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Diminished culpability in fetal alcohol spectrum disorders (FASD)

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Abstract

There is a biological basis for diminished criminal responsibility in offenders with fetal alcohol spectrum disorders (FASD) just as there is in those with intellectual disability. Functional limitations affecting cognition in both neurodevelopmental conditions stem directly from structural brain damage at a gross and molecular level, which usually impairs executive functioning among other cognitive skills. Executive functioning, which includes reasoning and impulse control, is the only neural system in the brain that involves *conscious* thought. With respect to the law, impaired reasoning or rationality is an aspect of *mens rea* (“guilty mind”). When rationality is impaired by prenatal alcohol exposure, acts driven by strong emotion and urges can occur, which has obvious implications regarding criminal responsibility. The *Atkins* decision by the U.S. Supreme Court reflects the rationale that organically based brain dysfunction in executive skills reduces criminal culpability. We argue that people with FASD who have similar brain dysfunction likewise have reduced criminal responsibility.

KEYWORDS

culpability, executive dysfunction, FASD, fetal alcohol spectrum disorder, ID-equivalence, intellectual disability

1 | INTRODUCTION

Generally, criminal responsibility grounded in concepts of societal morality¹ may be conceptualized as being present when material acts are committed with knowledge (Mela & Luther, 2013). The basic principle here is twofold: a person accused of committing a crime must be “blameworthy in mind” and “wrongdoing must be conscious to be criminal”

(*Morissette v. United States*, 1952, p. 252). Retributive concepts of justice dictate that a sentence for any crime not only be proportionate to the gravity of the offense but also proportionate to the offender's degree of responsibility (Roach & Bailey, 2009). For example, with respect to capital punishment, the U.S. Supreme Court explained in *Kansas v. Marsh* (2006) that this penalty must be limited to the narrow class of persons whose extreme culpability made them the most deserving of execution, that is, *the worst of the worst*. The Court further indicated that in order to be the "worst," defendants must be the most culpable of offenders.

Under the "evolving standards of decency" test, the Court in *Atkins v. Virginia* (2004) held that executing defendants with intellectual disability (ID) constituted cruel and unusual punishment prohibited by the Eighth Amendment. Consequently, the death penalty for such defendants would not measurably advance deterrent or retributive purposes. Citing the growing number of states prohibiting execution of persons with ID as a reflection of society's view that this class of offenders was categorically less culpable than the average criminal, the *Atkins* ruling rested on two underpinnings: (1) because of their disabilities in reasoning, judgment, and impulse control (i.e., all aspects of executive functioning), people with ID did not act with the level of moral culpability that characterized the most serious criminal conduct and (2) this class of offender was at greater risk of making false confessions and had less ability to make a persuasive showing of mitigation in the face of prosecutorial evidence of aggravating factors. The *Atkins* Court elaborated further on the disabilities afflicting people with ID, noting that this class of defendants had diminished capacity to understand and process information, communicate, abstract from mistakes and learn from experience, engage in logical reasoning, control impulses, and understand the reactions of others. The Court further indicated that there was abundant evidence that persons with ID often acted on impulse and tended to be followers in social groups rather than leaders.

It is our proposition that defendants with fetal alcohol spectrum disorders (FASD) are no different than those with ID in terms of executive and adaptive functioning and thus merit similar consideration with regard to criminal culpability. That is, debilitating brain damage in FASD can substantially compromise capacity to make rational choices and control impulses just as it does in ID, principally through deficits that impair cognitive flexibility and fluency (e.g., considering options), planning (e.g., considering consequences), reasoning (weighing options in the context of consequences), strategy use (behavior choice), and impulse control. Central to the executive dysfunction seen in both disorders is *risk-unawareness* or inability to recognize and avoid risk (i.e., lack of common sense). Because of risk-unawareness, people with FASD, like those with ID, are at high risk of engaging in foolish (i.e., risk-unaware) acts that may involve crime (Greenspan et al., 2011).

2 | FASD AND ID

Prenatal alcohol exposure (PAE) is known as the leading preventable cause of ID (Williams & Smith, 2015). However, only a relatively small percentage of persons with FASD meet IQ criteria for ID (Popova et al., 2016; Streissguth et al., 1996; Weyrauch et al., 2017), which requires a full-scale IQ of 75 or below under diagnostic criteria in DSM-5 and the American Association of Intellectual and Developmental Disabilities. IQs in FASD typically fall in the low average to borderline ranges (Kodituwakku, 2009), with some IQs seen in the high average and superior ranges (Streissguth et al., 1996; Weyrauch et al., 2017). Despite significantly higher IQs on average in FASD compared to ID, people with FASD tend to function as if they had ID in terms of everyday adaptive behavior (Doyle et al., 2019; Greenspan et al., 2016; Streissguth et al., 1991, 2004). The reason for this anomaly is executive dysfunction, which directly predicts impaired adaptive behavior in FASD (Schonfeld et al., 2006; Ware et al., 2012). That is, although FASD is associated with widespread brain damage, it is executive functioning that most determines developmental outcomes in this population and makes this class of defendant functionally indistinguishable from persons with ID (Greenspan et al., 2016, in press). Moreover, not only are people with FASD born with pervasive brain damage, postnatal brain maturation in FASD is substantially delayed during the childhood years (Treit et al., 2014), which tends to arrest de-

velopment to a degree greater than is seen in ID (Mattson et al., 2011; Novick Brown & Reynolds, in press; Thomas et al., 1998).

Central nervous system dysfunction (i.e., brain damage) in FASD is diagnosed in DSM-5 as *neurodevelopmental disorder associated with prenatal alcohol exposure (ND-PAE)*. The umbrella term “FASD” includes ND-PAE as well as several medical conditions that may be caused by PAE, such as fetal alcohol syndrome (FAS), partial FAS (pFAS), and alcohol related neurodevelopmental disorder (ARND). By designating ND-PAE as the mental health diagnosis for FASD regardless of physical dysmorphology (i.e., facial abnormalities and growth deficits seen in FAS), DSM-5 recognizes that there is no consistent difference in scope or degree of brain damage among the various FASD medical conditions (Connor et al., 2000; Kodituwakku et al., 2001; Mattson et al., 1998, 2011). In legal terminology, an ND-PAE diagnosis constitutes a “mental defect,” whereas diagnoses of FAS, pFAS, or ARND are “medical defects.”

As shown in Figure 1, diagnostic criteria for ND-PAE are nearly identical to criteria for ID with the exception of deficient IQ in ID and a diagnostic criterion unique to ND-PAE that makes this disorder more severe than ID: self-regulation impairments (i.e., executive dysfunction).

Although DSM-5 lists specific executive function (EF) impairments typically seen in ID (i.e., reasoning, problem solving, planning, abstract thinking, judgment, academic learning, and learning from experience), EF impairments in ND-PAE include these impairments and more. Besides requiring one or more EF impairments within a broad Neurocognitive domain, ND-PAE also requires at least one EF impairment that affects self-regulation (i.e., control of mood/behavior, attention, and/or impulses). Thus, based on cognitive criteria alone, it might be said that ND-PAE is just as severe as ID (i.e., less severe in terms of IQ but more severe in terms of EF). With respect to adaptive functioning, there is a modest difference between the two disorders: two impaired adaptive domains (e.g., communication, practical, social, and/or motor skills) are required in ND-PAE, while only one is required in ID, making ND-PAE somewhat more severe than ID in terms of everyday adaptive impairments. Both ID and ND-PAE require developmental onset.

ARND, the most common medical condition under the FASD umbrella, tends to be an *invisible* diagnosis on first impression for several reasons, including (1) absence of the visible physical characteristics seen in FAS (i.e., facial abnormalities and growth deficits), (2) IQs that generally fall in the average to low-average range, and (3) superficial chattiness, all of which mask underlying cognitive dysfunction. Because of its relative invisibility, most children with ARND are either misdiagnosed or never diagnosed (Popova et al., 2020) and as these children grow older, their self-regulation problems, and learning difficulties tend to be increasingly misconstrued as intentional acts rather than

DSM-5 Diagnostic Criteria

ID	ND-PAE
INTELLECTUAL (IQ \leq 75)	INTELLECTUAL (not required)
EXECUTIVE FUNCTIONING LEARNING	At least 1: EXECUTIVE FUNCTIONING LEARNING MEMORY VISUAL-SPATIAL FUNCTIONING
SELF-REGULATION (not required)	SELF-REGULATION (at least 1: mood & behavior, attention, and/or impulse control)
ADAPTIVE FUNCTIONING (at least 1: communication, practical, or social skills)	ADAPTIVE FUNCTIONING (at least 2: communication, practical, social, or motor skills)
DEVELOPMENTAL ONSET	DEVELOPMENTAL ONSET

FIGURE 1 Similarity between DSM-5 diagnostic criteria for ID and neurodevelopmental disorder associated with prenatal alcohol exposure

the product of brain-based dysfunction. This dynamic has far-reaching implications in the legal context where criminal conduct in FASD has been found to be 30 times higher than in the general population (Popova et al., 2017). In court, misperception that behavior in FASD stemmed from conscious, intentional behavior can be particularly calamitous with respect to determining degree of criminal responsibility.

EF is the only neurological process in the brain that involves conscious cognition. Therefore, EF is directly relevant to the internal or mental elements underlying offense behavior and corresponding criminal culpability because legal requirements in *mens rea* require that a defendant committed a charged offense (*actus reus*) either purposefully (i.e., with an underlying conscious goal to act) or knowingly (i.e., with practical certainty that the conduct would cause a particular result).² The majority opinion in *Atkins* noted two relevant capacity-reducing characteristics in people with ID: reduced ability for rationality (i.e., logical reasoning), which results in inability to reflect on one's own behavior, and reduced ability for behavior control, which increases impulsivity. Because of these two limitations, the Court believed that people with ID were unable to benefit from two purposes of capital punishment: understanding why they were being punished and deterrence from future misconduct.

Thinking rationally and controlling impulses are complex EF skills. Capacity to reason involves abstract multi-tasking that includes perceiving events in a current situation, retrieving relevant memories, troubleshooting potential action by foreseeing possible consequences, linking cause-and-effect, and making a "go" versus "no go" decision—all while controlling inappropriate emotion and urges. In an intact brain, impulse control occurs simultaneously with reasoning, which allows the thinking process to conclude prior to acting. However, reasoning and impulse control are usually impaired in people with FASD (Kodituwakku & Kodituwakku, 2014; Mattson et al., 2011) just as in ID. Therefore, anything that further complicates the decision-making process or burdens the process of impulse control (e.g., environmental distraction/influence, strong interference from the amygdala/limbic system) is likely to significantly erode baseline functioning (e.g., functional abilities assessed during highly structured neuropsychological testing). While people with FASD usually have little difficulty with simple cognitive tasks in real life as well as in neuropsychological testing, they often exhibit significant impairments in complex tasks requiring interhemispheric transfer of information and rapid data manipulation, which involve mental effort (Burden et al., 2005; Jacobson et al., 2011; Kingdon et al., 2016; Kodituwakku, 2009). Novel situations are particularly problematic for people with FASD as there are no automatic psychological processes (e.g., motor memories) to rely on that have been repetitively practiced and learned (Kodituwakku, 2009; Novick Brown, 2019).

Thus, if cognitive impairments include executive processing (or if executive processes must work with impaired neural information from brain regions beyond the prefrontal cortex), events will seem disconnected, with everything experienced as brand new. For example, retrieving relevant memories to begin the reasoning process requires mental effort as the process relies on interhemispheric transfer of information stored in brain regions outside the frontal lobes. Such mental effort is thought to contribute to the memory variability often seen in FASD (Ali et al., 2017; Duplooy et al., 2016). Thus, information may be learned, stored, and retained for a short period of time, only to disappear without warning and then reappear suddenly again—hours, days, or weeks later—with no predictability or pattern to the phenomenon (Streissguth et al., 1998). If relevant memories *are* retrieved, they then must be integrated and synthesized with immediate information from the current context—an executive process called "working memory," which requires considerable mental effort. Troubleshooting, a complicated aspect of the working memory process, requires multiple abstract steps (i.e., more mental effort): (1) developing a goal (intention) based on behavior that is likely to succeed in the present situation because a retained and retrieved memory indicates that it has succeeded in the past, (2) analyzing (i.e., comparing and contrasting) how the current situation might be different from past experiences, and (c) foreseeing potential consequences based on contextual information (i.e., cause-and-effect reasoning). All three steps in this troubleshooting process require highly complex and effortful processes that must occur simultaneously with impulse control (another executive skill) prior to making a go/no-go decision.

Contextual factors (e.g., ambiguity, unpredictability, distraction, social influence, time or performance pressure) can increase task complexity (i.e., number of simultaneous cognitive demands during the reasoning process) and requisite mental effort. Meanwhile, mental state factors such as stress, anger, or frustration may derail the reasoning pro-

cess, allowing strong but unconscious urges from the amygdala to override executive processing and impulse control (Hellemens et al., 2008; Kodituwakku & Kodituwakku, 2014; Kodituwakku et al., 2001). Simply put, the need to make independent decisions in complex situations while simultaneously dealing with strong impulses and emotions requires effectively handling multiple abstract cognitive processes simultaneously, which is well beyond the biological capacity of those with FASD (Greenspan et al., 2016; Kodituwakku, 2009; Novick Brown, 2019).

3 | COMPLEXITY-BASED FUNCTIONING

Research has found convincing support for a generalized information processing/integration deficit in FASD that is dependent on mental effort (Kodituwakku, 2009). For example, Green et al. (2009) found that as neuropsychological tasks requiring planning and working memory increased in complexity, thereby requiring more cognitive effort, children with FASD showed significantly greater impairment compared to controls. In a study that directly challenged the concept of the generalized processing/integration deficit, researchers (Aragon et al., 2008) organized a neuropsychological test battery on the basis of simple versus complex processing and administered the measures to two groups of children: those with FASD and neurotypical children. Results indicated that children with FASD showed significantly poorer performance than controls on measures involving complex planning and logic. In a similar study that examined whether the information processing/integration deficit applied to children with FASD who were not intellectually disabled, results supported the information processing/integration deficit. Specifically, the FASD group exhibited significantly poorer scores than the nonexposed control group on every construct assessed on the basis of complexity, including tasks of EF, attention, visuospatial and working memory, linguistic abstraction, adaptive behavior, emotional/behavioral functioning, and social cognition (Quattlebaum & O'Connor, 2013). In other words, results consistently supported the information processing/integration deficit in higher functioning children with FASD. Within the FASD group, there were no significant functional differences based on IQ or diagnostic subtype.

Thus, convergent research generally indicates that while people with FASD can learn and perform relatively simple tasks adequately with repetitive practice, they are unable to think quickly and appropriately when left to their own devices in complex contexts requiring significant EF involvement. Moreover, if there are mental state factors that further impair executive control, this population does not have the cognitive ability to tune out, modulate, and overcome strong negative emotions and urges from the amygdala/limbic system, which can override the EF system to hijack behavior control.

Just as executive dysfunction impairs behavior in important adaptive domains throughout life for those with FASD, such dysfunction also can explain the high rate of violence and other adverse outcomes in this population (Khoury et al., 2015; Streissguth et al., 1996, 2004). While environmental structure (sometimes referred to in FASD as the “external brain”) can compensate for EF deficits to reduce risk of violence (Doctor, 2000; Kapasi et al., 2021; Novick Brown, in press; Novick Brown & Connor, 2014; Pedruzzi et al., 2021), it has been our experience in capital cases that violent acts in people with FASD often reflect a breakdown in baseline executive capacity due to contextual complexity. In other words, those with FASD have the ability to plan, form intentions, and make choices, but the *quality* of their planning, intentionality, and choosing in fraught social situations is likely to reflect impaired executive control due directly to brain damage.

4 | ADAPTIVE DYSFUNCTION

Just as executive dysfunction is a defining cognitive impairment in FASD, adaptive dysfunction is a defining behavioral feature, regardless of age or IQ. The first evidence of an IQ/adaptive function “disconnect” was found 3 decades ago in a research study (Streissguth et al., 1991) that examined intellectual, academic, and adaptive functioning in adolescents and adults with FAS and non-dysmorphic FASD [referred to as Fetal Alcohol Effects (FAE) at the time and

now called ARND]. Average IQ score for the combined FAE/ARND group in this study fell in the borderline range (i.e., 73), but average adaptive age-equivalence score was equivalent to seven years old, which the researchers noted was “surprisingly low, especially as (these individuals) often appeared alert and verbal on clinical examination” (p. 1966). EF deficits (i.e., attention control, judgment, comprehension, and abstraction) were the most frequently reported behavior problems in this sample.

Expanding on these early results, a much larger study in the mid-1990s sponsored by the Centers for Disease Control (Streissguth et al., 1996) provided a vivid understanding of the range and severity of adverse developmental outcomes in FASD. The study examined cognitive and adaptive deficits in FASD (i.e., “primary disabilities”) and adverse developmental outcomes (“secondary disabilities”) in a sample of 473 children, adolescents, and adults with FASD, 178 diagnosed with FAS and 295 diagnosed with FAE (i.e., ARND). Full-scale IQs (often with significant discrepancies between verbal and nonverbal IQ scores) ranged from 29 to 120 in FAS (average IQ = 79) and 42 to 142 in FAE/ARND (average IQ = 90). Only 16% of the entire study group had ID (27% of those with FAS and 9% of those with FAE/ARND). Academic abilities fell significantly below IQ level in both groups, but adaptive functioning fell 1.0–1.5 standard deviations below IQ. Secondary disabilities included mental health problems (94% of the full sample), disrupted school experience (70% of the full sample), trouble with the law (14% of children ages 6–11 and approximately 60% of adolescents and adults), confinement (50% of the full sample, which included incarceration, psychiatric hospitalization, and inpatient treatment), and sexually inappropriate behavior (45% of adolescents and 65% of adult males with ARND). Of the participants in the secondary disabilities study who had trouble with the law, nearly 70% of those with FAE/ARND had criminal histories involving crimes against persons and over 20% had histories of sexual crimes (23% of these sex crimes involved sexual advances/assault). Crimes against persons included assault and murder (17%), burglary (15%), and domestic violence (15%). Substance abuse was a significant risk factor for trouble with the law: of adolescents and adults with substance abuse problems, nearly 85% had arrest histories. Since the secondary disabilities study, other studies have found similar results, albeit with some variability (Burd et al., 2007; Clark et al., 2004; Popova et al., 2011; Rangmar et al., 2015; Spohr et al., 2007; Streissguth et al., 2004; Temple et al., 2011).

The sizable IQ-adaptive functioning discrepancy in FASD is another reason why this population tends to be invisible in the legal context unless evaluated and diagnosed appropriately. All too often, forensic neuropsychological assessment is insufficient to detect FASD. For example, unless ID is suspected, comprehensive test batteries typically do not include standardized adaptive assessment, which is essential for determining how cognitive impairments manifest in the everyday world, or specific tests that have been found in the research to be sensitive to the effects of prenatal alcohol exposure (Connor, in press; Novick Brown et al., 2010). Due to intermittent exposure in utero corresponding to the birth mother’s pattern of alcohol consumption, some areas of the brain may be spared in the midst of generalized brain damage that has significant functional effects on high-level executive control in novel situations (Kodituwakku, 2009; Wyper & Pei, 2016). Thus, to accurately interpret test results for individuals with FASD, it is essential to appreciate the association between EF and adaptive functioning and real-world implications of complexity-based discrepancies in test scores. It also is important to know that discrepancies in test scores are emblematic of FASD (Novick Brown & Reynolds, in press). For example, while full-scale IQ might fall in the average range, significant within- or between-test discrepancies in subtest scores on IQ, EF, or memory tests could indicate cognitive processing difficulties based on task complexity. Unfortunately, most mental health professionals working in the forensic field today do not have formal training in FASD (Chudley et al., 2005) and therefore do not understand the diagnostic significance of such things as the “IQ/adaptive functioning disconnect” and similar discrepancies.

5 | GULLIBILITY AND RISK-UNAWARENESS

As mentioned earlier, the *Atkins* decision noted that reduced “rationality” was one of two reasons (the other being impulsivity) why offenders with ID should not be executed. Although rationality is a widely used term in the law and psychology, like many such terms it is not well-defined. Aspects of rationality that usually *are* mentioned in the forensic

context involve (1) use of logical reasoning and (2) extent to which one's beliefs or actions are in touch with reality (Nozick, 1993). It may be argued that this latter aspect, reality grounding, is best understood in terms of awareness of social or non-social risks or dangers in a proposed course of action (Greenspan, 2019). The connection between risk unawareness and criminal responsibility is evident in the widely cited definition of "crime" by British legal philosopher H. L. A. Hart (1968), which is paraphrased as follows: a crime involves volitional body movements that put at risk a legally protected interest. The two key components here when discussing culpability reduction for people with ID and FASD are "volitional" and "risk." Volitional behavior is an act that is consciously and intentionally chosen, while risk involves a criminally sanctioned outcome because the act violates some person's or entity's legally protected interest (e.g., preservation of life or wealth). Thus, if a defendant has brain-based impairments in reasoning or other aspects of EF that affect capacity to choose, then it stands to reason that the person should be fully or partially exempt from criminal responsibility.

It is now understood that brain maldevelopment can increase the likelihood of criminal conduct by producing core impairments in EF-related cognitive processes such as rationality and impulse control (Denno, 2015). Impaired executive processing can diminish common sense in FASD just as it does in ID, which has direct implications with respect to reduced criminal culpability (Batts, 2009). Surviving the practical and social pitfalls of the everyday world requires *intact* common sense (i.e., ability to recognize obvious risk), but because people with FASD and ID lack ability to recognize and avoid risk, they are at high risk of engaging in foolish (i.e., risk-unaware) acts that may lead to crime (Greenspan et al., 2011; Greenspan & Woods, 2018). For example, because of risk unawareness, people with FASD tend to be suggestible and gullible (Brintnell et al., 2011; Greenspan, 2019; Greenspan & Woods, 2018; Novick Brown et al., 2011) and likely to give in to social pressure from more competent "ringleader" peers who ensnare them into criminal schemes for which they may have little motivation or understanding. In fact, social vulnerability in offenders with ID was one of the reasons cited by Justice Stevens for taking the death penalty off the table in the *Atkins* opinion.

While gullibility due to impaired reasoning warrants reduced culpability for offenders with FASD who commit crimes with co-defendants, it should be appreciated that persons with FASD also may commit foolish acts on their own. Foolish action is risk-unaware behavior that has a high likelihood of backfiring because of failure to recognize or give sufficient weight to potential practical (i.e., physical) or social consequences (Greenspan, 2008, 2009). At times and for a variety of contextual reasons, neurotypical individuals may be risk-unaware and engage in foolish action due to lapses in judgment. In contrast, people with ID and FASD typically lack the biological capacity to be risk-aware under any circumstances due to EF impairments. For these individuals, foolish action in the social context may be either "induced" by others, producing gullibility in response to false information or encouragement, or noninduced recklessness. In both cases, foolish action stems from risk unawareness, which in FASD is due directly to impaired reasoning and impulse control (Greenspan, 1998, 2008, 2019; Greenspan et al., 2001, in press). Risk unawareness in the felony context can lead to foolish action that results in dangerous physical consequences, such as death or serious injury to another person. As shown in the research (e.g., Streissguth et al., 1988, 2004), many people with FASD as well as ID are at high risk of engaging in foolish action because they lack executive capacity to understand cause-and-effect associations and associated risk-awareness (Greenspan, 2008, 2016).

6 | SOCIAL VULNERABILITY AND RESPONSE BIAS

The *Atkins* Court described additional factors in ID that apply equally to FASD. For example, people with ID were said to be socially vulnerable, as reflected in the ease with which they could be manipulated by codefendants into committing crimes and manipulated by interrogators into waiving rights and giving unwilling or false confessions. There is a robust literature indicating that people with FASD also are socially vulnerable and at high risk of exploitation. For example, in a study of 62 young adults with FASD, 92% were described by caregivers as vulnerable to manipulation (Clark et al., 2004). Another study of 60 adults with FASD found that according to caregivers, 76% had fallen victim to criminal acts or exploitation and abuse (Freunsch & Feldmann, 2011). Although a quarter of this sample

had no friends, those who did have friends were described as having few friends (21%), younger or intellectually disabled friends (15%), or dysfunctional contacts (10%). Many were described as easily exploited (e.g., naïve lookouts for gang activity). Interactions with “friends” typically were described as contrary to their interests (i.e., easily talked into things, influenced, or abused). Of the nearly half who had been directly victimized by others’ criminal acts, 80% were exploited by friends, spouses, and partners (e.g., giving away money upon request or making agreements/contracts without understanding their content).

The Atkins Court noted that because of their cognitive limitations, defendants with ID were considered less able to evaluate and enter into plea deals that could have the effect of taking death “off the table.” The same reasoning limitations apply to FASD. Because this population has considerable difficulty analyzing choices and possible outcomes, which requires complex abstract thinking, they tend to rely on others for direction, which may explain much of their gullibility, suggestibility, and risk-unawareness during the adjudication process (Fast et al., 1999; Greenspan & Driscoll, 2015; Greenspan et al., 2016; Kully-Martens et al., 2012; Novick Brown et al., 2011, 2015; Pollard et al., 2004). These characteristics have direct implications for all decision-making that defendants with FASD must do in the legal context (e.g., rights waiver, competency to stand trial, consulting with counsel).

Another significant problem for those with FASD as well as ID is acquiescence bias or tendency to agree with statements or answer yes/no questions with “yes.” A tendency to acquiesce is a type of response bias that involves impulsively responding in an agreeable manner without assessing the content of questions or “true” preferences. A large body of research has found that acquiescence and other response biases are associated with ID (Emerson et al., 2013; Finlay & Lyons, 2001; Heal & Sigelman, 1995) and can be induced by a variety of contextual cues such as the phrasing of questions, demeanor of the questioner, setting, or interviewee’s desire to be viewed positively (Furnham, 1986; Knowles & Nathan, 1997). Like those with ID (e.g., Heal & Sigelman, 1995), people with FASD tend to be especially agreeable in the presence of authority figures (Greenspan & Driscoll, 2015; Novick Brown et al., 2010, 2011), even to the point of adopting and embellishing on an interviewer’s viewpoint (Greenspan & Driscoll, 2015). Research generally finds that acquiescence bias stems in part from a desire to please authority figures and/or mask disability (Course et al., 2001; Heal & Sigelman, 1995; Rogal, 2017). Similarly in FASD, desire to please others in order to fit in (a maladaptive outcome stemming from social skill deficits) often is a factor in criminal conduct involving codefendants (Streissguth & Kanter, 1997).

Acquiescence bias is particularly problematic during the adjudication process, beginning with arrest when suspects with FASD tend to state rather convincingly that they understand their legal rights even when they do not (Fast et al., 1999). During forensic evaluation, acquiescence bias can have a profound impact on self-report accuracy in questionnaires and inventories as well as interviews. For example, Mullally, McLachlan, MacKillip, and Pei (2020) compared the validity of 10 commonly used performance validity tests (PVTs) in 80 justice-involved adults, 25 with confirmed or possible FASD, and 55 where FASD was ruled out. Results indicated that compared to neurotypical participants, those with diagnosed and possible FASD were more likely to fail any single PVT and failed a greater number of PVTs. Across both groups, 90% of individuals with IQs <70 failed two or more PVTs compared to 44% of those with IQs ≥70.

In addition to acquiescence bias, related response biases common in ID and FASD include suggestibility and confabulation. Suggestibility, a tendency to accept and act on messages communicated by others, is associated with confabulation, or filling in memory gaps with false information provided by others with no motivation to deceive. People with ID tend to exhibit both response biases (Gudjonsson & Clare, 1995) as do people with FASD (Gibbard et al., 2003; Novick Brown et al., 2011). In both disorders, suggestibility and confabulation are thought to arise in large part from memory problems and EF deficits as well as gullibility and desire to be viewed favorably (Griego et al., 2019; Novick Brown et al., 2011). For example, studies that assess caregivers’ observations of children, adolescents, and adults with FASD (Domeij et al., 2018; McDougall et al., 2020; Streissguth et al., 1998) identify a number of relevant behavioral characteristics:

1. too easily led by others,

2. deficient risk perception (“does not foresee potential danger”),
3. impulsivity,
4. unaware of the consequences of behavior,
5. forgets previously learned information,
6. indiscriminately friendly,
7. superficially communicative (“chatty”),
8. talks about unrealistic/fantastical subjects,
9. exaggerates to impress,
10. tries hard and wants to please, and
11. misses social cues and fine points or subtleties in communication.

As is evident from the list above, suggestibility and confabulation may be associated with a number of related adaptive behaviors that can affect social interactions in FASD.

Importantly, many of the same factors that impair rationality and impulse control at the time of offense conduct apply as well to the adjudication process. That is, just as cognitive impairments impair thoughts and behavior during criminal conduct, the same impairments can affect thinking, communication, and decision making throughout the legal process (e.g., answering questions posed in court, working with defense counsel, plea bargains). For example, during police questioning, confabulation due to inability to recall and report past events in a logical, rational, and sequential manner can inadvertently reduce self-report accuracy, which may be interpreted as intentional deceit. Even if offense-relevant information has been successfully stored, a need to access that information requires intact cause-and-effect reasoning and ability to make logical inferences about memories that are relevant to the offense. Notably, research shows that because of the widespread cognitive dysfunction in FASD, this population generally exhibits high rates of impairment on standardized testing of legal capacities relevant to interrogation and adjudication (Mullaly et al., 2020). For example, a study that addressed psycholegal abilities in young offenders with FASD (McLachlan et al., 2014) found that 90% of the study population showed impairment in at least one psycholegal ability. In particular, on a structured measure of competency to stand trial, 76% of those with FASD demonstrated impairments on one or more competency-related domains, compared with only 28% in the unimpaired control group.

7 | CONCLUSION

The Supreme Court has ruled that it is inconsistent with evolving standards of decency for people with ID to be sentenced to death in capital cases because of biological characteristics that diminish culpability and deterrability. Just as defendants with ID bear no responsibility for their disorder, the same can be said for defendants with FASD, who are innocent victims of their mothers' ingestion of alcohol during pregnancy. Like ID, FASD explains both *cause and effect* regarding thinking and behavior in criminal acts. That is, an FASD diagnosis provides the court with evidence that a birth mother's substance use, over which her offspring had no control, produced a substantial mental defect that directly influenced violent behavior.

Thus, like ID, FASD frames culpability in the context of brain damage that significantly impairs impulse control and rationality (i.e., capacity to appreciate potential consequences, be risk-aware, and form appropriate intentions). FASD does not mean persons with the disorder cannot formulate plans and intentions. Rather, the executive multitasking required to generate *appropriate* plans and intentions is intrinsically flawed by brain damage that can compromise ability to foresee consequences, weigh costs, and benefits, appreciate cause-and-effect, and shift course while at the same time inhibiting strong unconscious urges from the amygdala/limbic system. Although brain damage does not exculpate those with FASD who have committed violent acts, it does explain how a combination of intrinsic biological factors, over which affected individuals had no control, influenced their behavior.

We suggest that the mental defect in FASD makes ND-PAE equivalent to ID in terms of the very same factors that compelled the Court in *Atkins* to categorically exempt defendants with ID from the death penalty. Diminished rationality and impulse control are the same in both conditions as are maladaptive adaptive outcomes (i.e., gullibility and risk unawareness) that stem directly from the mental defect. Also common to both disorders are social vulnerability and response biases that further jeopardize outcome during the adjudication process. As we have described, there is no empirical difference between FASD and ID in terms of impaired capacity to reason and control impulses or in terms of impaired capacity to successfully navigate the adjudication process. In other words, ID and FASD are equivalent with respect to every metric established by the Supreme Court for diminished responsibility.

ENDNOTES

- ¹ According to Barkley (2012, p. 21), "The fundamental basis of morality is awareness of one's self over time in relation to others and the future consequences of one's actions toward others and of others' toward one's self. This daily intersection of each human's goal-directed activities among those of other goal-directed humans requires rules (ethics) for making such activities run as smoothly and peaceably as possible."
- ² https://www.law.cornell.edu/wex/mens_rea.

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