Affect Regulation and Loss of Initiative in a Case of Orbitofrontal Injury

Birgit Bork Mathiesen (Copenhagen), Pernille L. Vedel Förster (Roskilde), & Henriette Aaby Svendsen (Copenhagen)

Personality change after injury to the orbitofrontal cortex has frequently been described in the literature. However, there are only a few specific and reliable methods available for the assessment of personality change after brain injury. Here we present a patient, LP, whose personality has changed due to a ruptured aneurysm of the anterior communicating artery that resulted in bilateral ventromesial prefrontal lesions. Although his performance on extensive conventional neuropsychological tests was within normal range, he exhibited severe behavioral problems characterized by lack of initiative, inappropriate social timing, and blunt affect. The patient’s behavioral problems were measured with extensive assessment of personality characteristics and traits using methods from psychodynamic and psychometric traditions. Although no general signs of psychopathology were found, there were some indications that he was suffering from personal problems that fluctuated, sometimes do after frontal-lobe injury. Intensive psychoanalytic psychotherapy allows us to hypothesize about some of the dynamics behind his acquired “loss of initiative,” although the very nature of his problems appears to be an obstacle to this kind of psychotherapy. This case study, like similar ones presented in the literature, reminds us to be cautious of accepting negative findings concerning standardized test performance as evidence of the absence of real-life problems after frontal-lobe injury.

Assessment of mental change and function after orbitofrontal lesions

Frontal-lobe injury does not necessarily have an adverse effect upon individual performance on intelligence measures. Moderate deterioration of intelligence, amnesia, as well as discrete working-memory problems have been reported in connection with orbitofrontal injury, although these findings are not consistent (Damasio, Tranel, & Damasio, 1990; Shallice & Burgess, 1991a). Case studies, beginning with that of Phineas Gage in 1848 (Macmillan, 1986), followed by the study of 32 patients with prefrontal injury after excision for tumor or abscess (Rylander, 1939), and more recently demonstrated in Eslinger and Damasio’s (1985) well-known patient, EVR, illustrate the problems related to personality change and assessment of function after orbitofrontal injury. The central finding is the dissociation between (relatively) intact cognitive abilities measured by standardized neuropsychological tests and the poor utilization of those abilities in real life.

Typical symptoms of orbitofrontal injury reflect socioemotional rather than cognitive changes and may include: indifference, poor judgment, lack of foresight, unreliability, facetiousness, euphoria, emotional shallowness, childish behavior, disinhibition, and irritability (Vilki, 1995). The following problems have also been described: loss of initiative, insensitivity to future consequences of actions (Bechara, Damasio, Damasio, & Anderson, 1994), delusional misidentification (Box, Laing, & Kopelman, 1999), temporal-context confusion and spontaneous confabulations (Ptak & Schnider, 1999), self-regulation disorder.

Birgit Bork Mathiesen: University Clinic, Department of Psychology, University of Copenhagen, Copenhagen, Denmark; Pernille L. Vedel Förster: Skt. Hans Hospital, Department of Clinical Psychology, Roskilde, Denmark; Henriette Aaby Svendsen: Department of Psychology, University of Copenhagen, Copenhagen, Denmark.

Correspondence to: Birgit Bork Mathiesen, University Clinic, Department of Psychology, University of Copenhagen, Njalsgade 90, DK-2300 Copenhagen S, Denmark (email: birgit.bork.mathiesen@psy.ou.dk).

Acknowledgements: We are grateful to Hanne Udesen, Simo Koppe, and Tom Teasdale for their help and support, and we also want to thank our patient, LP, for allowing us to present his story in this way. He was a participant in B. B. Mathiesen’s Ph.D. study at the Department of Psychology, University of Copenhagen. The study was financed by the Faculty of Humanities. Procedures have been approved by the Scientific-Ethical Committees of Copenhagen and Frederiksberg, Journal No. (KF) 07–115/97.
The validity of tests of executive functions

Tests commonly used to assess executive functions are not consistently able to demonstrate significant differences between patients with prefrontal lesions and patients with lesions posterior to the central sulcus. For example, Shallice and Burgess found no significant differences between test results obtained from three prefrontally injured patients and normal controls on the Similarities subtest of the WAIS-R, the Wisconsin Card Sort Test (WCST), the Stroop test, the Tower of London, Cognitive Estimates, fluency tests, or Trail Making B (Shallice & Burgess, 1991a), although the patients had posttraumatic deficits, which were revealed in real-life situations (e.g., in the case of EVR: Damasio, Tranel, & Damasio, 1990).

Several of the tests of executive functions cannot be regarded as valid measures of prefrontal dysfunction. One can conclude that the WCST (Anderson, Bigler, & Blatter, 1995; Anderson, Damasio, Jones, & Tranel, 1991; Axelrod, Goldman, Heaton, & Curtiss, 1996; Drewe, 1974; Nelson, 1976; Van-den-Broek, Bradshaw, & Szabadi, 1993), Word Fluency (Benton, 1968; Crowe, 1992; Pendleton & Heaton, 1982; Perret, 1974), the Stroop test (Ahola, Vilikki, & Servo, 1996; Perret, 1974; Richer, Decary, Lapierre, & Rouleau, 1993; Stuss, 1991b; Vendrell, Junque, Pujol, & Jurado, 1995; Vilikki, Holst, Ohman, Servo, & Heiskanen, 1989), and Tower of London might be sensitive to brain injury, but that they are not specifically sensitive to prefrontal dysfunction as such (Lezak, 1995). There may be several reasons for this. Different executive tests measure different aspects of executive functions, so that, for example, the WCST taps concept formation and perseveration, the Stroop measures the ability to inhibit interference, the Tower of London primarily measures planning, while fluency tests concern self-generated productivity. Furthermore, executive functions are the product of complex and distributed activity throughout the brain, including the prefrontal areas, as recent neuroimaging studies have suggested (Elliott et al., 1997; Nagahama et al., 1996; Pardo, Pardo, Janer, & Raichle, 1990).

Thus, for example, there have been conflicting findings with regard to the role of dorsolateral frontal vs. ventromesial areas in WCST performance. Milner (1964) found that patients with dorsolateral prefrontal lesions performed more poorly than any other patient group, while Drew (1974) found that patients with ventromesially localized lesions performed worse than dorsolaterally lesioned patients on this test. The WCST has also been investigated concerning the laterality of lesions. Some studies have found that prefrontal lesions in the left hemisphere result in poorer performance on the test than do right-hemispheric lesions (Drew, 1974; Milner, 1964). Others have found no differences (Anderson et al., 1991; Van-den-Broek, Bradshaw, & Szabadi, 1993).

Tests meant to detect prefrontal dysfunction have been criticized for being too structured to detect these dysfunctions, and initiatives have been taken to develop less structured tests, such as the Multiple Errands Test and the Six Element Test (Shallice & Burgess, 1991b), but these tests are rather time-consuming to administer.

In a review on neuropsychological assessment research, Garb and Schramke (1996) reported that the validity of these measures is only moderately high. The addition of interview and personal-history data to psychometric data concerning personality assessment generally leads to increased validity. Interviewing close relatives is another way to collect valid data about the actual mental changes and handicaps of the brain-injured (Teasdale et al., 1997; Varney & Menefee, 1993; Vilikki et al., 1994), as some patients underestimates their behavioral problems, which can compromise the accuracy of self-report methods.

Assessment of personality and personality change after brain injury

Although we know that some of the most severe changes after injury to the orbitofrontal areas of the brain may be emotional or motivational, there has been only little progress in the personality assessment of brain-injured people. It has been suggested that one of the reasons for the lack of appropriate research tools in this area is that there have been few advances in the development of reliable instruments for the assessment of emotional, personality, and psychosocial disorders in general (Gainotti, 1993). Another problem seems to
stem from the fact that most of the existing methods have been developed for psychiatric patients, with a focus on psychiatric diagnostic criteria, problems, and symptoms. Finally, methods for the assessment of premorbid personality and its influence on current difficulties are still lacking.

Trimble (1990) has noted that post-injury personality changes can be discerned only with reference to the premorbid personality and behavior of the individual patient. Frequently, maladaptive patterns are not revealed through standardized and validated behavioral norms based on population studies. Behavioral changes may also fluctuate from one testing occasion to another, which complicates the identification of these changes. Furthermore, there may be problems with the patient's knowing what to do, his/her ability to repeat the instructions, verbalized intentions, and failure to undertake the action required in a neuropsychological test. In everyday life, these changes and fluctuations can be extremely deceptive and lead the unwary observer, friend, or family member to consider the patient to be either unhelpful or obstructive, letting down his/her family and friends. Orbitofrontal injury seems to result in changes in socioemotional abilities rather than purely cognitive functions, which have been correlated with neuroanatomic pathways. The orbitofrontal area has extensive connections with the limbic system and therefore has been suggested to be involved in the regulation of affect and emotions. Assessment tools to identify the difficulties, anticipate psychosocial problems, and intervene with relevant therapeutic help are sorely needed, evidence for which is provided by the case study presented later.

Rating scales have been introduced in neuropsychology, such as the Neurobehavioral Rating Scale (NRS: Levin, High, Goethe, & Sisson, 1987). The initial level of impairment (two to four months after the head injury) on the Cognition-Energy factor of the NRS has been found to be a good predictor of psychosocial outcome after closed head injury (Vilki et al., 1994). But Levin et al. (1987) caution against applying the rating scales in clinical or research settings without preliminary training of interviewers in order to establish satisfactory interrater reliability, which is of course a problem to be dealt with using any rating scale.

Another option is to apply methods derived from theories arguing that advanced affective and cognitive functions are integrated phenomena in brain-healthy individuals. This integration reflects the functions of the self, which Stuss reintroduced in neuropsychology, citing William James (Stuss, 1991a). Stuss pointed out that the self is dependent on intact frontal-lobe functi

Similarly, Antonio Damasio (1994, 1999) presented a general theory that details the hierarchical structures and neural components that may underlie the mental construction of personality, identity, and self. Around the same time, drawing on empirical research from developmental psychology as well as neuroscience, Schore (1994) addressed the question of the development of the self.

An argument for using an interdisciplinary approach to this issue can be seen in the formulations about the constitution and functions of the self in psychoanalytic self-metatheory (Kernberg, 1982, 1984) and neuro-psychological theory (Stuss, 1991c; Stuss, Alexander, & Benson, 1997; Wheeler, Stuss, & Tulving, 1997), which will be introduced in the following section.

Based on observations of patients with disturbed self-awareness, Stuss, Alexander, and Benson (1997) suggest that there are three interrelated hierarchical levels of functioning. First, loss of knowledge or a domain-specific impairment, as in Wernicke's aphasia, or hemispatial neglect/denial of paralysis to a limb (anosognosia), have been reported with posterior/dorsolateral brain lesions and represent the lowest level in the self-model (Stuss, Alexander, & Benson, 1997). Lesions to the prefrontal cortex can also result in a disturbance of self-awareness, but in the presence of intact knowledge and thus at the level of executive functions, which represents the second level of the model. The third and highest level of monitoring behavior is the level of self-reflection, and some frontal-lobe-injured patients with neither anosognosia nor executive dysfunctions are unable to use appropriate objective judgments made about themselves in real-life situations, thus presenting disturbed self-referential abilities.

The "ego," self-consciousness, self-awareness, and self-reflectiveness have been associated with autonoetic consciousness ("self-knowing")—that is, the adult human's ability to mentally represent and become aware of subjective experiences in the past, present, and future (Wheeler, Stuss, & Tulving, 1997). Although Wheeler, Stuss, & Tulving (1997) share the belief that the integrity of the medial temporal lobes is crucial for the ability to be consciously (or "noetically") aware of recent events, it is suggested that the prefrontal cortex, in conjunction with its reciprocal connections with other cortical and subcortical structures, gives healthy human adults the capacity to see the self's extended existence throughout time, an expression of which is episodic remembering and the so-called autonoetic awareness.

In order to bridge the gap between clinical neuropsychology and psychoanalysis, we turn to Kemberg,
who proposed a theory and method for assessing the intrapsychic structural characteristics of adults, which we have used for the initial interview with our patient LP.

Kernberg (1981) suggested that there are three broad structural organizations corresponding to neurotic, borderline, and psychotic disorders, structures that mediate between etiologic factors and the direct behavioral manifestation of illness: "Regardless of the relative contributions of genetic, constitutional, biochemical, familial, psychodynamic, or psychosocial factors to etiology of the illness, the effects of them all are eventually reflected in the type of overall psychic structure" (p. 169). The structural characteristics are (1) identity integration vs. identity diffusion (and the related overall quality of object relations), (2) a constellation of advanced or primitive defensive operations, and (3) presence or absence of reality testing. Individuals with normal/neurotic personality structure present an integrated identity, maintained reality testing, and a defensive organization centering on repression and other high-level defensive operations. Individuals with borderline personality structures are characterized by identity diffusion. Here, contradictory aspects of self and others are poorly integrated and kept apart, although self- and object representations are sharply delimited; the defensive operations are mainly splitting and low-level defenses like primitive idealization, projective identification, denial, omnipotence, and devaluation, which protect the patient from intrapsychic conflict. People with psychotic personality structures present identity diffusion with poorly delimited self- and object representations or delusional identity; the defenses are low-level, protecting the patient from disintegration and self-object merging, and the capacity to test reality is lost. These characteristics can be evaluated through Kernberg's so-called structural interview.

We have found it theoretically and practically compatible to interview patients with orbitofrontal or ventromesial lesions, looking for signs of identity diffusion, in the same way that brain-healthy individuals are assessed. It seems obvious that psychoanalytic theories and methodology might specify recent neuropsychological suggestions of disturbances of ego- or self functions after injury to the prefrontal cortex, although the integration of neuropsychological and psychoanalytic terminology might be difficult and might only result in tentative formulations that need further investigation. In accordance with theories of a hierarchy of brain functions, we suggest that frontal-lobe injury may influence psychological functions and disturb aspects of the self, which may regress to a more primitive level of functioning.

Recently, a clinicanoanatomical "correlation method" was presented in which the behavior of four patients with ventromesial frontal lesions was analyzed using a psychoanalytic metapsychological frame of theory (Kaplan-Solms & Solms, 2000; Solms, 1998). It was hypothesized that frontal regions may be decisive components of the neuroanatomic circuits responsible for the constitution of secondary processes and inhibition of primary processes. Objects are represented as "a cascade of mnemic traces" (Kaplan-Solms & Solms, 2000, p. 200) at different levels of brain-function (cf. the work of Stuss and colleagues cited above). Whole-object representations are related to certain right-hemisphere functions, word-representations to specific left-hemisphere functions, whereas narcissistic object representations are believed to be structuralized on the basis of ventromesial frontal-lobe connections. It was suggested that the behavior of the four patients is generally controlled by unconscious processes characterized by (1) exemption from mutual contradiction, (2) drives and wishes guided by the primary process, (3) timelessness, and (4) replacement of external reality by psychic reality (cf. Freud, 1915). Two of the patients had suffered traumatic brain injury, two had subarachnoid hemorrhages (SAHs) after ruptured aneurysms of the anterior communicating artery, and they were all interviewed in the relatively acute phase. Of special interest (in relation to our patient LP) are the descriptions of the dominant transference fantasies of the patients, which parallel the relation of a sick child with a caring mother or containing parent, but with strong elements of projection or projective identifications, as (ego- and especially) superego functions are attributed to the therapist.

Although no neuropsychological assessment or test results were reported, the impression is that the patients presented severe memory and attention deficits. The conclusion gleaned from the interviews is the general hypothesis that the ventromesial frontal regions form the neuroanatomical substrate of primitive, narcissistic object representations, which form the "internal nucleus of the self-regulatory functions of the ego and superego" (Kaplan-Solms & Solms, 2000, p. 201, emphasis in original), and these areas perform the basic economic transformation through which the primary processes of the mind are being inhibited or controlled (p. 230). This means that such areas are crucial for the secondary process, and thereby for the ego functions. A disruption of this economic, basic function was suggested to disturb all the functions of
the secondary process, ego-, and superego-functions that normally structure and inhibit unconscious wishes and fantasies through censorship, defensive operations, judgment, reality testing, and so forth. This theory is congruent with the neuropsychological and psychodynamic theories presented above, although there may be individual differences depending on the exact localization and size of the lesion, the time of assessment, and the premorbid personality traits.

The patient presented in the following case study was interviewed almost six years after suffering a ruptured aneurysm of the anterior communicating artery; he has very few identifiable cognitive dysfunctions and is neither psychotic nor unrealistic in his perception of himself and his situation, although his ability to cope with life-demands has dramatically decreased. The hypothesis of the relation between the frontal lobes and inhibition of primary processes will be discussed in relation to our case study later. But we have had to look for other aspects of ego- and self-functions in order to understand the chronic state of personality change due to bilateral ventromesial lesions after SAH.

Stenhouse, Knight, Longmore, and Bishara (1991) found that in the late stages of recovery after SAH, there are three kinds of patients: "those with persuasive cognitive defects, those with evidence of residual frontal lobe damage and those who showed no evidence of dysfunction" (p. 909). Our patient was of the last type.

Materials, methods, and results

Patient and case history

LP, a right-handed, white male, was 44 years old at the time of assessment. He had an M.A. in Social Science and Communication, and before hospitalization he had a full-time job teaching young adults communication and information technology. One year prior to his illness, he and his wife were divorced, resulting in shared parenting of their two young children. He moved into a house that he shared with some friends. Until the day of his illness, he was apparently in good health.

In November 1991, LP suffered from a ruptured aneurysm of the anterior communicating artery (AcoA). On arrival at the hospital, he was in a fetal position, had visual hallucinations, and seemed extremely anxious. The doctors first suspected a drug-induced psychosis, but CT scans revealed an SAH indicating a ruptured aneurysm. An angiography demonstrated a large aneurysm of the AcoA, which was clipped.

LP’s physical recovery was uncomplicated apart from anosmia. Postoperatively, a CT scan showed a hypodensity medially in the left frontal lobe and in a smaller area in the right frontal lobe (Figure 1). He suffered some memory debilitation but felt no other deficits. He was offered a convalescent period in Montebello, Spain, and he slowly began to realize the severity of the illness, as well as some cognitive and emotional changes during the stay. Three months after surgery, he was referred for neuropsychological assessment due to concentration problems, lack of initiative, and depressive thoughts. His test results were within the normal average range, except for one verbal-learning test. LP was encouraged to return to his job when he felt ready.

So, LP returned to his previous job, working part time during spring 1992, and began working full time after the summer holiday. But he did not cope very well. He forgot to prepare for his classes and lost control over the teaching process. He also failed to
fulfill his obligations at home in the shared house, and eventually he was asked to move. He moved to a rented flat. Nine months after surgery he realized that he was no longer able to teach, and he went on sick leave. At the time he stopped working, he reacted with depression, which was treated successfully with medication. He was finally allocated a disability pension.

Six years later, LP experienced several psychosocial problems—lack of initiative, emotional flattening, and “bad timing” of humorous remarks in social interactions—and he would sometimes miss appointments. Things did not affect him the way they had before, except perhaps music: he could still “get high” on music, but his joy from rehearsing music before gigs with his amateur band had changed, so he did not play as often as before. As an example of missing appointments, he once failed to pick up his children for their summer holiday with him. LP described his intrapsychic state in situations like this as a “stand-by” mood, where he ignored calls and letters. He was totally aware of what he was supposed to do, he was ashamed of not doing it, but he “just didn’t” do it. Instead, he gave in to activities he considered trivial, such as playing computer games and going to the cinema.

Before the accident, LP was engaged in many different activities and had different kinds of responsibilities. His best friend noted that today what he missed most was the visionary attitude the patient used to have. His friend also pointed out that his sense of humor had become more sarcastic, sometimes to such a degree that it spoiled a good atmosphere. LP did not fail to notice that the good atmosphere was spoiled, but he could not forestall his own remarks and their effect. He had somehow lost his sense of timing. His premorbid personality traits and some hypotheses of his interpersonal relations during childhood and youth will be presented after the test results.

LP had lived in his rented flat for three years when we met with him, but most of the moving boxes were still unpacked and the flat contained years of newspapers piled up. He knew that his personal hygiene was below standard; it bothered him, but he did not improve it. And he was still single, contrary to his wishes, but he said that the state of his flat was an obstacle for taking any initiatives to find a partner.

Neuropsychological tests and measures

LP was administered neuropsychological tests six years after his surgery, as a participant in a Ph.D. project on personality change after brain injury (Mathiesen, 2000). Prior to this, he had been administered neuropsychological tests twice. A summary of the test results is provided in Table 1.

As shown in Table 1, LP did not seem to have continued reduction in any cognitive area. Memory and executive functions are of special interest, since he had a SAH after an ACoA. In the neuropsychological assessments from 1994 and 1996, the conclusion was that he had a somewhat fluctuating performance on memory tests, but the 1997 scores were within the normal range. The Series II-version of the Danish Ten-Word List Learning (with selective reminding) was presented to LP after he mentioned that he could recall some of the words in the Series I version from prior testing. As is shown in Table 1, he had more faults and trials in the second version, but unfortunately there are no Danish norms available for Series II. The rather extensive battery of tests meant to tap executive functions revealed no evidence of reduction, although (Danish) norms have not been established for all of them.

Personality assessment results

As a participant in the research project, the patient was administered several self-report questionnaires and was interviewed using Kernberg’s structural interview during a videotaped session. The interview was evaluated with the Karolinska Psychodynamic Profile, an instrument that measures different aspects of mental functioning (KAPP: Weinryb, Rössel, & Asberg, 1991a, 1991b) (see Appendix B). The questionnaires administered included the Defence Style Questionnaire (DSQ-40) focusing on the mental defense style of the individual (Andrews, Singh, & Bond, 1993; Elklit, 1997; Pedersen & Elklit, 1998), and the European Brain Injury Questionnaire (EBIQ), which is designed specifically to elicit brain-injured patients’ and their relatives’ experience of acquired difficulties of a personal and practical character in the patients’ everyday lives (Teasdale et al., 1997). The patient’s EBIQ scores were compared to a small Danish control group consisting of 18 individuals [44 % males; mean age = 39 years, SD = 6; mean level of education = 4 (range 1 = no higher education, 5 = university degree), SD = 1)]. The patient’s EBIQ scores were also compared with those of a small group of patients (4 female, 8 male) with prefrontal brain injuries caused by head trauma (n = 8) or SAH (n = 4) [mean age = 38 years, SD = 12; mean level of education = 4, SD = 1, not significantly different from LP whose level of education is 5]. To our knowledge, no personality tests have been administered to LP prior to this occasion. The personality test battery is summarized in Appendix A.
### Table 1. Neuropsychological test battery

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Premorbid level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Danish Adult Reading Test</td>
<td>40</td>
<td>–</td>
<td>–</td>
<td>36.9 (8.1)</td>
</tr>
<tr>
<td>WAIS information</td>
<td>24</td>
<td>–</td>
<td>–</td>
<td>21.9 (2.5)</td>
</tr>
<tr>
<td><strong>Attention/concentration</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WAIS Digit span (max.:score)</td>
<td>5/10</td>
<td>6/-</td>
<td>7/-</td>
<td>11.3 (1.1) score only</td>
</tr>
<tr>
<td>WAIS Digit span reverse</td>
<td>5/9</td>
<td>4/-</td>
<td>5/-</td>
<td>8.0 (1.9) score only</td>
</tr>
<tr>
<td>100-7</td>
<td>10/10</td>
<td>–</td>
<td>–</td>
<td>cut off score = 6</td>
</tr>
<tr>
<td>Sentence repetition</td>
<td>–</td>
<td>21/22</td>
<td>19/-</td>
<td>18.9 (1.9)</td>
</tr>
<tr>
<td><strong>Learning/memory</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rey-Osterreith Complex Figure Test</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copy score</td>
<td>36/36</td>
<td>–</td>
<td>–</td>
<td>32/- (Leczet, 1995)</td>
</tr>
<tr>
<td>4-min. recall</td>
<td>29/36</td>
<td>–</td>
<td>–</td>
<td>22/- (Leczet, 1995)</td>
</tr>
<tr>
<td>54-min. recall</td>
<td>28/36</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Well-known faces (no. recognized; % named)</td>
<td>20/20; 95%</td>
<td>–</td>
<td>–</td>
<td>19/20; 95%</td>
</tr>
<tr>
<td>Forced-choice face recognition (no. recognized/total no.)</td>
<td>–</td>
<td>43/50</td>
<td>–</td>
<td>45.5 (3.6)</td>
</tr>
<tr>
<td>Forced-choice word recognition (no. recognized/total no.)</td>
<td>–</td>
<td>(50/50)</td>
<td>–</td>
<td>46.9 (1.5)</td>
</tr>
<tr>
<td>Ten-word List learning—faults (no. of trials)</td>
<td>9 (4)</td>
<td>11 (6)</td>
<td>–</td>
<td>6.9 (2.7)</td>
</tr>
<tr>
<td>Ten-word List learning—Series II</td>
<td>17 (5)</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td><strong>Visual perception</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Street</td>
<td>16/20</td>
<td>16/20</td>
<td>–</td>
<td>12 (4)</td>
</tr>
<tr>
<td><strong>Psychomotor speed</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Symbol Digit Modalities Test (sec.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(no. of symbols incidentally remembered)</td>
<td>–</td>
<td>58 (9/9)</td>
<td>56 (9/9)</td>
<td>51.1 (9.1)</td>
</tr>
<tr>
<td><strong>Trail Making</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Part A (time in sec.)</td>
<td>22</td>
<td>–</td>
<td>24</td>
<td>27.2 (8.0)</td>
</tr>
<tr>
<td>Part B (time in sec.)</td>
<td>52</td>
<td>–</td>
<td>56</td>
<td>59.6 (15.7)</td>
</tr>
<tr>
<td><strong>Abstraction, executive functions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WAIS similarities</td>
<td>21</td>
<td>–</td>
<td>26</td>
<td>20.5 (2.2)</td>
</tr>
<tr>
<td>WAIS comprehension</td>
<td>64</td>
<td>–</td>
<td>–</td>
<td>67.8 (7.0)</td>
</tr>
<tr>
<td>WAIS picture completion</td>
<td>19</td>
<td>16</td>
<td>–</td>
<td>15.8 (2.2)</td>
</tr>
<tr>
<td>WAIS picture arrangement</td>
<td>36/36</td>
<td>33/36</td>
<td>–</td>
<td>27.1 (4.3)</td>
</tr>
<tr>
<td>WCST a.m. (Nelson, 1976)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of categories</td>
<td>6</td>
<td>6</td>
<td>–</td>
<td>5.5 (1)</td>
</tr>
<tr>
<td>No. of perseverative errors</td>
<td>0</td>
<td>3</td>
<td>–</td>
<td>5 (9)</td>
</tr>
<tr>
<td>No. of nonperseverative errors</td>
<td>2</td>
<td>0</td>
<td>–</td>
<td>8 (5)</td>
</tr>
<tr>
<td><strong>Word fluency</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animals 60 sec.</td>
<td>29</td>
<td>27</td>
<td>–</td>
<td>21 (5)</td>
</tr>
<tr>
<td>S-words 60 sec.</td>
<td>21</td>
<td>14</td>
<td>–</td>
<td>13 (5)</td>
</tr>
<tr>
<td>Design fluency (number)</td>
<td>34</td>
<td>35</td>
<td>–</td>
<td>35 (9)</td>
</tr>
<tr>
<td>Proverbs</td>
<td>7</td>
<td>10/10</td>
<td>–</td>
<td>9.1 (2.1)</td>
</tr>
<tr>
<td>Stroop (modified version, interference part)</td>
<td>47</td>
<td>–</td>
<td>–</td>
<td>48 (2)</td>
</tr>
<tr>
<td>Tower of London Test</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of moves</td>
<td>65</td>
<td>–</td>
<td>–</td>
<td>64 (16)</td>
</tr>
<tr>
<td>Total time spent (sec.)</td>
<td>170</td>
<td>–</td>
<td>–</td>
<td>185 (33)</td>
</tr>
<tr>
<td><strong>Six Element Test</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of subtests</td>
<td>6</td>
<td>–</td>
<td>–</td>
<td>5.7 (0.5)</td>
</tr>
<tr>
<td>Max. time spent on one subtest (min.:sec.)</td>
<td>4:28</td>
<td>–</td>
<td>–</td>
<td>5:35 (0.35)</td>
</tr>
</tbody>
</table>

*a* Danish norms unless otherwise noted.

*b* Norms of Shallice and Burgess (1991b).
The EBIQ profile of this patient (Figure 2) indicated that the patient was having major cognitive problems (concentration, planning activities) as well as motivational disturbances (lacking initiative concerning his main interest of guitar rehearsals and getting things done at home), which were also his primary complaints in the clinical interview. These problems (especially the motivational ones) were not identified as being so grave by his best friend, who filled in the parallel form in place of a relative, as he was now the person closest to the patient in his everyday life. They agreed that impulsivity (i.e., acting tactlessly or feeling annoyed or irritated) was not a problem, as is often seen with brain-injured individuals, especially those with frontal-lobe injury (see Figure 3). The patient experienced being isolated to a larger degree than his friend observed, a pattern also reflected on the communication subscale, but neither problem was noted as more than "a little." The patient's experience of having problems in general (the core scale) exceeded his friend's judgment and was (not surprisingly) above the normal control-group's level. Both findings are in accordance with research on quality of life and cognitive deficits after SAH reported by patients and relatives (Hütter, Gilsbach, & Kreitschmann, 1995).

The patient's EBIQ profile differed from the Danish non-brain-injured controls concerning the considered level of problems in all but the "impulsivity" scale, which was at the normal level. His subjective experience of problems thus did not follow the tendency shown in the Teasdale et al. (1997) study of brain-injured individuals. In this study patients report fewer problems on most scales than relatives think the patients have. Neither does LP follow the tendency for orbitofrontally lesioned persons to be prone to impulsivity and sexual promiscuity. His problem was, rather, the opposite: lack of initiative. This is typically seen after ventromesial lesions, where the emotional and social behavior, drive, and motivation can be dampened or nullified (Damasio & Van Hoesen, 1983; Hütter, 1998). Hütter, Gilsbach, and Kreitschmann (1995) have found that the introspective capacities of patients after SAH may be compromised by anosognosia (leading to underestimation of problems) or depression (leading to exaggeration of the level of problems; Hütter, Gilsbach, & Kreitschmann, 1995), but LP did not seem to suffer from either at the time we saw him.

These findings increased our confidence to use further self-report measures with this patient. At the same time, the similarity between the EBIQ profile and the clinical impression confirmed our confidence in the EBIQ as a reliable instrument for the assessment of both general and specific difficulties experienced by brain-injured individuals and their relatives.

The Karolinska Psychodynamic Profile is a rating instrument based on psychoanalytic theory. It is intended to assess relatively stable modes of mental functioning, as they appear in self-perception and interpersonal relations. It contains 18 subscales (see Appendix B). Although the patient was considered to have good ego strength, with good capacity for interpersonal relating according to Scales 1 through 3 (see Figure 4), there were clearly problems in the patient's sense of his own social significance (Scales 15 and 16). This finding was consistent with the EBIQ
scores. The other highly significant score was on the "alexithymia" scale (Subscale 8: see Appendix B). He himself described a sense of lack of access to emotional experience, compared to his premorbid way of functioning. The KAPP profile altogether did not reflect any severe psychopathology compared to the available norms (Weinryb, Rössel, & Åsberg, 1991a).

The capacity to endure or solve mental conflict between wishes, to endure and adaptively solve conflict between wishes and reality, and the ability to direct aggressive affect toward adaptive and goal-directed attitudes are supposedly handled by the mind's defensive mechanisms. We suggest that these ego functions may become compromised or regress to a more primitive level after a brain injury. The patient's scores on the Danish version of the Defense Style Questionnaire were the following: "mature factor" = 43, "neurotic factor" = 38, and "immature factor" = 80. The Danish norms are based on 34- to 45-year-old male readers of the journal Research News from Psychology, who had a mean score on the "mature factor" of 48 (SD = 9), on the "neurotic factor" of 36 (SD = 9), and on the "immature factor" of 89 (SD = 24) (Elklit, 1997; Pedersen & Elklit, 1998). Thus, LP's defensive operations were within the normal range. The highest score on a single type of mature defense was 11 compared to a "mature" average of 10.75. The highest score on a neurotic defense type was 13 (reaction formation) compared to a "neurotic" average of 9.5. Interestingly, the highest score (11) compared to the average score of the immature factors (6.6) was on the defensive mechanism of "isolation." His general coping strategies seemed to be within a normal range, so the everyday problems of this patient did not at first sight seem to stem from inappropriate defensive mechanisms in general.

Psychotherapy with LP

As LP was intelligent and eloquent and seemed capable of introspection and self-reflection, he was offered psychoanalytic psychotherapy twice a week (facing the therapist, not on a couch) with the first author (BBM) as therapist. Because of his acknowledged problem of missing appointments, the rules were made very clear: he would pay a rather symbolic amount equivalent to the price of a cinema ticket, but not insignificant in his economy) for the therapy whether he came or not, as the session would be there for him. He was asked to present his thoughts and feelings as freely as possible, and, most of the time, the therapist would intervene only with questions or remarks, when something was unclear, or when hypotheses regarding the patient's problems or interaction patterns were presented. He was aware that the therapy might be a long process—perhaps lasting years—and he expressed confidence in the idea of psychotherapy. None of the sessions was recorded verbatim, but themes and parts of the dialogue were written down immediately after each of the 23 sessions that he attended in the course of eight months. The therapy was supervised by a senior psychoanalyst every two weeks.

The transference from the beginning was characterized by themes of efficacy vs. incompetence, power vs. impotence. He would tell stories about brilliant, intelligent men he knew, or had heard of or seen in movies, who in spite of severe physical handicaps or lack of education had had success. He also described his own lack of ability to succeed in everyday activities like cleaning his flat or rehearsing before meeting with the band. The countertransference reactions of the therapist made the power-vs.-impotence theme stand out: she would intervene by supportive comments, with
which he seemed content. On the other hand, it turned out to be very provoking to him when she did not give him (positive) feedback, as when she only listened from a neutral position. Furthermore, clarifying questions from the therapist like "so you felt you were overreacting when you shouted at your children?" were being turned down with a defensive remark, such as, "no I didn't feel that at all, we just talked it over and all was fine in the end."

At one point, he began every session stating that he did not have anything to say. He was reminded that anything that came to mind would do. He would then present "talks" resembling short news reports on TV—for example, "I went to the fitness club this morning and played table tennis, which was fine. Then I went to the cinema, I took my bike. It is good that I got this bike." This way of reporting events with factual details ("pensée opératoire"), instead of in an emotionally differentiated manner with which it is possible to empathize, has been labeled "alexithymia"—that is, difficulty in distinguishing between different feelings and sensations and in verbalizing them. Efforts to find parallels between his interpersonal relations as "reported" during sessions were frequently reacted to as if the therapist were being critical (projective identification) or they were denied as "wrong perceptions." It became clear that he wanted to place the therapist in an unthreatening position, like a warm and understanding mother with no demands and no critique.

Some of his childhood and young adult experiences were revealed during therapy and may illustrate his object relations. It turned out that an older baby brother was sick and died before LP was born, and also a younger brother was a small baby, whereas LP had been healthy and strong from birth—until the SAH. But he also described himself as a child who was teased in school. He used to come home from school feeling bad, and his mother would ask him to play for her on the guitar, which would usually cheer him up. His father was described as weak and quiet compared to his indomitable, hardworking mother. LP left school early and found work as a probationary clerk, which he did not enjoy. He stayed out late in the evenings playing the guitar, smoking marijuana with friends. His mother (and father) could not make him come home at agreed-upon times, which were renegotiated several times, until he did not come home at all when he was 17 years old. For two weeks the mother and brother tried to "catch" him going to and from work, but they didn't succeed, as he saw them waiting for him. Then he disappeared; for six months he lived a "hippie life," without calling his family. His family asked the police to help them find him, but this never happened. He moved around the country and settled down in a major city, where he finally contacted his family and gave them his address. After some "wild" years, he decided to get on with his education (described earlier). During his time at university, he married and they had two children. His wife was described as a woman of temperament compared to him. The reasons for the divorce were only vaguely outlined in terms of her feeling let down on household duties, as he was never in the house. He found this criticism difficult to understand, as he was working full-time, while she stayed home with the children and later finished her studies, an arrangement he thought was mutually agreed upon.

It turned out that the therapist's role in the therapy as "strong" and powerful, with possible insights into things hidden from him, troubled him. He did not want to listen to her comments and only wanted her support or admiration, similar to when his mother listened to him play the guitar. He filled his days with all sorts of pleasant activities (computer games, cinema trips, visits to museums, long bicycle rides in the woods), but he did not want this acknowledged as something he enjoyed and succeeded in doing. As the transference relation became still more tense, with a strong counter-transference feeling of being critical and nonempathic, this was presented to him: he assured the therapist that he felt very confident and comfortable with her. He could not provide thoughts and feelings about what happened when he missed appointments in general and only described feeling "nothing" when the "stand-by mood" was there. It was as if his thoughts stopped, he explained.

He missed the third session, which he asserted was due to forgetfulness, but appeared the other seven times the first month. He then failed to come four out of six times the next month. This started as a conscious decision, as he felt somehow to be affected by the therapy, although he could not elaborate in what way. As he had a show coming up with his band, and he feared having a bad performance if he had been in therapy right before that, he stayed away from therapy. After he missed a therapy session (without canceling the appointment), he had such a bad conscience that he did not turn up until the therapist reached him on the telephone. The therapy was reestablished, after which he failed to come four times out of seven the following month, but then came all six times before his summer holiday and returned as planned after the vacation. The next two months he did not turn up at all, then came three times, since which the therapist has not been in physical or verbal contact with him. During the final three months of the study, the Defence Style Question-
naire was sent to him again, and he returned it through the second author (PLVF), in whose research project he had agreed to participate. It seemed that his defenses, not only as experienced by the therapist, but also on the DSQ-40, had regressed to a more primitive level. Before starting in therapy, his mature defenses were scored 43, the neurotic 38, and the immature 80. During the final months, when he failed to come to sessions, the mature defenses were scored 48, the neurotic 42, and the immature 95. It was defensive operations such as projection (earlier score 9, current score 14), acting out (earlier score 5, current score 14), devaluation (earlier score 6, current score 8), displacement (earlier score 7, current score 9), and denial (earlier score 5, current score 7) that affected the overall immature defense scores in a negative direction. We do not know the reason(s) for this regression to the use of more primitive defenses. One hypothesis is that the therapy (and/or some other areas of his life) was frustrating him, which was reflected in less adaptive problem-solving capacities. These signs of ego weakness could indicate that frustration (of fantasized omnipotent control) was so threatening to LP that he had to reject the therapist (onto whom his negative self-representations were projected) in order to protect his self-image.

The KAPP revealed a generally good level of functioning with no significant signs of personality disorder or other severe psychopathology. In accordance with the patient’s experience of rather severe motivational and communicative problems, however, he did have negative scores on the subscales concerning sexual satisfaction and social significance. The only other subscale showing rather severe problems was the alexithymia subscale.

The results of the DSQ-40 showed no sign of psychopathology either. Going into detail, though, the most significant information may be that concerning the patient’s use of “isolation” as a mental defense mechanism. Isolation of affect from the content of the mental representation could be another expression of alexithymia (lack of access to emotional experience) and resembles the experience described by Damasio’s patient EVR. Furthermore, we cannot be sure that the DSQ-40 assesses traits, rather than states. In psychotherapy, the patient’s defense operations regressed to a more primitive level, where he was frequently using denial, rationalization, and—sometimes—projective identification. These observations were confirmed, as LP was administered the DSQ-40 again at the time when he failed to turn up for therapy, and the immature defenses had been accentuated. A more thorough investigation of the level of defensive functioning could be an interesting next step to take, but our findings could indicate that LP’s frustration tolerance was less stable than expected: he had to turn down therapy, because it was experienced as a threat to his (unconscious, omnipotent, inflated) self-image, which unfolded in the transference and countertransference of the therapy.

During psychotherapy, there were signs of premorbid character traits that interacted with acquired changes of affect regulation with an organic etiology. LP seems to have some core conflict themes concerning autonomy and intersubjectivity. A wish to be free to do what he wants contrasted with a feeling of impotence seems to have been there since his childhood, where he solved the conflict by “disappearing” for six months—that is, running away from home as a 17-year-old boy. In situations where he has ambivalent feelings, he is no longer able to decide to fulfill less pleasant or more difficult obligations. New challenges may be sufficiently motivating at first, but they soon become less interesting and more like “duties.” There seems to be a premorbid difficulty of sharing his feelings with others, both in childhood and in his marriage, where he still finds it difficult to empathize with his wife’s reasons for wanting a divorce. The ventromesial frontal lesions after the ruptured aneu-

Discussion

This case study illustrates the well-known difficulties of clinical neuropsychology to detect severe problems following frontal-lobe injury. None of the neuropsychological assessments administered showed any continuous deficits that might explain his real-life problems. The tests of cognitive and executive functioning have proved to be insufficient in detecting these behavioral problems, a finding consistent with earlier research.

Because problems following prefrontal lesions have frequently been described as emotional rather than cognitive, assessment of aspects of personality have been carried out. We have chosen to use both a questionnaire designed for brain-injured individuals (EBIQ) and a rating scale for the general assessment of personality aspects (KAPP), supplementing the information from these sources with a more specific questionnaire concerning the patient’s mental conflict-solving strategies (DSQ-40).

The EBIQ provided a picture of the patient’s experience of his problems, which were validated by his closest friend, who found them to be a little less severe than did the patient himself.
rysm seem to have enhanced this tendency to such a
degree that his sense of affectivity has almost been
lost, both in relation to things that used to please him
and in intersubjective relations. He is fully aware of
this, although he can only describe it as being put on
"stand by" when he "stops feeling." There may be two
aspects here: a dynamic one and an organic one. The
difficulties with feeling attached to objects—that is,
apointments with himself to get things done or with
other people—may be related to organic changes. At
the same time, the dynamics of wanting support and
admiration, feeling worthless and rejected and hence
criticizable, and finally feeling criticized, which is
lived out in therapy, demonstrates how premorbid
structures and object relations interplay with his cur-
cent situation. This has also made it impossible for him
to comply with the agreed-upon rules of the psycho-
analytic psychotherapy.

He spontaneously mentioned that he finds it diffi-
cult to remember and tell the story of his life after the
brain injury, and it is likewise impossible for him to
imagine himself in a future situation. This may reflect
aspects of poorly integrated subject-, affect-, and ob-
ject representations, which reveal themselves as a loss
of sense of continuity. In neuropsychology, this has
been identified in patients with prefrontal lesions and
term a loss of autonoetic awareness or temporal
integration of behavior (Fuster, 1997; Wheeler, Stuss,
& Tulving, 1997). Such considerations are, of course,
tentative and need further elaboration and discussion.

Our object has been to widen the scope in the
assessment and treatment of problems that may emerge
following orbitofrontal injury. Presenting a case as an
illustration, we find that some—but not all—of the
major difficulties of this patient are revealed through a
semi-structured personality interview resulting in a psy-
chodynamic profile. The patient appears cognitively
and emotionally relatively well-functioning at the
time of the interview. Only when going into further
detail concerning the processes leading to episodes of
"breakdown" in his life, as demonstrated in psycho-
therapy, are there possible signs of more primitive
mental functioning, which are revealed in the use of
low-level mental defenses.

We feel encouraged to continue working on making
reliable assessments of aspects of mental functions that
are integrated phenomena in brain-healthy, normal in-
dividuals, hoping that this article may inspire other
researchers within the field to take steps in this di-
rection. And we find it worth emphasizing, once again,
that the absence of significant test scores compared to
normative data does not necessarily imply absence of
severe, real-life problems.

APPENDIX A
Personality test battery

European Brain Injury Questionnaire (EBIQ)
( Teasdale et al., 1997). The EBIQ is a 63-item ques-
tionnaire regarding "problems or difficulties that peo-
ple sometimes experience in their lives" (p. 546) with
the response alternatives "not at all," "a little," or "a
lot," which are subsequently coded as 1, 2, and 3,
respectively. The questions are grouped into eight
scales and a "core" scale (see Figure 2) used as a mea-
sure of the level of restrictions in the patient's
quality of life. There is a "Brain-Injury Self" version
and a parallel "Brain-Injury Relative" version. The
parallel version elicits information about the patient's
awareness of his/her difficulties, which is an important
issue concerning the use of self-report questionnaires
with brain-injured individuals, especially those with
prefrontal and/or right-hemisphere damage.

Karolinska Psychodynamic Profile (KAPP). The
KAPP has eighteen subscales (see the brief description
of each in Appendix B), Scales 1 to 17 of which refer
to areas of the patient's mode of mental functioning as
they appear in self-perception and in interpersonal
relations, whereas Scale 18 refers to the patient's char-
acter organization. Each subscale has three defined
levels, although intermediate levels may be used, re-
sulting in a five-point ordinal scale: 1, 1.5, 2, 2.5, and
3: Level 1 represents "most normal," Level 3 "least
normal."

Defense Style Questionnaire (DSQ-40) (Andrews,
Singh, & Bond, 1993; Elklit, 1997; Pedersen & Elklit,
1998). The DSQ-40 is a 40-item questionnaire de-
signed to categorize defense styles as mature, neurotic,
and immature defenses.

APPENDIX B
The Karolinska Psychodynamic Profile
(KAPP) Subscales1 (Weinryb, Gustavsson, &
Barber, 1997)

Quality of interpersonal relations

1. Intimacy and reciprocity. Describes different
ways of relating to others—from relations charac-

1 All subscales are scored on a Likert scale from 1 to 3, with intermedi-
ate scores of 1.5, 2, and 2.5.
terized by intimacy, reciprocity, and consideration, to unilateral relations based upon selfish needs.

2. Dependency and separation. Describes different types of dependency—from relative independence, as a more adult form of dependency, to infantile dependency.

3. Controlling personality traits. Describes different ways in which the need for power and control may be expressed—ranging from mature and flexible attitudes, via covert and indirect bids for power or control, to less mature and more compulsively rigid forms made manifest in relations to both people and things.

Specific aspects of personality functioning

4. Frustration tolerance. Describes the capacity to endure the tension and displeasure arising from conflict between wishes felt to be essential and the internal or external limitations involved. This subscale describes different ways of responding to frustration—ranging from tolerance and coming to terms with it, via "reactive" modes of functioning (e.g., ego-restrictions), to manifest difficulty in enduring the disagreeable feelings it engenders.

5. Impulse control. Describes different ways of containing urgent affects, wishes, and needs of different kinds, and the way these are expressed in action—ranging from a mature balance between wishes and reality, via undue emphasis upon the dictates of reality at the cost of wishes, to manifest difficulty in taking reality into consideration in the pursuit of gratification.

6. Regression in the service of the ego. Describes the capacity to regress in the service of the ego—ranging from a satisfactory capacity to relinquish the reality principle temporarily, playfully, voluntarily, and under control, to manifest difficulty in doing so.

7. Coping with aggressive affects. This subscale ranges from adaptive and goal-directed attitudes, via nonadaptive inhibition of aggression, to impulsive and destructive expression.

Affect differentiation, with regard to both experience and expression

8. Alexithymic traits. This subscale ranges from good ability to identify, experience, and articulate variation in feelings and emotional states in a subtle and differentiated manner, to great difficulty in distinguishing between different feelings and sensations and in verbalizing them.

9. Normopathic traits. This subscale ranges from good ability to give active expression to personal and individualized needs and wishes, to an incapacity for such personal fantasies and, instead, clinging to social conventions or mores.

The importance attached to the body as a factor of self-esteem

10. Conceptions of bodily appearance and their significance for self-esteem. Assesses the individual’s more enduring conscious and unconscious conceptions of the appearance of the body and its significance for self-esteem.

11. Conceptions of bodily function and their significance for self-esteem. Assesses the individual’s more enduring conscious and unconscious conceptions of the function of the body and its significance for self-esteem.

12. Current body image. Assesses the individual’s current conceptions, conscious and unconscious, of his/her physical appearance and function, and their effect on his/her self-esteem.

Sexuality

13. Sexual functioning. Assesses the functional sexual capacity of the individual, with regard to sexual activity with a partner.

14. Sexual satisfaction. Assesses sexual interest, desire, and satisfaction in relation to a partner. The subscale is graded from an active attitude to sex toward greater inhibition and passivity.

The individual’s sense of his/her own social significance

15. Sense of belonging.


17. Access to advice and help.

These three subscales assess the individual’s capacity to relate socially, although it is the individual’s own
experience of this and not "objective" fact that is assessed.

Character as organization

18. Personality organization. Assesses the degree of differentiation and integration of internalized object relations, reality testing, and habitual defense strategies. The subscale is graded from neurotic over borderline to psychotic personality organization.

REFERENCES


