



Behavioral Indicators of Adult Brain Damage: The Triad of Recklessness, Dysregulation and Inflexibility

Stephen Greenspan

Educational Psychology, University of Connecticut, Storrs, CT, USA

*Correspondence

Stephen Greenspan

Educational Psychology, University of Connecticut, Storrs, CT, USA

- Received Date: 01 May 2026
- Accepted Date: 09 May 2026
- Publication Date: 13 May 2026

Copyright

© 2026 Author. This is an open- access article distributed under the terms of the Creative Commons Attribution 4.0 International license.

Introduction

As a forensic psychologist who has consulted or testified in dozens of criminal (mostly death penalty) as well as civil (mostly service eligibility) cases, I typically get to examine reports by other experts. Very frequently, clear evidence of brain damage such as from FASD (Fetal Alcohol Spectrum Disorder, my speciality) is missed [1]. The three most likely explanations are: (a) a lack of training or knowledge involving FASD or other brain-based conditions [2], (b) neurological conditions often are difficult to discern, even by qualified medical professionals [3], and (c) there is a process called “diagnostic overshadowing” [4] where more salient symptoms (such as impulsivity or acting out behaviors) receive the bulk of attention, while less salient but more important underlying conditions go unrecognized. Diagnostic overshadowing occurs often with minority subjects whose behaviors tend to automatically be attributed to cultural processes [5].

Drawing from my own and others’ clinical experiences, but also from an extensive review of the relevant literature, I have identified three broad behavior patterns which, when they manifest in combination, suggest that the person in question may have a brain-based disorder. In this paper, I: (a) describe these deficiencies, which I term “the RDI triad” of brain damage indicators, (b) provide citations supporting the choice of domains, and (c) discuss how this model might prove clinically useful.

Although the triad applies to a wide range of neurological conditions, I mainly explore its applicability to FASD, a condition that is often missed, rather than to a condition such as TBI that is more typically identified (even when its significance is also often missed). Although the triad can be applied across the age span, my focus here is on brain damage in adults, in part because ongoing developmental processes in children make it more difficult to differentiate typical from atypical behaviors.

The RDI Triad: Recklessness, Dysregulation and Inflexibility

The three broad behavior categories which together comprise the RDI triad are recklessness, dysregulation and inflexibility. In this section I describe the components of each category and provide some empirical support for its inclusion. In a final section, I illustrate how the triad could be used in clinical contexts.

Recklessness

People with FASD or many other neurological conditions are notorious for imprudence in the face of physical or social risk [6]. In the physical domain this imprudence results in a high incidence of severe injury or death. As example, the life expectancy of those who have Fetal Alcohol Syndrome (the most severe of the three sub-types of FASD) is only 34 [7], which is extremely young for people with a non-progressive and non-lethal medical condition. Some of this is likely attributable to an increased rate of suicide in people with a history of failure in academic, vocational and relationship spheres [8]. But the main explanation likely is a higher incidence of risky physical behaviors [9] as well as risky social behaviors such as violent confrontations with dangerous opponents [10].

While the recklessness of people with FASD or other brain conditions is partly attributable to impulsivity or emotionality (the two components of the second triad domain, dysregulation), the main explanation is cognitive, namely the failure to recognize or give adequate weight to physical or social risk. In my book “Anatomy of Foolishness” [11], average risk-awareness is described as “common sense,” while the absence of this quality is termed “foolishness” and brain conditions (such as FASD) that cause habitual foolishness are termed “common sense deficit disorders.” The bulk of the attention to recklessness in brain-damaged adults has been on physical risk-taking that endangers both

Citation: Greenspan S. Behavioral Indicators of Adult Brain Damage: The Triad of Recklessness, Dysregulation and Inflexibility. *Neurol Neurosci.* 2026;7(2):051.

oneself as well as others (an example of the latter would be a brain-impaired roofing worker who was no longer allowed on roofs after several incidents when he tossed discarded materials close to where others were standing).

But unawareness of social risk, of which the main example is gullibility [12], can also endanger a brain-impaired person. A common manifestation of this, seen in several of my criminal cases, involves the ease with which a gullible offender could be talked into participating in a fatal assault on someone who they didn't even know [13].

Dysregulation

This behavioral domain is the one most likely to be noted by mental health professionals, but it is also, ironically, the one that is most likely, through the process of diagnostic overshadowing, to cause someone's underlying brain condition to be missed. There are two components to this domain: attentional dysregulation (which manifests in distractibility and impulsivity) and affective dysregulation (which manifests in an inability to maintain emotional self-control and a tendency to fly off the handle in an angry manner at the slightest provocation).

Support for attentional dysregulation as a nearly universal feature of brain disorder comes from the fact that overwhelmingly, the first diagnostic label assigned by educational or mental health professionals to someone with an as-yet undiagnosed brain condition is Attention Deficit Hyperactivity Disorder (ADHD) [14]. Much of the emphasis in the psychiatric literature is over the possibility, indeed likelihood, that the label is being over-assigned, especially in cases where symptoms are both mild and developmentally common [15]. In the case of FASD and other brain conditions where significant attentional difficulties are almost always present, the problem is not that ADHD is an inappropriate diagnosis, but rather that it does not tell the whole story.

The reason why attentional dysregulation is not the whole story for people with FASD or related brain damage conditions is because invariably they also have symptoms of emotional dysregulation as well [16]. The tendency within psychiatric and medical diagnosis to just focus on one area of dysfunction fails to take into account the fact that with brain injury the problem is one of general dysregulation, a problem that cuts across multiple modalities. For example, in my work as a forensic consultant in so-called Atkins v. Virginia proceedings (where a diagnosis of Intellectual Disability could get the death penalty taken off the table), a typical pattern, such as was seen with the Parkland Florida school shooter Nikolas Cruz [17], is for someone to start off with a diagnosis of ADHD and then as they get older receive a diagnosis of emotional disturbance (the opposite progression is also often observed). The problem is not that either diagnosis is inappropriate, but rather that the underlying phenomenon is one of general dysregulation which is not fully understood until the neural cause of such global dysregulation is finally uncovered.

Inflexibility

People with FASD and other brain conditions, even when their full-scale IQ scores are in the normal range, are invariably found to have deficiencies on measures of Executive Functioning (EF) [18]. Probably the central skill covered by the EF construct is cognitive flexibility, as seen in one's ability to shift perspectives and adapt to changed circumstances. (It should also be noted that another incompetence domain tapped by measures of EF is cause-effect reasoning, on which a poor performance helps to explain the risk-ignoring behaviors mentioned with regard to

recklessness).

The inflexibility of individuals who have FASD is reflected in the universality of comments along the lines of (a) "he keeps making the same mistakes over and over again" or (b) "she never seems to learn from experience." This manifests in cognitive tasks, where the same schemas continue to be used, even when they are no longer working. But this also manifests in everyday life, as in one death penalty clemency case I worked on, in which a neurologically impaired man was tried for a homicide he was tricked into performing. In the preceding years, he had a history of being arrested over and over again for breaking at night into the same drug store where police would invariably find him sitting on the floor drinking cough medicine [19].

In the behavioral domain, inflexibility manifests most commonly in perseveration, which is an inability to switch ideas or actions when they are no longer working or appropriate to a particular circumstance. Perseveration is an extremely common symptom of brain injury, and likely owes some of its frequency to the memory impairment that almost always results from brain damage [20]. Perseveration typically occurs in the context of verbal behavior [21], when a person makes the same comments over and over again. An example of perseveration occurred in the same clemency case cited above when the defendant was offered an unusually attractive plea deal if he was willing to testify against the man who ensnared him in a capital crime. The man's response to the prosecutor was "Jesus said not to testify against your fellow man." Despite being told it was the Ten Commandments, not Jesus, and it had to do only with "false witness," he made the same statement again, even after the trial at which he was sentenced to death. It was because this man was so obviously brain impaired (and unable to understand the consequences of his decisions) that both the prosecutor and the judge took the unusual step years later of petitioning the Governor to commute the death sentence just before it was to be carried out.

Clinical Applications of the RDI Triad

There are many psychiatric disorders, including some with an underlying neurological origin, where observed behavior patterns are as, if not more, important diagnostically than psychological or medical test scores [22]. In the case of a brain damage condition such as FASD (or TBI, for that matter) in the majority of cases there are typically no external, or for that matter internal, indicators, despite the widely-held incorrect belief that external physical or internal structural anomalies are always evident. As example, for the FASD subtype of Alcohol-Related Neurodevelopmental Disorder (ARND) which comprises up to 80% of FASD cases, facial anomalies are not evident. In such instances, behavior patterns, such as captured by the RDI triad, can be critical for reaching a correct diagnostic conclusion.

Several cautions should be kept in mind when considering the clinical utility of the RDI triad. The first caution is that currently the triad is used illustratively with qualitative data, and there likely is a need to develop a standardized method, such as a quantitative rating instrument analogous to a measure of "adaptive functioning," [23] administered to percipient witnesses such as a subject's family members or co-workers. A second caution is that few people with brain damage are likely to be equally incompetent in all areas of functioning [24]. Some research, therefore, is needed to establish the breadth and depth of behavior impairment needed to support the validity of the model as an indicator of brain damage. A third caution is

the need to keep in mind the possibility that external behavior patterns, no matter how suggestive they might be of deviant neurological processes, may in fact be a reflection of non-neural personality variation [25].

It is for this reason that RDI triad data would typically not be enough to make a specific diagnosis. In the case of ARND, for example, neuropsychological test scores (specifically, on measures of Executive Functioning and Adaptive Functioning) are needed, along with reliable evidence of prenatal maternal alcohol consumption. What the triad can do, especially when multiple impairments are found within several behavior domains, is to identify those individuals given a high incidence label (most typically, ADHD) who, because of a not-yet diagnosed brain condition may indeed be much more severely disabled than the label would indicate [26]. This, hopefully, would help to correct for the widespread failure of mental health practitioners to recognize when someone's dysfunctional behaviors may actually be the outward manifestation of an underlying brain condition.

References

- Chasnoff IJ, Wells AM, King L. Misdiagnosis and missed diagnoses in foster and adopted children with prenatal alcohol exposure. *Pediatrics*. 2015;135(2):264-270.
- Sbordone RJ, Rudd M. Can psychologists recognize neurological disorders in their patients? *J Clin Exp Neuropsychol*. 1986;8(3):285-291. doi:10.1080/01688638608401319
- Sharma B, Bradbury C, Mikulis D, Green R. Missed diagnosis of traumatic brain injury in patients with traumatic spinal cord injury. *J Rehabil Med*. 2014;46(4):370-373. doi:10.2340/16501977-1261
- Kanne S. Diagnostic overshadowing. In: *Encyclopedia of Autism Spectrum Disorders*. Springer; 2018. doi:10.1007/978-1-4614-6435-8_398-5
- Woods GH, Greenspan S, Agharkar B. Ethnic and cultural factors in identifying fetal alcohol spectrum disorders. *J Psychiatry Law*. 2011;39(1):1-22. doi:10.1177/009318531103900102
- Spohr H, Willms J, Steinhausen H. Fetal alcohol spectrum disorders in young adulthood. *J Pediatr*. 2007;150(2):175-179. doi:10.1016/j.jpeds.2006.11.044
- Thanh NX, Jonsson F. Life expectancy of people with fetal alcohol syndrome. *J Popul Ther Clin Pharmacol*. 2016;23(1):53-59.
- Erlangsen A, Stenager E, Conwell Y. Association between neurological disorders and death by suicide in Denmark. *JAMA*. 2020;323(5). doi:10.1001/jama.2019.21834
- Oh SS, Kim YJ, Jang SI, et al. Hospitalizations and mortality among patients with fetal alcohol spectrum disorders: A prospective study. *Sci Rep*. 2020;10:19512. doi:10.1038/s41598-020-76406-6
- Grafman J, Schwab K, Warden D, et al. Frontal lobe injuries, violence, and aggression: A report of the Vietnam Head Injury Study. *Neurology*. 1996;46(5):1231-1238. doi:10.1212/WNL.46.5.1231
- Greenspan S. *Anatomy of Foolishness: The Overlooked Problem of Risk-Unawareness*. Hamilton Books; 2019.
- Greenspan S. *Annals of Gullibility: Why We Get Duped and How to Prevent It*. Praeger; 2008.
- Brown J, Asp E, Carter MN, et al. Suggestibility and confabulation among individuals with fetal alcohol spectrum disorder: A review for criminal justice, forensic mental health, and legal interviewers. *Int J Law Psychiatry*. 2020;73.
- Danielson ML, Claussen AH, Bitsko RH, et al. ADHD prevalence among US children and adolescents in 2022: Diagnosis, severity, co-occurring disorders and treatment. *J Clin Child Adolesc Psychol*. 2024;53(3):343-360. doi:10.1080/15374416.2024.2335625
- Paris J, Bhat V, Thombs B. Is adult attention-deficit hyperactivity disorder being overdiagnosed? *Can J Psychiatry*. 2015;60(7):324-328. doi:10.1177/070674371506000705
- Grant JE, Chamberlain SR. Attentional problems occur across multiple psychiatric disorders and are not specific for ADHD. *CNS Spectr*. 2023;28(3):357-360. doi:10.1017/S1092852922000785
- Brown NN, Greenspan S, Steele K. *The Parkland School Shooter: Culpability and FASD*. Springer; 2024.
- Kingdon D, Cardoso C, McGrath J. Executive function deficits in FASD and ADHD: A meta-analysis. *J Child Psychol Psychiatry*. 2016;57:116-131.
- Johnson A. Kasich cancels death sentence. *The Columbus Dispatch*. July 11, 2012.
- Razak LHA, Denis T, Murugiah Y, et al. The effect of traumatic brain injury on memory. *Malays J Med Sci*. 2024;31(3):52-74. doi:10.21315/mjms2024.31.3.4
- Hotz G, Helm-Estabrooks N. Perseveration. Part I: A review. *Brain Inj*. 1995;9(2):151-159.
- Fakhoury M, Fritz M. *Neurobiology of behavior: Influences of neuropsychiatric disorders on neurobiology and behavior*. Biology (Basel). 2023;12(6):807. doi:10.3390/biology12060807
- Edwards WJ, Greenspan S. Adaptive behavior, alcohol spectrum and fetal disorders. *J Psychiatry Law*. 2010;38:419-447.
- Sorg SF, Merritt VC, Clark AL, et al. Elevated intra-individual variability in executive functions and associations with white matter microstructure in veterans with mild traumatic brain injury. *J Int Neuropsychol Soc*. 2021;27(4):305-314. doi:10.1017/S1355617720000879
- Cheli S, Brüne M. When do personality traits become pathological? In: Banicki K, Zachar P, eds. *Conceptualizing Personality Disorders: Perspectives From Philosophy, Psychological Science and Psychiatry*. Cambridge University Press; 2025.
- Greenspan S, Brown NN, Edwards W. Determining disability severity level for FASD: Assessing extent of impairment of individuals and conditions. In: Brown NN, ed. *FASD: A Guide for Forensic Mental Health Assessment*. Springer; 2024.