself whilst trying to maintain coherence. Poor maths achievement test scores for these children are characteristic (Marshall *et al*, 1997). These predominantly inattentive children are perceived as displaying social passivity and show deficits in social knowledge (Maedgen, 2000). Despite global deficits, predominantly inattentive children display more appropriate behaviour and fewer externalising problems than hyperactive or combined types (Gaub & Carlson, 1997).

Hyperactive children, on the other hand, are seen as manifesting behavioural disinhibition in terms of poor impulse control and poor motivation, poor sustained attention to tasks and overactivity, as well as having difficulty allocating resources and maintaining effort. These children are described as noisy, disruptive, messy, irresponsible and immature (Barkley, 1998), less independent and more prone to socialisation problems (Brito, Pereira & Santos-Morales, 1999). Separating out an aggressive subtype has received a great deal of clinical support. Barkley (1998) defines aggression as “behaviours such as oppositional, defiant, stubborn, explosive, hostile, verbally aggressive and fighting” (Barkley, 1998:152). These children tend also to lie, steal and to be rejected or dispossessed by peers. They further have a distinct pattern of attribution, assigning the actions of others to intentional aggression against them, thus feeling persecuted (Maedgen, 2000; Willcut *et al*, 1999; Gaub & Carlson, 1997; Hazell, 1997; Faraone, Biederman, Mennin *et al*, 1998), which may present a starting point for paranoia. Taken together, the literature on inattention is also suggestive of a pervasive sense of discord, both intrapsychic and interpersonal. The significance of such discord is extended below in the discussion on aetiology.

In a reflection of the heterogeneity of ADHD (Ratey, Middeldorp-Crispijn & Leveroni, 1995), the DSM IV (1994) also divides ADHD into predominantly inattentive, predominantly hyperactive, and combined types. The DSM IV (1994) further states that, as a whole, ADHD is a universal phenomenon. Barkley (1998) provides the following figures: India: 29%; New York: 13.3%; children of military personnel: 11.9% to 12.2%; Puerto Rican children: 9.5%; United States as a whole: 1.8% to 3.3%; New Zealand: 2% to 6.7%. The lowest prevalence is in adolescents in Netherlands

(1.8%). The DSM IV (1994) gives the figure of 3% to 5% of all school-age children. The mean patient age increased by more than one year, from 9.7 in 1990, to 10.8 in 1995 (Robison *et al*, 1999). It is submitted that, given these difficulties, a conservative approach is taken and Sergeant's (2000) comment remains the definitive word on the subject of prevalence: Attention Deficit/Hyperactivity Disorder (ADHD) is a childhood psychiatric disorder, which when carefully defined, affects around 1% of the childhood population. Whichever way one examines it, these figures represent many, many children labelled ADHD (Rohde *et al*, 1999).

3.5.1.3 The issue of gender

One of the first questions that might disturb readers of this study is the suggestion of tying a male-dominated problem (ADHD) to a female-dominated disorder (BPD). In this study, the experience of both men and women who were given the BPD label is at issue. Attention deficits may be a contributory issue, and no more. A further study can explore the gender swivel. In any event, there is disagreement about the gender ratios. Between 1990 and 1995, the number of visits by girls diagnosed with ADHD rose almost four-fold (Robison *et al*, 1999). Arnold (1996) points out that males have traditionally dominated clinical samples of ADHD. Consequently, female manifestations and sex differences have been relatively neglected in the extensive ADHD research. Because ADHD is so common and chronic (lifelong in many cases), even a small proportion of females multiplied by such a large base means hundreds of thousands of girls and women with ADHD, a significant public health problem.

Barkley (1998) states that male children in the general population meet more DSM IV criteria for ADHD, to a more severe degree than do females. Adjusting thresholds for

diagnosis (cut-off scores) for each gender separately “might well result in nullifying the finding that ADHD is more common in males than females” (Barkley, 1998:67). Males are more likely to be aggressive and antisocial thus predisposing them to referral. The ratio may therefore be an artefact, produced by a referral bias towards overt social disturbers. In studies quoted by Barkley (1998), girls tended to be more socially withdrawn and suffered more anxiety and depression (internalising symptoms) than boys; and had fewer behavioural and conduct problems such as aggressiveness.

Some studies have suggested lower IQ and impaired reading ability in girl ADHD sufferers. However, studies using referrals to psychology or psychiatry clinics found no gender differences on measures of intelligence, academic achievement, peer relations, emotional problems, or behavioural disorders (in Barkley, 1998). Most importantly, on measures of impulsivity, attentional tasks, school achievement and peer relationships, a meta-analysis by Gaub and Carlson (1997) found no gender differences. Although there are problems with some of the studies analysed, the only conclusive gender difference that could be established was that girls have a lowered risk of ODD and Conduct Disorder than do boys. This is supported by Arcia and Conners’ (1999) recent study, which found no evidence of cognitive or neuropsychological differences by gender in samples that are sensitive to behavioural deviance in girls.

3.5.1.4 Aetiology

The singular area where the psychiatric construct of ADHD is not fragmented is its aetiology. With the development of different neuro-imaging techniques, it is now the general agreement that ADHD is largely neurological and genetic in origin (Hall & Inder, 2000; Ratey, Middelorp-Crispijn & Leveroni, 1995). The environment does

play some role in the aetiology of ADHD (Faraone & Biederman, 1998), giving rise to individual variations in symptoms, but most of these environmental events are biological. Exposure to toxins, particularly lead, and elevated body lead levels have repeatedly been “linked to risks for inattention and hyperactive behaviour” (Barkley, 1998:173). Exposure to other toxins linked to ADHD includes the prenatal exposure to alcohol and cigarette smoke; and parents of ADHD children tend to drink and smoke more than average, mothers tend to do so even when not pregnant.

With regard to psychosocial factors, the “evidence disarms the finger pointers who have blamed bad parenting or teaching and who have accused patients of wilfully inflicting symptoms on themselves” (Ratey *et al*, 1995:93). This does not render caretakers and peers blameless, however. Their reactions to the behavioural manifestations of ADHD can very well be traumatic, as demonstrated by the studies referred to above and below. Whilst acknowledging the genetic and biological *origins* of ADHD, the environment in which the child develops may exacerbate symptoms (Barkley, 1998). People in the child’s environment tend to be negative towards the child, which leads to non-genetic/biological issues of poor self-esteem amongst other things (Barkley, 1998; Woods & Ploof, 1997; Ratey & Johnson, 1997).

Significantly, the familial context of these children is itself likely to be vulnerable to fragmentation: ADHD, both as causative and as a resultant, is associated with pathological levels of sibling rivalry, parenting stress, and a sense of incompetence as parents, increased parental alcohol consumption, sometimes as a direct result of interacting with the ADHD child, decreased contact with extended family, marital conflict, separation, divorce, and maternal psychopathology. Ironically, the presence of

ADHD in other family members is highly likely, with consequent potential for increasingly severe familial pathology. Approximately 15% to 20% of mothers, 20% to 30% of fathers and 17% to 37% of biological siblings of a child diagnosed as ADHD have (or had) ADHD themselves.

Relationships with others are fraught with conflict. Studies quoted by Barkley (1998) note that in relation to parents, ADHD children are “more talkative, negative and defiant, less compliant and cooperative, more demanding of assistance from others, and less able to play and work independently of their mothers” (Barkley, 1998:143). Mothers, in turn, are less responsive to the questions of these children, more negative, directive, and less rewarding of (infrequent) good behaviour. Mothers tend to relate to their ADHD sons intensely, with high levels of emotion and acrimony.

Similar trends characterise peer relationships – same age children find their ADHD counterparts significantly more disruptive, aggressive, noisy, intrusive and domineering, and reject them, if possible. If outright rejection is not possible, peers become controlling and directive in a manner reminiscent of the ADHD child’s mother. Both parent and peer seem to want to contain the ADHD child’s inattentive, disruptive, immature, sensation-seeking, emotionally reactive, provocative, aggressive, off-task and non-compliant behaviour (Barkley, 1998). The child itself, however, is likely to be experiencing senses of fragmentation, incompetence, persecution, rejection and generally negative consequences. It is suggested that not only are such interactions provoked directly by both child and parent pathology, but also that attitudes have been, to a large extent, constructed historically and that outdated conceptualisations still prevail.

Research currently focuses on supporting (or not) the notion of behavioural disinhibition and its neural networks, the clarification of subtypes, and the use of increasingly refined imaging techniques, stimulant medication, antidepressants and environmental management programmes. The view that ADHD is benign has been relegated to optimistic denial, and research papers, books etc. continue to proliferate. A recent Internet search of the term “attention deficit hyperactivity disorder” produced approximately 180 000 results. Most importantly,

there was also a discernible shift over this past decade in the recognition that deficits in behavioural inhibition may be the most distinguishing characteristic of this disorder from other mental and developmental disorders, and that this deficit is associated with a significant disruption in the development of normal self-regulation (Barkley, 1998:59, quoting Barkley, 1997).

3.5.2 The Neuropsychological Perspective

At the beginning of this chapter, as part of a discussion of what comprises attention (cf. 2: Attention and Working Memory), three networks (vigilance, orienting and executive) were discussed. As there are multiple networks at play, it is clear that deficiencies can arise at multiple sites. Primarily, however, deficient attention is linked in the literature to impaired functioning of the frontal systems. As Barkley (1998) states:

Throughout the century, investigators have repeatedly noted the similarities between symptoms of ADHD and those produced by *lesions or injuries to the frontal lobes more generally and the prefrontal cortex specifically*. (Barkley, 1998:165).

Furthermore, the totality of findings of neuropsychological studies of ADHD point to dysfunctional prefrontal lobes, and consequent deficits in inhibition and executive function, including deficient frontal lobe-mediated self-regulative functions such as

inhibitory control (Houghton, Douglas, West, Whiting, Wall, Langsford, Powell & Carroll, 1999; Rubia, Overmeyer, Taylor, Brammer, Williams, Simmons & Bullmore, 1999; Bush, Frazier, Rauch, Seidman, Whalen, Jenike, Rosen & Biederman, 1999; Kempton, Vance, Maruff, Luk, Costin & Pantelis, 1999; Lovejoy, Ball, Keats, Stutts, Spain, Janda & Janusz, 1999; Rubia, Oosterlaan, Sergeant, Brandeis & van Leeuwen, 1998; Silberstein, Farrow, Levy, Pipingas, Hay & Jarman, 1998; Faraone & Biederman, 1998; Faraone, Biederman, Mennin, Russell & Tsuang, 1998; Pineda, Ardila, Rosselli, Cadavid, Mancheno & Mejia, 1998; Gansler, Fucetola, Krengel, Stetson, Zimering & Makary, 1998; Gualtieri, 1995).

The argument for frontal dysfunction appears to overwhelm dissenting opinions simply in terms of sheer numbers of studies supporting it, and because of the methodological flaws in those that do not. Using larger samples seems to make the difference (Seidman, Biederman, Weber, Hatch & Faraone, 1998; Seidman, Biederman, Faraone, Weber & Ouellette, 1997). At present research is focused on the ventral striatum and its connections to the frontal cortex (Papa, Sergeant & Sadile, 1998; Woods & Ploof, 1997).

Stuss interprets deficits in attention, founded in dysfunctional frontal symptoms, as “a primary deficit in exploratory motor behaviour” (in Beaumont *et al*, 1999:349). This is fundamental to the insoluble issues of the developing borderline self, according to the theorists detailed in Chapters Two and Four. Responses to irrelevant stimuli are not inhibited and are impulsive; novel stimuli do not draw attention to themselves and attention is not sustained. Hypotheses are difficult to formulate, as are shifts between conceptual sets, scheduling and selecting responses in order to achieve a goal, and persistence in problem-solving tasks (Stuss in Beaumont *et al*, 1999).

Deficiencies at the level of working memory prevent concurrent operation of several sources of information and obstruct current thinking processes. Both the operation of information sources and of current thinking processes are constantly used and crucial to further memory formation, learning and survival. Not only are these impaired in frontal system dysfunction, but also hippocampi-formed contextual data relating to information may be lost, together with judgement of its temporal order and its source.

An extreme example that illustrates what happens in deficient frontal attention is provided by akinetic mutism. Due to bilateral lesions of the anterior cingulate, patients orient to external stimuli visually but are unable to initiate any other voluntary activity. “It is as though they had no goals or no mechanisms to carry out goals...when one recovered patient was asked why she had not talked during her illness, she replied, ‘Nothing ever came to mind’” (Posner & Raichle, 1997:172). This incoherence of goal-directed behaviour and the failure to act in accordance with stated objectives, leads to a dissociation between knowing and doing (Kolb & Whishaw, 1996).

Frontal system malfunction affects the front and rear end attentional processes, which guide memory functioning. This is particularly so if the task demands planning and organisation to encode or direct retrieval searches successfully, without distracting interference. Faulty retrieval, in its extreme form, can manifest as confabulation, i.e. “prompt, full, and detailed but incorrect responses to questions requiring the recall of information...The recall is not only incorrect, but may often be bizarre” (Beaumont, in Beaumont *et al*, 1999:226), echoing the bizarre thinking of the borderline individual (Van Reekum, 1993).

These attention-based memory deficits agglomerate to a deficit in metamemory, defined as “knowledge of the capacity of one’s memory processes and of strategies which can improve memory performance” (Stuss in Beaumont *et al*, 1999:50). Poor insight and self-reflexivity follow logically, in this neuropsychological view. However, disturbed self-awareness and self-monitoring do not necessarily imply absent knowledge. It seems instead that the knowledge cannot be utilised and comes to nothing.

3.5.2.1 ADHD and the feeling brain

Drawing from neuropsychology, *inter alia*, Woods and Ploof (1997) have conceptualised ADHD as an impairment of the feeling brain. Sufferers of ADHD “have considerable difficulty imprinting the feeling component of experience” (Woods & Ploof, 1997: ix). The authors conceptualise the symptoms of ADHD as a failure of the mechanism of expectancy and its relationship to an appreciation of time in the three dimensions of past, present and future, i.e. a general blunting of experience, also present in symptoms of posttraumatic stress disorder (Herman, 1998).

Accordingly, if we think of future time as expectancy and past time as the stored memory complex of behaviour and its associated psychic feeling tones, one can see how the past and the future are brought into play in the present behaviour of the organism (Woods & Ploof, 1997:6).

If activation of the reward and punishment centres of the brain occurs at an abnormally high threshold, usual stimulation of these will have little or no impact on ongoing behaviour. This type of activation is frequently present in the backgrounds of both the ADHD child and the borderline adult. As a result, “conditioning...would not occur; there would be little or no psychic feeling complexed with a particular behaviour, person, event, or object in memory and, therefore, little or no *expectancy* of either

reward or punishment” (Woods & Ploof, 1997: 6). However, I maintain that hope as a distractor remains, despite its minimal influence in this framework. Functionally, these centres are related to systems of wakefulness (referred to as vigilance in a previous section), attention, habituation (both in visual orienting), planning and foresight (the executive system).

In addition to considering the ADHD child in terms of blunted feelings, and thus difficult-to-activate reward and punishment centres, the existence in the present time, and the consequent schism from both society and within the self, Woods and Ploof’s model views the “ADHD individual as falling at one extreme of a naturally occurring – perhaps normally distributed – temperament continuum” (Woods & Ploof, 1997:9). Temperament in this context refers to the extent the individual is able to benefit from the effects of conditioning in the arena of complex events, ideas, objects and people with feelings of psychic pain and psychic pleasure. Although temperament is heritable, notable through the same dopaminergic cells in the ventral tegmental area as ADHD, it is modifiable to an extent by environmental input and certain psychotropic medicines acting on the reward and punishment centres of the brain (Woods & Ploof, 1997).

The punishment centres seem to be fuelled by serotonergic transmission as well as periventricular structures. “If reward is withheld or punishment terminated, opposite effects are observed. Operants previously maintained by rewarding consequences tend to be inhibited or extinguished under such conditions; operants maintained by the avoidance or termination of a punishing stimulus tend to be facilitated” (Woods & Ploof, 1997:101). The net effect, it is suggested, is that negative experience tends to prevail and that negatively toned object-relations units or stored memory complexes are

easier to lay down in the formation of the psyche. The force of an expectation of either reward or punishment, even in the absence of the latter, ideally should be a function of balanced experience. However, expectation of punishment is the more common experience of the ADHD child (Barkley, 1998). In any event, activation of brain reward and punishment mechanisms “suberves our subjective experience as humans of psychic pain and psychic pleasure” (Woods & Ploof, 1997:81).

3.5.2.2 The self-regulatory perspective

The overwhelming evidence for frontal system dysfunction in borderline psychopathology means that fundamental self-regulatory mechanisms are not in place, which implies there is an impaired mechanism overseeing no less than the “programming, regulation and verification of human activity” (Luria in Ratey 1995:97). Even though intellectual abilities seem to remain intact, they are obstructed by fragmented ideas, disorganisation and decreased sensitivity to both reward and punishment. Disrupted social-emotional learning is the consequence (Woods & Ploof, 1997; Ratey, Middeldorp-Crispijn & Leveroni, 1995). These processes, I suggest, resonate negatively in the interaction of self and selfobject as defined by Kohut (Lee & Martin, 1991). Over time, the specific nature of deficient self-regulation, constructed and maintained in the context of an invalidating environment, shakes the individual’s distinction between fantasy and reality in a quasipsychotic manner, where quasipsychotic thought patterns are the hallmark of borderline cognitions (Van Reekum, 1993).

Barkley (1998) proceeds from prefrontal dysfunction in his model of ADHD, which is conceived of as a failure of both behavioural inhibition and self-regulatory

mechanisms. These lead in turn to incompetencies in the executive functions that control motor response selection and execution behaviour. Barkley (1998) defines the executive functions as non-verbal and verbal working memory, self-regulation of affect, motivation and arousal; and reconstitution. Barkley (1998) further refines them as the internalisation of initially external behaviours.

Ideally, non-verbal working memory becomes a covert, private and internalised sensory-motor activity (re-sensing to the self), which allows for the capacity of non-verbal rule-governed behaviour, through the time delay and organisation inherent to self-regulation. “If the mental representations of past events in working memory ultimately initiate and guide motor responses associated with those events, then such mental representations take on the power of rules in governing behaviour” (Barkley, 1998:238). I submit that object relations units and transmuted internalisations in the formation of the psyche (Kernberg, 1984; Kohut, 1984) take on similar powers, and in the case of borderline psychopathology the experience of badness becomes the context in which rules are internalised. The absence of such internalisation may explain why both ADHD children and borderline individuals have such trouble with rule-governed behaviour, which in turn produces traumatic consequences.

Optimally verbal working memory becomes an internalisation of speech, permitting reflection, description and questioning of the self; as well as the taking in of external rules such that problem solving is possible. “Eventually, ...metarules can be generated into a hierarchically arranged system that resembles the concept of metacognition in developmental psychology” (Barkley, 1998:231). Such reflection and ability to solve problems is impaired in borderline psychopathology, where impulsivity is a hallmark.

The motor control, fluency and syntax that eventually result from these executive functions also become increasingly internalised and private, as well as deliberate and reasoned, intentional and future-oriented. Motor control, with feedback from working memory, allows sensitivity to errors, disengagement, response to the interruption or error correction and re-engagement in the original goal-directed sequence. Such fluency is disrupted in borderline psychopathology, leading to the apparent lack of goal-directedness or failure to achieve stated goals noted in affected individuals (DSM IV, 1994).

In contrast to the desired state of motor control, the speech problems associated with ADHD appear to be in the organisation of language for production, and in the rules of conversational turn taking. During spontaneous conversation, sufferers of ADHD (and those of borderline psychopathology) tend to a burbling, interrupting, verbosity, which by its nature disregards the other. However, if speech must be organised for a task (confrontational), it becomes disorganised, impoverished and dysfluent. This is reminiscent of Balint's conceptualisation of borderline psychopathology as a basic fault, emanating from a speechless, tension-filled presence in the psychotherapeutic space. Further, these children have trouble communicating task-essential information when co-operation is required (Barkley, 1998). Internalisation of language is consistently delayed in ADHD, with consequences for the development of thought (Vygotsky, 1986). ADHD children remain for an extended period at Level II of internalisation. This is observable in their audibly describing their own actions, giving self-guiding instructions, asking of and answering questions to the self, reading aloud, sounding out words and expressing affect (in Barkley, 1998). This would be akin to keeping up a running commentary while disrupting the other quieter, children in the

classroom or social setting. Intrapsychically, impoverished inner speech promotes deficient self-awareness (Morin, 2000), where there is analogous lack of insight and ego-syntonia in borderline psychopathology.

Motivation to persist in goal-directed action, in the absence of external rewards, is similarly internalised, optimally. The representations of the working memories are paired with affective and motivational tones (which Damasio (1995) terms “somatic markers”) to produce an emotive, aroused situation. The ability to delay response, internally, leads to emotional self-control in which the original charge of an event can be distinguished from and modified before, response. This permits objectivity, even a nascent capacity for empathy, and the continuation in pursuit of coherent goals, all disrupted in both ADHD and borderline psychopathology.

Reconstitution, when it is possible with behavioural inhibition, refers to the verbal and non-verbal abilities to analyse and synthesise complex behavioural sequences of both others and the self and the creation of novel behaviours and sequences from learned rules or syntax, which govern temporal sequencing of units and ‘if-then’ relationships. Typically, the borderline individual evidences concrete thinking and is unable to assume this abstract attitude.

None of these executive functions happen without behavioural inhibition, as is the case in ADHD (and borderline psychopathology), which Barkley (1998) refers to as a series of impairments resulting in a renegade motor control system. Behavioural inhibition requires the inhibition of the prepotent response, i.e. the one for which immediate reinforcement is available, either positive or negative; the halting of an ongoing

response, allowing a delay for working (representational) memory to process incoming and outgoing information; and the protection of this delay, by disallowing interfering distractors. “All three inhibitory activities are impaired in ADHD” (Barkley, 1998:231), and are similarly impaired in borderline psychopathology, with its overlapping neurological underpinnings.

In ideal circumstances, self-regulation is centred on the individual by the individual, rather than on external events, and permits altering responses as required, in terms of later rather than immediate outcomes. The purpose of this would be to select responses beneficial to the individual across both short- and long-term outcomes, with preference being given to long-term goals. An inherent property of self-regulation is, therefore, the ability to bridge time delays and to organise cross-temporal behavioural contingencies. The neuropsychological mechanism supporting self-regulation is working memory, which “permits the capacity to sense time and the conjecturing of the future and to put them to use in the organization and execution of behaviour. To conjecture the future, the past must be capable of recall and analysis for patterns among sequential chains of events and their behavioural contingencies, because it is from the recall of the past that such hypothetical futures can be constructed” (Barkley, 1998:233). In contrast, the individual with deficient attention finds it almost impossible to resist forbidden temptations, particularly if the immediate reward for rule violation competes with the rule itself.

Inattention and poor sustained attention, in Barkley’s (1998) view, are seen as resulting from an interaction of behavioural disinhibition with the executive functions, which

subserve internally represented imagery, rules and self-motivation in the control of behaviour. Interference inhibition is lost in this type of internally guided inattention.

The totality of the deficits associated with ADHD cleave thought from action, knowledge from performance, past and future from the moment, and dimension of time from the rest of the three-dimensional world more generally...[it] is not a disorder of knowing what to do but of doing what one knows (Barkley, 1998:233).

The essential impact of behavioural disinhibition and inadequate self-monitoring is well described by Barkley (1998):

both prefrontal lesions and ADHD create a form of temporal neglect, time blindness, which results not only in the most obvious shift in the control of behaviour from internal to external guidance (Barkley, 1998:247).

but also leaves the ADHD individual a prisoner of the present. Woods and Ploof (1997) are indeed eloquent on the subject of insufficient activation of reward and punishment centres of the brain: “Robbed, so to speak, of both anticipatory pleasures and anticipatory anxieties or punishers, and lacking an adequate feeling-bond with others, this type of individual may be said to be truly socially and emotionally deprived” (Woods & Ploof, 1997:6).

Barkley’s description arrests the reader in the whirlpool of the child and those caught in it, and resonates with Falret’s description of hysterics, quoted in Chapter Two. These children

respond quickly to situations without waiting for instructions to be completed or adequately appreciating what is required in the setting. Heedless or careless errors are often the result. [These children] fail to consider the potentially negative, destructive, or even dangerous consequences that may be associated with particular situations or behaviours. Thus they seem to engage in frequent, unnecessary risk taking. Taking chances on a dare or whim, especially from a peer, may occur more often than is normal. Consequently, accidental poisonings and injuries are not uncommon and ADHD children may carelessly damage or destroy others’ property considerably more frequently than do normal children. Waiting one’s turn in a game or in a group line-up before going to an activity is often problematic for them. When faced with tasks or

situations in which are encouraged to delay seeking gratification and to work toward a longer-term goal and larger reward, they often opt for the immediate, smaller reward that requires less work to achieve. They are notorious for taking 'shortcuts' in their work performance, applying the least amount of effort and taking the least amount of time in performing tasks they find boring or aversive. When they desire something to which others control access and they must wait a while to obtain it...they may badger the parent excessively during the waiting interval, appearing to others as incessantly demanding and self-centered. Situations or games that involve sharing, cooperation, and restraint are particularly problematic for these impulsive children. Verbally, they often say things indiscreetly without regard for the feelings of others or...social consequences to themselves. Blurting out answers to questions prematurely and interrupting the conversations of others are commonplace (Barkley, 1998:50).

3.6 CONCLUDING COMMENTS

The conceptualisations of attention and deficient attention presented here begin an understanding of how a self can come to unravel when its embodied aspects are impaired, inconsistent or absent in contexts that are themselves ill-equipped to deal with individuals who are not always 'with' us. In effect, deficits in attention provide a base for lapses in consciousness, during which reality is temporarily held at bay while the fantasy world of the child comes to the fore. The fantasy may not contain anything, given the blunted nature of the ADHD child. Either way the child is based in its context in an intermittent way, which may very well lead to misunderstandings, misreadings of the social area, inappropriate behaviour and hostile responses as consequences.

In effect, they are not able to take possession by the mind, in clear and vivid form, of one out of what seem several simultaneously possible objects. They have difficulty with focalisation, concentration, and the consciousness that is of its essence. They cannot select some possibilities, and suppress the rest by the reinforcing and inhibiting agency of attention. The 'sculptor' is confused (William James in Stevens, 1996:156),

potentially traumatised internally, in both the cases of deficient attention and borderline psychopathology, given their identical neuropsychological pathways. They are further potentially traumatised externally by the provocation these constitute and the chronic, subtle traumatic contexts in which these individuals frequently find themselves.

The child with deficient attention and lapses in consciousness is ‘thrown’ into the world in this particular manner, permitting the genesis of trauma, and deviating markedly in development from what is considered to be ‘normal’, a notion of development explored in the next chapter.