Symptom Validity (Effort) Testing in Clinical Neuropsychology - Dr Tracey Ryan-Morgan, Talis Consulting Limited

18/09/12. Effort testing became central to neuropsychological assessments due to the proven inability of the experienced clinician to detect individuals exerting sub-optimal effort (McCarter, Walton, Brooks & Powell, 2009). A range of taxonomies have developed over time in relation to the concept of "effort" :

1. Bush, Ruff, Troster, Barth, Koffler, Pliskin, Reynolds & Silver (2005, in their National Academy of Neuropsychology Position Paper) refer to the following definitions, which are adopted for the purposes of this paper:

- **Symptom validity**: the accuracy or truthfulness of the examinee's behavioural presentation (signs) self-reported symptoms (including their cause and course) or performance on neuropsychological measures.
- **Response bias**: an attempt to mislead the assessor through inaccurate or incomplete responses or effort.
- **Malingering**: the intentional production of false or exaggerated symptoms, motivated by external incentives.
- **Simulation**: the intentional misrepresentation or falsification of symptoms by over- or under-representation of a true set of symptoms in an attempt to appear dissimilar from one's true state.

2. The "Slick Criteria" (Slick, Sherman & Iverson, 1999)

This is a set of "diagnostic" descriptors which can be applied in an objective assessment of whether or not an individual is "malingering". Briefly, the four identified criteria are:

a. the presence of a substantial external incentive
b. evidence from neuropsychological functioning
c. evidence from patient self-report
d. behaviours from criteria B and C are not fully accountable for by known Psychiatric, Neurological or Developmental factors

3. A further useful taxonomy is referred to in the Non Epileptic Attack Disorder (NEAD) literature (Rankin, Adams & Jones, 1996) where the clinician's decision matrix specifies whether such activity is mediated by conscious or unconscious awareness and by conscious or unconscious control.

Professional practice exhibits the clinical neuropsychologist to routinely and without exception, assess for effort (British Psychological Society [B.P.S.] Professional Practice Board 2009, McCarter et al 2009, Iverson 2006a, Bush et al 2005, Slick, Tan, Strauss & Huttch 2004). However, the view that there should be routine administration of tests of effort is not shared by all. Brooks, McCarter, Walton & Powell (2010) found that many practising clinical neuropsychologists still do not routinely administer symptom validity tests, for various reasons (one of which is that just under a quarter of respondents, 22%, considered it "unnecessary".

There are both stand-alone tests (eg: Test Of Memory Malingering, Word Memory Test, Validity Indicator Profile and the less robust but widely-known Rey Fifteen Item Test, Lezak, Howieson, Bigler & Tranel, 2012) as well as embedded tests of effort which include:

- **Reliable Digit Span** on the Wechsler Adult Intelligence Scales III (Iverson & Tulskey, 2003);
- **Vocabulary minus Digit Span** on the Wechsler Adult Intelligence Scales III (Miller, Ryan, Camnathes & Cluff, 2004)
- **Rarely Missed Index** on the Wechsler Memory Scales III (West, Curtis, Greve & Bianchini, 2011);
- **Effort Index** on the Repeatable Battery for the Assessment of Neuropsychological Status (Silvemgberg, Wertheimer & Fichtenberg, 2007);
- **Time-to-completion performance on the traditional Trail Making Test** (Powell, Locke, Smigielas & McClea, 2011) and
- **A detectable pattern of atypcal performance on a battery of standard tests** (Lambbee, 2003)

It is advised that embedded measures should not be used as "sole measures" (B.P.S. 2009).

There are those that would argue that if a Neuropsychologist adopts a scientific approach to interpreting test results and if one looks for consistency and neuropsychological, biological or psychometric "sense" (Lambbee 2005, Iverson 2006b) then it is possible to arrive at a conclusion that does not contain clinical "bias" due, amongst other reasons, to the Clinical

### References

- Lezak, Howieson, Bigler & Tranel, 2012)
- Slick, Sherman & Iverson, 1999)
- Rankin, Adams & Jones, 1996)
- Silvemgberg, Wertheimer & Fichtenberg, 2007)
- Lambbee, 2003)
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Neuropsychologists' inadvertent errors in judgement (Heilbronner, 2008). It is also acknowledged that there are instances where effort testing might be contra-indicated (Dean, Victor, Boone & Arnold, 2008, B.P.S., 2009) as such tests can be "failed" for reasons other than poor effort. This includes, "learning disability, severe amnesia, moderate to severe dementia, severe sensory or physical disability, perceptual disorders, neurological, psychiatric or physical conditions where initiation or alertness is diminished or attention severely impaired" (B.P.S. 2009). However, the finding of Flaro, Green & Roberston (2007) that extremely low IQ does not lead to effort test failures, demonstrates the need to consider effort as a complex construct, rather than a binary one, and to focus on the probability of inadequate effort (Iverson, 2006a). Ruff (2006) refers to the false dichotomy between symptom validity and maligning. One should consider effort and response bias within the conceptual framework that is applied to inconsistencies in performance on psychometric testing.

There is a wide range of possibilities to consider when seeking to interpret neuropsychometric test data in the light of full collateral information:

1. It is clear that the individual being tested may have an erroneously impression of the skills that they once enjoyed (the "Good Old Days" hypothesis of Iverson. Lange, Brooks & Rennison 2009, refers) or a false belief in a higher former level of functioning which is not true such that, in reality, there may not be an appreciable change in functioning (on testing). This would represent, objectively, a non-existent decline in abilities and functions.

2. Similarly, the individual may have a skewed impression of how severe their reported symptomatology actually is. This would be relevant in terms of effort testing by reference to the "expectation as etiology" literature (Mittenberg, DiGuilio, Perri & Bass, 1992). This refers to the instances when an individual misattributes day-to-day difficulties to a prior illness or head injury (however mild or insignificant). This becomes the filter through which the individual "interprets" their symptoms such that patterns of belief and behaviour can become entrenched and resistant to intervention. Wood (2007) reports that, "what people know or believe about illness or injury will influence how they interpret bodily sensations. How a person attributes symptoms can determine how they will react to them" (p.552). Bryant (2011) comments that, "expectation that common sensations are signs of permanent dysfunction can result in hypervigilance to every sensation, followed by catastrophic attributions about the adverse consequences of the sensations" (p.4).

More importantly, in neuropsychometric testing, they may expect to perform poorly and fulfill those expectations, consciously or otherwise.

3. There is a related literature on "diasgressio领衔" (which is also relevant here (Suhr & Gunstad 2002, Suhr & Gunstad 2005). This posits that when attention is specifically drawn, by the tester, to the potential negative influence of an historic (mild) head injury, those individuals perform more poorly than expected on tests of memory, attention and processing speed even though they perform within normal limits on tests of effort.

4. It is possible that the clinician can be susceptible to bias in the presentation and interpretation of test data (Heilbronner, 2008) and cannot reliably, subjectively, detect sub-optimal effort (McCartier et al, 2009). Iverson (2006) confirms that the clinical neuropsychologist would need to make an inference as to "a person's underlying motivation or reasons for presumed poor effort". However, they may not, by inference alone, be in a position to detect or rule out all possible (external or internal) incentives to perform other than with optimum effort during assessment. Iverson (2012) relates that in a certain private healthcare facility, where patients pay out of their own pocket for neuropsychological evaluation, over a one-year period, there was 2.2% effort test failure rate. These patients had an external incentive to perform well as they were paying for their own evaluations. According to Flaro et al (2007) this is a counter-intuitive finding, although "external incentives to appear a certain way, either intact or impaired, have a strong motivating influence on presentation during cognitive evaluations" (p.386).

In addition, there is the consideration of an unexplained false positive effort test failure rate, where an individual who is genuinely exerting their best effort might still fail. This represents a measurement, rather than a performance, error.

5. Poor effort may exist, and be objectively measured during an assessment, but be due to factors outwith the control of the individual (Rankin et al, 1996) and therefore not amenable to change even upon challenge or exhortation to try their hardest such as in cases of psychopathology or personality change, (Rankin et al, 1996; McCarter et al 2009).

6. Bush et al (2005) raise the additional possibility that in certain cases, there may be cultural considerations which contribute to, or foster, an exaggeration or denial of symptoms "without any conscious or unconscious motivation to deceive". There is the possibility that the specific psychometric effort test being used in this circumstance may not have been validated for use with a minority culture and any use must therefore be justified by the administering Clinician.

Conclusions:

There are important considerations when exploring and measuring an individual's level of effort exerted during formal neuropsychometric assessments. The over-riding, and most pragmatic, approach is to ensure that the data and results "make biological sense" (Iverson, 2006b). It has been established that the subjective perceptions of (even) an experienced Clinical Neuropsychologist are subject to error.

It is essential to retain the perspective that neuropsychometric testing is but one aspect of a formal, comprehensive assessment. One draws upon observational data, interview information, collateral accounts, medical records and test data when seeking to explain an individual's neuropsychological presentation. Effort should always be considered as a critical element in this mix.

Those Clinical Neuropsychologists that do not routinely administer tests of effort will need to carefully observe their practice and may be called upon to justify their decision to disregard both professional guidance and published research evidence which directs one to objectively assess the validity of reported symptoms.

References:


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