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Clinical Profile, Risk and Critical Factors and the Application of the “Path towards Intended Violence” Model in
the Case of Mass Shooter Dylann Roof

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Abstract

A threat assessment perspective, namely the Path towards Intended Violence, was applied in the case of the mass shooting perpetrated by Dylann Roof on June 17, 2015 at an Emanuel African Methodist Episcopal Church in Charleston, South Carolina. This perspective is important since it attempts to build on accounts regarding how he progressed towards his mass shooting, beyond the information presented in the forensic evaluations already available. The Path towards Intended Violence was found to be a critical and proximal factor for the mass shooting. This suggested finding is also consistent for other individuals, who were diagnosed with an autism spectrum disorder (ASD), as well as neurotypical individuals, who have engaged in a mass shooting. The Path towards Intended Violence is also discussed as a potential way forward towards trying to identify individuals who may be more vulnerable and at-risk, so that appropriate interventions and supports can be put in place in order that such extreme violence can be prevented.

Keywords: Mass shooting; autism spectrum disorder; path towards intended violence; risk factors.

Exploring the association between autism spectrum disorder (ASD) and violent behavior has been the focus of recent research efforts (e.g., Im 2016a, 2016b). It appears that studies either report an overrepresentation of individuals with ASD in the criminal justice system (CJS) (e.g., Haskins and Silva 2006), while other studies have not found such an overrepresentation of individuals with ASD. For instance, King and Murphy (2014) concluded that “people with ASD do not seem to be disproportionately over-represented in the Criminal Justice System, though they commit a range of crimes and seem to have a number of predisposing features.” (King and Murphy 2014, pp.2717). Additionally, Lindsay and colleagues (2014) found that the number of referrals of individuals with an ASD, to a forensic developmental disability service, occurred with a similar frequency found in the general population of individuals with ID, namely 10 percent; also, the type of offenses are similar to those committed by neuro-typical individuals, while those individuals with an ASD are less frequently charged. Therefore, there is no conclusive evidence that ASD is a risk factor for offending behaviors (Lindsay, Carson, O'Brien, Holland, Taylor, Wheeler, and Steptoe 2014).

To date, ASD and offending have been investigated primarily with case reports. However, a relatively modest number of empirical studies within this area have been conducted (e.g., Mouridsen, Rich, Isager, and Nedergaard 2008; Kawakami, Ohnishi, Sugiyama, Someki, Nakamura, and Tsujii 2012). In the 11 studies identified by Bjørkly (2009), there were prevalent cases of uttering threats, physical assaults, arson (Murrie et al. 2002), using weapons including knives (Murrie, Warren, Kristiansson, and Dietz 2002; Raja and Azzoni 2001) or screwdrivers (Mawson, Grounds, and Tantom 1985), attempted rape (Kohn, Fahum, Ratzoni, and Apter 1998) and homicide (Scragg and Shah 1994; Schwartz-Watts 2005). However, in one of the first reviews, Ghaziuddin, Tsai and Ghaziuddin (1991) found no evidence to support an association between the ASD and crime, while Bjørkly (2009) found that an association between ASD and violent crime was only reported in seven percent of 147 studies on ASD and violence.

Potential Risk Factors for Offending in Individuals with ASD

In regard to possible critical factors, Lerner and colleagues (2012) reviewed the literature regarding violent crimes committed by adolescents and young adults with a diagnosis of high functioning ASD; they proposed three main areas of impairment, namely, theory of mind (ToM) deficits (ToM is the ability to understand that other people have beliefs, intentions, desires, and perspectives which are different from one's own and the ability to attribute mental states—beliefs, intents, desires, pretending, knowledge—to oneself and others), poor emotion regulation, and impaired moral reasoning (Lerner, Haque, Northrup, Lawer, and Bursztajn 2012) as being important to consider. We will provide an overview of some of these and some other risk factors which have been identified by others.

Theory of Mind (ToM) Deficits

It is argued that many individuals with ASD have an impaired ‘theory of mind’ (ToM). ToM refers to the ability to attribute mental states (e.g., beliefs, intents, desires) to oneself and others and to understand that others can hold different beliefs, desires, intentions, and perspectives that are different from one's own (Frith 1989; Baron-Cohen 1991). An impairment in this ability is important to consider in offenders with ASD (Burdon and Dickens 2009). Barry-Walsh and Mullen (2004) detailed some cases of offending behavior in individuals with ASD and found that, in all of the cases they detailed, the offending behavior was not recognized by the offender as being wrong. Rather the actions of their offending were not modified with respect to the impact of their actions on their victim(s) or those around them; nor would their behavior be modified by any consequences of their actions (Barry-Walsh and Mullen 2004).

Preoccupations and Special Interests

Woodbury-Smith and colleagues (2010) compared the circumscribed interests of a group of 21 intellectually able ‘offenders’ with ASD with those of 23 men and women with no diagnosis of an ASD. The findings revealed that the ‘offenders’ were significantly more likely to report interests which are rated as having a ‘violent’ content. Furthermore, for 29% of the participants, the ‘index offence’ appeared to be associated with their interest(s) (Woodbury-Smith, Clare, Holland, Watson, Bambrick, Kearns, and Staufenberg 2010). Lastly, in their paper, Barry-Walsh and Mullen (2004) detailed five cases involving individuals with ASD who have committed an offence. In all five cases, they found that the offending behavior was a product of the individual’s ASD; for instance, in Case 1, the fire starting was a reflection of a typical narrow, all absorbing interest.

Psychiatric Co-morbidities in Individuals with ASD

As highlighted by Underwood and colleagues (2016), there is no robust support for the notion that individuals with ASD are at increased risk for engaging in offending behavior (e.g., King and Murphy 2014). However, those individuals with ASD who also have a psychiatric co-morbidity may be at increased risk of offending behavior (e.g., Chaplin, McCarthy, and Underwood 2013). This is particularly noteworthy when you consider that there exists a vast literature investigating the common co-morbidities which can be present in individuals with ASD. Some of the most common co-morbidities include: mood disorders such as depression and anxiety (e.g., Ghaziuddin, Ghaziuddin, and Greden 2002; Hammond and Hoffman 2014; Matson and Williams 2014; Moss, Howlin, Savage, Bolton, and Rutter 2015; Bruggink, Huisman, Vuijk, Kraaij, and Garnefski 2016), and behavioral

disorders such as attention-deficit/hyperactivity disorder (ADHD) (e.g., Chen et al. 2015; Taylor, Charman, and Ronald 2015; Antshel, Zhang-James, Wagner, Ledesma, and Faraone 2016). These “comorbidities may further intensify an individual with ASD’s impaired ability to cope with problems in his or her life” (Allely, Wilson, Minnis, Thompson, Yaksic, and Gillberg 2017, pp. 60). One study found that in their sample of 62 young people (aged between 12-23 years) with Asperger’s syndrome (AS), 41% of participants reported clinically significant levels of anger (17%), anxiety (25.8%) and/or depression (11.5%) (Quek, Sofronoff, Sheffield, White, and Kelly 2012). Studies have also found that challenging behavior is highly prevalent among people with ASD (Holden and Gitlesen 2006). A history of psychological trauma has also recently been suggested as a potential contributing factor to increasing the risk of violence among individuals with ASD. However, given this is a relatively neglected area, more research is needed to investigate this suggested association (Im 2016b).

The essential argument is that the common co-occurring disorders, that can exist in individuals with ASD, are the key contributing factors that give rise to their offending behavior. One study which highlights this point is that of Långström and colleagues (2009) who conducted a study using data from Swedish longitudinal registers for all 422 individuals hospitalized with autistic disorder or Asperger syndrome during 1988-2000. They compared those committing violent or sexual offenses with those who did not. They found that 31 individuals with ASD (7%) were convicted of violent nonsexual crimes and two of sexual offenses. Importantly, they found that comorbid psychotic and substance use disorders were associated with violent offending. This led the authors to suggest that “violent offending in ASD is related to similar co-occurring psychopathology as previously found among violent individuals without ASD” (Långström, Grann, Ruchkin, Sjöstedt, and Fazel 2009, pp.1358). Additionally, there are other researchers who have found evidence to support this argument even more recently. For instance, Wachtel and Shorter (2013) also emphasize that ASD by itself is not an intrinsically violent disorder. In other words, ASD is not a necessary condition to propel someone to engage in offending behavior. However, the additional presence of psychotic illness (which is strongly associated with violence), for instance, may increase the risk of the individual engaging in offending behavior. Wachtel and Shorter (2013) argue that “there may be a kind of one-two ‘vulnerability punch,’ giving individuals with ASD a baseline higher risk of comorbid psychiatric illness, not infrequently including psychosis” (Wachtel and Shorter 2013, pp.404). Other conditions that have been proposed but examined only by a sparse literature is the association between psychopathy and ASD in relation to violent crime (Boka and Leibman 2015), and ASD as a “vulnerability factor” for the development of psychosis (e.g., Nylander, Lugnegård, and Hallerbäck 2008; Skokauskas and Gallagher 2009). For instance, a 2009 Swedish national study of 422 persons hospitalized with autism or AS found that, 25.8% also had a comorbid diagnosis of either schizophrenia or psychosis, who had committed a crime. This frequency stands in contrast to 9.2 % of individuals with ASD, with no convictions for violent behavior, having a diagnosis of either schizophrenia or psychosis (Långström, Grann, Ruchkin, Sjöstedt, and Fazel 2009).

In summary, such a condition as having a psychiatric co-morbidity has been proposed to account for any connection between an ASD and violence. For individuals with ASD and psychiatric co-morbidities, the difficulties in coping with everyday problems may be particularly exacerbated (Allely et al. 2017; King and Murphy 2014). Others believe that any offending behavior is considered to be a function of their psychiatric co-morbidity, rather than their ASD (Newman and Ghaziuddin 2008; Woodbury-Smith et al. 2005).

Caution when Considering Risk Factors in Individuals with ASD

In any discussion of potential risk factors to engaging in offending behavior in individuals with ASD, it is imperative that there is not an assumption exerted that autism is a risk factor for extreme violence in the general population. However, there may be a very small subgroup of individuals with an ASD who do exhibit violent behavior. With respect to extreme violence, such as mass shooting and serial murder, Allely and colleagues (2014) reported that 28.03% (N = 67), of a total sample of 239 killers, had definite, highly probable or possible ASD (Allely et al. 2014). Furthermore, Allely and colleagues (2017) investigated a sample of 73 mass shooting events (comprising of 75 perpetrators) and found that eight percent of the cases involved a perpetrator who was strongly argued to have ASD or who had received an ASD diagnosis (Allely, Wilson, Minnis, Thompson, Yaksic, and Gillberg 2017). As a result, Allely and colleagues (2017) proposed that examining these cases, to corroborate an ASD and what critical factors may have contributed to their attack, would be of value in terms of furthering our understanding of the pathway to violence in such individuals. As a result, the publically-available information for such cases involving Adam Lanza, and then Dean Allen Mellberg, Anders Behring Breivik, Elliott Rodger have all been investigated by Faccini (2016) and Allely and Faccini (2016, 2017). Despite having an ASD (except for Elliott Rodger where there was not enough publically-available information to confirm the ASD) and a variety of mental health conditions, Allely and Faccini (2017) suggested that all individuals engaged in the Path towards Intended Violence, and that this path was critical and proximal for a mass shooting to occur. As a result, even in a sample of individuals with an ASD and who committed a mass shooting, having an ASD-related deficit or mental illness were regarded as risk factors, but not critical or proximal factors when accounting for their mass shooting. Similar to the previous case analyses of individuals with an ASD who had engaged in a mass shooting, it is hypothesized that the Path towards Intended Violence will also be found to be a proximal and critical factor that could account for Dylann Roof's mass shooting.

The information presented in this article does not intend to replace any of the information or conclusions in the five forensic evaluations of Dylann Roof. The purpose of this case study is to present a threat assessment perspective of Dylann Roof's critical actions progressing towards his mass shooting. To date, this perspective is missing from the publically-available reports and information regarding his violence. In considering this perspective, a more comprehensive view of Dylann Roof's profile, along with all of the information contained in the forensic evaluations, adds to a more complete understanding of the critical factors that could account for his

mass shooting. Based on the evidence from the forensic evaluations of Dylann Roof, this article will aim to understand the critical path towards a mass shooting from a threat assessment perspective.

Case Study

On June 17, 2015, 21-year-old Dylann Storm Roof shot nine people at an Emanuel African Methodist Episcopal Church in Charleston, South Carolina. He was later apprehended by police, charged and found guilty of all of the Federal and State charges, and currently is incarcerated in United States Penitentiary, Terre Haute (USP Terre Haute).

Psychological Evaluations

Five professionals carried out evaluations of Dylann Roof (Loftin 2016; Robison 2016; Maddox 2016; Ballenger Evaluation Competency to Stand Trial [2016], and Second Competency Evaluation Report [2017]); and Moberg 2016). Dr. Rachel Loftin was retained by Dylann Roof's defense attorneys in June 2016 to carry out a psychological evaluation of Mr. Roof with a particular focus on whether he met the diagnostic criteria for ASD. A diagnosis of ASD was confirmed by an evaluation by Rachel Loftin, Ph.D., a psychologist who specializes in the assessment and treatment of ASD in both children and adults. The measures that Loftin administered in her evaluation of Roof included: Autism Diagnostic Observation Schedule, Second Edition (ADOS-2; Lord, Rutter, DiLavore, Risi, Gotham, and Bishop 2012, note: this is considered to be the gold standard instrument for autism assessment); Scales of Independent Behavior, Revised (SIB-R; Bruininks, Woodcock, Weatherman, and Hill 1996); Comprehensive Assessment of Spoken Language (CASL; Carrol-Woolfolk 1999); Test Of Problem Solving, Second Edition (TOPS; Bowers and LoGiudice 2007); Behavior Rating Inventory of Executive Function-Adult (BRIEF; Roth and Gioia 2005); and the Wechsler Adult Intelligence Scale - Fourth Edition (WAIS-IV; Wechsler 2008)—Comprehension Subtest. Loftin evaluated Roof over six sessions for a total duration of 19 hours. Interviews were also conducted with numerous family members (Mother, Father, Sister, Paternal Grandparents, Paternal Uncle and Paternal Aunt). Dr. Loftin's evaluation is consistent with the multi-method assessment of autism that was advocated by Volkmar, Siegel, Woodbury-Smith, King, McCracken and State, in their 2014 article, "Practice Parameters for the Assessment and Treatment of Children and Adolescents with Autism Spectrum Disorder". James Ballenger, MD, in the Second Competency Evaluation Report of 1/1/17, stated: "Although there may have been examples of some autistic traits as a child, there is no credible and convincing evidence that these traits have any significant effect on his competency to stand trial or to function as his own counsel at this point". (Second Competency Examination Report, pp.18) and that there was "no evidence that this is the case in his first evaluation and continues to find no evidence that he has developmental disabilities or mental illness that are controlling or even significantly

influencing his decision making”. (Second Competency Examination Report, pp.17); as a result, he deemed Dylann Roof competent to stand trial in both evaluations. Paul J. Moberg Ph.D. in his ‘Neuropsychological and Facial Anthropometric Evaluation’ of Dylann (Moberg 2016) did not diagnose an ASD. However, it is important to point out here that a screening tool or diagnostic instrument for ASD was not included as part of the battery of neuropsychological assessments administered during his evaluation (please see Appendix A for a full list of the neuropsychology procedures administered by Moberg in his evaluation of Roof). He does state, however, that the data does suggest “a neurodevelopmental disorder with psychosis spectrum features” (Moberg 2016, pp.11) but does not specify what this neurodevelopmental disorder may be - this was not the focus of the report, rather the outcome of the battery of neuropsychological procedures were the focus. Consistent with the psychiatric conclusions reached by Dr. Loftin (2016) in her evaluation, Robison (2016) in his ‘Final Report for Defense Counsel’ described in detail a wide range of traits/behaviors exhibited in Dylann which were consistent with ASD. This was based on his: interviews with counsel regarding defendant’s appearance and behavior during their encounters; interview with defendant Dylann Roof (as reported in his Nov 19 Declaration); interviews with defendant’s mother (Amy Roof) and grandparents (Joe and Lucy Roof); review of videos of visits (at Charleston detention facility) between defendant and family members; review of confession; review of school and medical records; review of defendant’s journals and website and, finally, review of personal photos provided by defense counsel (Robison 2016, pp.2-3). Lastly, Dr. Maddox (2016) stated in her report that: “In the course of my evaluation of Dylann Roof over these past eight months, I have consulted with Dr. Loftin and reviewed her affidavits and report, and relied on the same (along with my own training, experience, observations and review of collateral information and interviews) in forming my opinion that Dylann Roof is properly diagnosed with Autism Spectrum Disorder” (Maddox 2016, pp.18). The sources of information that Maddox reviewed included discovery, records and interviews (these items are listed in the Exhibit 1 section of the report). Dr. Maddox reviewed social history records provided by the defense, including birth records, medical records and Lexington County Mental Health records. Portions of discovery provided by the government, including Mr. Roof’s videotaped interview by the FBI and the text posted on the Last Rhodesian website were also reviewed. Dr. Maddox met with Dylann on nine occasions (clinical interviews), totally approximately 25 hours. Each time that Dr. Maddox met with Dylann a Mental Status Examination (MSE) was carried out. The MSE is “a structured assessment of the patient’s behavioral and cognitive functioning. It includes descriptions of the patient’s appearance and general behavior, level of consciousness and attentiveness, motor and speech activity, mood and affect, thought and perception, attitude and insight, the reaction evoked in the examiner and, finally, higher cognitive abilities. The specific cognitive functions of alertness, language, memory, constructional ability, and abstract reasoning are the most clinically relevant” (Martin 1990). Dr. Maddox also interviewed members of Mr. Roof’s family, including his mother, Amy Roof; his paternal grandparents, Joe and Lucy Roof; and his father, Benn Roof. She also toured Benn Roof’s home, and Dylann Roof’s bedroom located in Danny Beard and Amy Roof’s residence (Maddox 2016, pp.1-2).

In summary, three of the five forensic evaluators found that Dylann Roof did have an ASD (namely Loftin [2016], Robison [2016], and Maddox [2016]); on the other hand, Dr. Ballenger (2017) opined that: “there may have been examples of some autistic traits as a child” (Second Competency Evaluation Report, pp.18), and Dr. Moberg (2016) diagnosed “a neurodevelopmental disorder with psychosis spectrum features.” (Moberg 2016, pp.11). However, the authors regard Dr. Loftin’s finding that Dylann Roof does have an ASD as most compelling especially since her conclusion was based on a multi-method procedure advocated as a standard best practice when evaluating someone for an ASD.

The Court denied a defense request for an independent competency evaluation focused on ASD. However, at the hearing the defense offered evidence of an ASD diagnosis by Dr. Loftin. Additionally, the Court also heard testimony from an ASD expert from the Medical University of South Carolina (MUSC), psychologist Laura Carpenter. Dr. Carpenter outlined some of the ways in which ASD is disabling even in individuals with high IQ (Defendant’s Motion for Courtroom Accommodations 2016).

Summary of Loftin’s Psychological Evaluation

Social Communication in Adolescence and Young Adulthood

Dylann’s social-communication challenges reported in childhood continued to worsen in adolescence and young adulthood. At the same time, beginning in ninth grade, Dylann experienced a worsening of his other psychiatric symptoms (social anxiety, delusional beliefs, disordered thinking, paranoia). Dylann’s mother reported that Dylann had always been extremely quiet and socially withdrawn. It was noted that he was difficult to engage with in conversation. He rarely asked questions about other people and their perspectives, unless it was to do with his special interests. In recent years, Dylann was described as sounding as if he were quoting someone when talking by both paternal grandparents and his Uncle Joe. His grandfather reported that he sounded like a political talk radio show (e.g., Rush Limbaugh) (Loftin 2016, pp.22). Formal measures of language showed largely unimpaired language skills, with aspects of impairment. For instance, he scored at the level of a typical 14-year old on a measure assessing pragmatic or social use of language (CASL, Pragmatic Judgment). This indicated that Dylann had an understanding of language that should be used in situations (e.g., making requests or extending an invitation to a friend). However, he had difficulty knowing what to do in situations of increased social complexity (e.g., clarifying a request or introducing two people to each other) (Loftin 2016, pp.22).

During Dylann’s first meeting with Loftin, he immediately started talking about controversial right-wing radio programs. For instance, talking about the Jewish hosts of these radio programs. Dylann made numerous pejorative comments about Jewish people with no apparent recognition that these statements may be considered offensive by others. He also appeared to be genuinely naïve when discussing the aftermath of his actions. A number

of family members reported that he did not appear to understand why they were so upset by the shootings. His grandfather reported to Loftin: “I don’t think he realizes we’ve been affected.” (Loftin 2016, pp.26). For instance, in a video of a visitation, his grandfather told Dylann that his grandmother is upset about the crime and about his incarceration. Dylann appeared incredulous about this, telling his grandfather that it had been a year and they “should be over it” (Loftin 2016, pp.26). Loftin reported that Dylann appeared to be genuinely puzzled. This indicated to the evaluator that he genuinely could not imagine why his grandmother would feel upset. In other words, he had difficulty in imagining his grandmother’s perspective. This difficulty in taking another person’s perspective is known as a “theory of mind” deficit. Dylann was found to perform quite well on the cognitive assessment assessing primarily fact-based social knowledge (WAIS-IV). However, specific areas of concern were identified on formal measures of social problem-solving ability (TOPS-2), which included scenarios of social situations. He was able to identify solutions to problems which required him to make inferences and determine possible solutions. However, his performance was found to be about the level of a middle school student when social elements of problem solving were assessed. Dylann exhibited an impaired ability to interpret others’ perspectives and transfer insights. When asked to interpret others’ perspectives, his performance showed that he was approximately at the level of a 14-year old. This difficulty in imagining himself in another person’s place would impair his ability to make appropriate responses. He provided literal, concrete responses to other items but there were a number of times where he missed the point of a question entirely. His ability to transfer learning from one situation to another was assessed at the level of a 13-year, 3-month old. Such impairment is commonly found in individuals with ASD.

Deficits in Reading and Using Nonverbal Communication

Throughout most of the evaluation, irrespective of the topic under discussion, Dylann displayed a broad, goofy grin. When Dylann was not grinning, his expression was either flat, an exaggerated “thinking” expression, or an expression of exasperated disbelief when the examiner said she did not know something. During discussion of preferred topics his expression was adequate. However, his self-expression was noted to be oddly repetitive. For example, every time he exhibited the disbelief expression, it was the same expression precisely, including a repetitive motion of rubbing his eyes. Dylann has raised his concern about smiling at inappropriate times (e.g., when he is in court). Dylann appeared to smile because of feelings of nervousness and, when he was unsure about how to act in certain situations, he would use smiling as a coping strategy. Loftin noted that Dylann was sometimes able to maintain appropriately modulated eye gaze during the evaluation. However, there were occasions when his gaze was uncomfortably intense. At some key social junctures, his gaze was found to be absent or avoidant. Dylann used descriptive and emphatic gestures when speaking. However, he seemed to rely on a small number of gestures and executed them in a repetitive fashion (i.e., each time it would be precisely the same movements). In an interview,

Dylann reported that, with regards to his eye gaze and gestures, he was “faking all the time” (Loftin 2016, pp.29) as they do not come naturally to him. He did not seem to recognize that by making this statement to the evaluator he was revealing his difficulty in social situations. Instead, he sounded pleased that he had been able to learn when to look at people and when to use gestures and did not appear to be aware that such skills are innate for most people.

Difficulty Understanding, Developing and Maintaining Appropriate Social Relationships

In her evaluation Loftin found Dylann’s social insight was impaired. He reported that he currently had no friends. Despite saying “I’ve had friends in the past” he was only able to name one person that he truly considered to be his friend, Jack Chandler. When asked to describe what friends are he said that they are people who “spend time with you” and “are nice to you.” They “share with you” and “you’ve known them for awhile. You get along and have common interests.” (Loftin 2016, pp.30). Such responses are considered to be very immature. Despite mentioning shared interests, his descriptions reflect little reciprocity and details only what the other person would do for him. Additionally, in evaluation, when asked questions about dating and sexual relationships, he appeared embarrassed (flushed, looked down but without change in affect) and refused to answer questions about dating relationships. When pressed, he said that, unlike his feelings before being incarcerated, he now wishes he could have had a dating relationship. Lastly, the scores from the adaptive behavior scale (SIB-R), which provides age equivalent scores to correspond to parent report of observed behaviors, showed that Dylann’s social behavior was rated by his mother at the level of someone 9-years, 3-months old. While some aspects of this score may be associated with his social anxiety, a number of items are directly associated to social skills. Lastly, some of Dylann’s family described his tendency to strive to appear “cultured.” In his evaluation with Loftin, he was eager to talk about travel to Europe, speaking French, and other topics which he considered to be cultured.

Restricted-Repetitive Behaviors and Interests in Adolescence and Adulthood

Dylann has exhibited a number of intense interests throughout later childhood and adolescence. For instance, Star Wars, Maple Story (a computer-based videogame), Bionicles, dogs, history/historical sites, being “cultured,” and dinosaurs. His sister said that, at different points, he would be “consumed” by these interests. Similarly, Dylann’s preoccupation with racism consumed all aspects of his life. In his spare time, he visited confederate museums, read racist blogs and websites, and talked about topics related to race. His concerns are not restricted to African Americans. He also wrote about his negative views and stereotypes about homosexuality, women, and Jews, in addition to other minority groups. Dylann was also found to have a number of unusual sensory interests or aversions. His mother reported being certain that Dylann has a history of being particular about things being clean and his clothes. Shortly before the shooting, Dylann had started wearing two pairs of pants (trousers) at the same time. This

may serve a sensory function as double layers of clothing can increase the feeling of compression. However, Dylann's mother suggested that this may be his attempt to appear bigger.

Psychiatric Co-morbidities

Dylann attained his developmental milestones within normal limits (however, whether speech developed within normal limits is unclear). However, there were numerous concerns regarding the quality of his socialization from a young age. Despite these concerns, no intervention was sought. Without the development of appropriate social skills, over time his stress in social situations worsened with anxiety to such an extent that he rarely went outside. To self-medicate his social anxiety, he used drugs and alcohol. Alone with the Internet in his room and his mental health disorders, Dylann's thinking became "increasingly disconnected from reality" (Loftin 2016, pp.36). Consistent with this, the forensic evaluation carried out by Robison also highlighted this disconnect from reality: "Mr. Roof seemed totally unconcerned. He was certainly aware that prosecutors were seeking the death penalty with the greatest of vigor, and his total absence of visible anxiety suggested a profound disconnect from the grave reality of his situation. During those visits he was truly behaving as a young man in his own world" (Robison 2016, pp.6).

At his 18-year old well check, Dr. Mubarak diagnosed Dylann with anxiety disorder because he was not leaving the house. In spring of 2009, Dylann attended the Lexington County Community Mental Health Center. At the Center, he told staff that he was anxious about being around people (and did not like to be around crowds) and people looking at him. He said that he worried "all the time" about it (Loftin 2016, pp.41). He also reported obsessive compulsive (OC) symptoms of repeated urinating and checking of door locks in addition to panic symptoms. Dylann also reported a history of transient OC symptoms (e.g., repeated hand washing). The therapist suggested that Dylann was taking drugs in order to self-medicate his anxiety symptoms. Dylann refused to attend any further sessions at the Center and did not take the anti-anxiety medication he had been prescribed. His mother reported that Dylann had said that there was nothing wrong with him and that treatment would be a waste of time. Dylann was painfully self-conscious during his teenage years. He would not go out because he thought everyone was looking at him. Dylann would insist that his mother not stop beside other cars in traffic because people would look at him. Evidence of anxiety experienced by Dylann throughout childhood and adulthood is significant. The severity of his anxiety symptoms was much greater than what would be expected from ASD by itself. The most marked anxious traits exhibited by Dylann were self-consciousness and the related social anxiety. The severity of his symptoms were significant enough to impact on vital decision-making processes. During evaluation Dylann stated that he wished to stop the assessments because he did not want to be embarrassed in court. He said that he would be embarrassed if his Wikipedia page stated that he had mental illness or seemed uncool. He said, "I am not

worried about the death penalty. I am worried about being embarrassed” (Loftin 2016, pp.40). According to Dylann, this fear is to do with personal embarrassment as opposed to any personal agenda associated with his racist beliefs.

Dylann’s mother reported being worried “a lot” about whether Dylann was suffering from depression. However, she reported no signs of Dylann being suicidal. Starting in October 2008, Dylann carried out internet searches for certain models of guns (“how to get a glock”) and for lethal doses of over the counter medications. In March of 2009, Dylann went to the Lexington County Community Mental Health Center and reported feeling suicidal. Records indicate that he said to his mother he would run away and kill himself. Later he said to the therapist that he said he would kill himself because he did not want to go to school. Over the following years, visits to his pediatrician showed that between well checks at ages 16 and 17, he lost ten pounds. During this time Dylann’s isolation got worse. In May 2010, Dylann finished his last semester of high school that he went to in person and later began an online program. His sister Amber estimated that he had essentially been living in his room on his computer for about five years before the shooting. Dylann’s father reported being more aware of the isolation beginning approximately about the time that he dropped out of Dreher High School. He would stay in his room at his mother’s house and would never go out (not even to go to the mailbox on the road in front of his mother’s house as reported by Dylann’s father). His mother reported that Dylann would nap during the day and stay up all night. Evidence of depression is evident during the lead up to the shooting – see section below ‘Research and Planning: Third Step’ which describes an online ‘discussion’ he had with Dr. Thomas Hiers following an ad he posted on Craigslist.com.

Path Towards Intended Violence in the Case of Dylann Roof

Grievance: First Step

The beginning of Dylann Roof’s racial grievance started in 2013 after he viewed a report on the Internet, and then followed up by reading about the incident on Wikipedia, regarding the shooting of Trayvon Martin by George Zimmerman. Dylann Roof believed that George Zimmerman was right and justified in the shooting, and that the treatment of the media towards George Zimmerman was unfair. Subsequently, he started researching black-on-white-crime, Muslim rape gangs, and “Jewish control” on the Internet. Also, he started questioning why the media did not cover these topics despite much attention on the Internet. Dylann reported “that what he ‘saw on the Internet woke [him] up’ and that he thought ‘what can I do that has some impact?’” (Moberg 2016, pp.3). Dylann stated that, for about seven months, he had been thinking about what he might do. He perceived that people were talking about white power but not taking any action. As a result, he wanted to “help the white race” (Moberg 2016, pp.3) who were “under attack” (Moberg 2016, pp.3), and that he “would go down in history” (Moberg 2016, pp.3) because of his actions, which included starting a racial civil war (Moberg 2016).

A tentative profile of Dylann Roof suggests that he strongly believed that he was socially inadequate and imperfect, and feared being evaluated, criticized or judged by others. Also, his anticipation of potential embarrassment or humiliation resulted in considerable anxiety. As a result, he tried not to show his weaknesses, and further decreased his already minimal social contact with others. It is at this point that he developed a depression.

Essentially, experiencing ineptness or inadequacy, humiliation, and developing a physical disability were intolerable for him. In addition, he not only experienced a constant anxiety over perceived threats from internal sources involving such as having a thyroid disorder, possible lymphatic cancer, physical body asymmetries, but also from external sources such as having aversive social interactions, contamination from chemicals and government conspiracies. Regarding his anxiety surrounding his belief that he had a physical body asymmetry, Moberg reported that Dylann had “stated that he felt that his left shoulder and ribcage is bigger or ‘more muscular’ than the right side of his body. Mr. Roof stated that in general, he felt that the left side of his body was more developed and that this was due to the fact that the testosterone in his body was all on that side (i.e., he drew a midline down his body with his finger for the examiner). When told by the examiner that is not how circulating hormones work in the body, he persisted in his belief in that his testosterone was lateralized to one side of his body and that this is why the left side of his body is more developed” (Moberg 2016, pp.4). These internal and external threats contributed to feelings of unsafety and being vulnerable to other people.

Dylann Roof’s anxiety and sense of threat were initially experienced as a vague discomfort. However, after becoming interested in the Trayvon Martin-George Zimmerman case, and believing that Zimmerman was justified in the shooting and unfairly treated, he proceeded to research Black-on-White-crime, and other acts by different racial groups. Ultimately, he started accessing information regarding white supremacy. Dylann Roof’s downward spiral was marked by such feelings as helplessness, depression, humiliation and a significant loss of self-esteem, and personal significance.

Kruglanski and colleagues argue that the motivation for attaining a goal through terrorism is a “quest for significance” which would involve feeling valued, respected, a sense of esteem or achievement, by exacting revenge upon a perceived persecutor. In this way, it is possible that someone joining and committing to a cause can help attain these outcomes. Therefore, affiliation with a terrorist group may remedy a profound sense of being alienated, disconnected or frustrated with one’s circumstances (Kruglanski, Chen, Dechesne, Fishman, and Orehek 2009; Dugas and Kruglanski 2014; Kruglanski, Gelfand, Bélanger, Sheveland, Hetiarachchi, and Gunaratna 2014; Jasko, LaFree, and Kruglanski 2017). The person would adopt the group’s identified grievance (i.e., black-on-white-crime etc. in the case of Dylann Roof), persecutor (i.e., blacks), and a method to follow, namely terrorism (i.e., shooting of black parishioners of a prominent black church), to retaliate against the identified persecutor. In this way, the alienated person would find camaraderie, a sense of belonging and restore their sense of significance via the new quest or mission. Along these lines, Roof started to incorporate the ideology and identify with the white supremacist

movement. This incorporation or identification activated in him a “significance quest” involving upholding and defending white supremacy. Thus, his personal decline was reframed into white power being threatened by blacks, who were perceived as causing harm to one’s group, and oneself. Revenge was then justified. Furthermore, once the quest for significance was aroused, identification with the white supremacist group including using violence as revenge was adopted. Evidence for this explanation can be found in his attorney’s statement to Dr. Ballenger that regarding the Trayvon Martin case, Roof stated: “this explains everything including my life-long anxiety problem and discomfort” (Evaluation Competency to Stand Trial, pp.47).

Roof spent more and more time on-line and over the phone (Robison 2016), reading and discussing their ideology, which would dominate his time and become his sole focus. Specifically, in his report, Robison (2016) states: “Based on his own statements (in the journal and during his FBI interview) it looks like Mr. Roof formed his racial ideas entirely as a result of online interaction. Furthermore, it appears his interaction was mostly one-way; in other words he read quite a lot but contributed little original thought. The ideas in his journals seem to follow what’s available on Council of Conservative Citizens, The Daily Stormer, Stormfront and other similar websites” (Robison 2016, pp.12). As a result, these acts would complete his radicalization towards terrorism, where his quest for significance involved retaliating against blacks as a righteous revenge, possibly also fulfilling a destiny of being a hero. As stated in the evaluation report by Maddox, Dylann “believes that he will be part of history, and he distinguishes that from being famous; he says he will go down in history, and 50 years from now this event will be an important event in history” (Maddox 2016, pp.4).

Ideation: Second Step

Dylann Roof’s ideation involved perceiving that the white race was “under attack” by blacks, and that since no one was doing anything but talking, he believed that instigating a civil war would remedy the situation. Essentially, this ideation was expressed in his 2,444-word Manifesto which he published on-line (see - <https://www.documentcloud.org/documents/2108059-lastrhodesian-manifesto.html>). Although Dylann Roof’s Manifesto addressed issues with different racial groups such as “Jews”, “Hispanics”, and “East Asians” it dedicated much more attention to “Blacks” and then ends with a statement regarding “Patriotism” and an “Explanation” for what he proposed to accomplish. As stated in his Manifesto, he concludes: “I have no choice. I am not in the position to, alone, go into the ghetto and fight. I chose Charleston because it is most historic city in my state, and at one time had the highest ratio of blacks to Whites in the country”. He also stated that “Well someone has to have the bravery to take it to the real world, and I guess that has to be me.” (Morgan 2015). This statement captures the idea that a serious action was needed and that that action involved violence. His Manifesto was also influenced by literature from the Northwest Front, a white supremacist organization. Also, in regards to leakage and discussing his ideation with others, Dylann Roof reportedly told his friend about his desire to kill people and start a race war. However these statements were not taken seriously (Follman 2015). Finally, when FBI agents seized his computer and cell

phone, Dylann Roof had been in contact with other white supremacists. His “radicalization” was completed via on-line and cell phone conversations, and with a basic lack of personal experience being mistreated by Afro-Americans (Robison 2016). Overall, there is a paucity of information that Dylann Roof actually identified with other assailants; however he did repeat the rhetoric of American White Supremacist groups.

Research and Planning: Third Step

In regard to the overall planning of the attack, the planning and preparation phases of his attack may have taken anywhere from six months to two years. An unidentified source said interrogations with Roof after his arrest determined he had been planning the attack for around six months. According to the report of an Afro-American friend and neighbor, Dylann Roof’s primary target was the College of Charleston and not the church; however he changed his mind after surveiling the security at the college. In addition, Dylann posted an advertisement on Craigslist regarding wanting someone to accompany him on a historic tour of Charleston. The stated purpose of the tour would involve identifying prominent sites related to black history with a caption to the ad which said: “No Jews, queers, or niggers” (Loftin 2016, pp.44). The real aim was to tour sites which were symbolic of past “white supremacy” (e.g., sites where the plantations were), and other sites where he would take pictures with such symbols as “1488” the supremacist code. During his trial, he stated that this was how he prepared himself mentally for the attack (Ball 2017). Subsequently, a Dr. Thomas Hiers recognized the photo and companion request of Dylann Roof on Craigslist.com, who was looking for a companion to tour different historic sites. Dr. Hiers reached out to him. Dr. Hiers offered to pay the writer to watch some TED talks. The writer responded by thanking him for the suggestion, saying that he seemed like a nice man. The poster of the ad then wrote, “I am in bed, so depressed I cannot get out of bed. My life is wasted. I have no friends even though I am cool. I am going back to sleep.” Dr. Hiers then made contact with a professional colleague in Columbia, John Connery, who said he would help. Dr. Hiers then wrote back saying: “My friend would like to take you out to lunch – he will try to help you get your life moving.” The writer did not respond. Dr. Hiers contacted local police after the shooting was reported in the news and reported his contact with Dylann on Craigslist.com (Loftin 2016, pp.44). (Sack 2017). Ultimately, the Emanuel AME Church was selected because of its prominent historical significance. Dylann Roof’s plan involved shooting individuals attending the bible study group, and then shooting himself after police arrived at the church.

Preparation: Fourth Step

In regards to preparation, Dylann Roof already had a vehicle that he received as a birthday present for his 21st birthday; basically his need for arranging transportation was already met. Also, since he turned 21, he took money that he received from his parents and bought a gun (weapons acquiring) from a West Columbia, South Carolina retail gun store. There may have been plans to purchase a semi-automatic AR-15 rifle, since he already had a forearm grip and six unloaded magazines for it (Brumfield 2015). However, since he did not have enough money

for the rifle, he purchased a Glock handgun and at least eight magazines from a Shooter's Choice gun shop (Darlington 2016), and additional ammunition from a Wal-Mart. He participated in shooting practice in a woods near-by his home, as well as practice shooting in his home's backyard (he posted online some videos of him practicing shooting in his backyard). Additionally, he would use a Garmin GPS technology to travel to-and-from Columbia to Charleston a number of times to probably conduct surveillance of the church (AT&T records of landline phones at Emanuel AME Church and in the house where Dylann Roof lived also revealed that he called the church, making a connection for about 13 seconds on February 23rd 2015.) and visited different historic sites and took pictures (Darlington 2016).

Breach: Fifth Step

Since there was no security at the Emanuel AME Church, there was no effort needed to breach or circumvent the system.

Attack: Sixth Step

Prior to leaving for the church, Dylann Roof uploaded photographs of himself with a handgun, dressed in a jacket with emblems related to white supremacists, references to the number '88' (a white-nationalist code for "Heil Hitler"), and holding a Confederate Battle Flag onto his website *lastrhodesian.com* (see website 1). Since he would subsequently engage in attack behaviors, the act of sharing this information online could be considered a final act behavior, especially since he anticipated that he would not survive the attack. Dylann Roof then proceeded to the Emanuel AME Church and attended a Bible Study group that was being held in the basement. He entered the church at around 8:16pm on June 17, 2015 with a bag that contained his gun and magazines. At 9pm, he stood up, and during a benediction where everyone had their eyes closed, started shooting at the Reverend Pinckney and killed an additional eight people in the congregation. Since Roof had positioned himself between the group and the two exits, he essentially blocked off any escape without running directly past him. However, he did want to leave at least one person alive to be able to relate what had occurred. Subsequently, as he was leaving the church, he reloaded a magazine in his gun, anticipating that he would have to commit suicide since he expected that the police would be outside. As he exited the church, he was surprised that no police were there. He got in his vehicle and was headed to Nashville, Tennessee (see website 2 for link to this video). Once stopped by police, he peacefully surrendered in Shelby, North Carolina (about 245 miles, 394 km, from the shooting scene).

Risk and Critical Factors

As was originally presented by Calhoun and Weston (2003), Intended Violence consists of discrete steps along a Path towards Intended or Planned Violence. Subsequently, Allely and Faccini (2017) suggested that progressing

along the Path towards Intended Violence could be considered a proximal and critical set of factors for engaging in a mass shooting. The case analysis of Dylann Roof suggests that engagement in the Path towards Intended Violence was also critical in accounting for his mass shooting.

However, there are other risk-relevant factors that could make one vulnerable or predisposed to developing a grievance, ideation and then making the violence-only decision of resolving the grievance. In analyzing Dylann Roof's case, different factors are suggested as being risk-relevant. A suggested list of risk-relevant factors and critical Path-related factors are outlined below:

Risk Factors

1. Denial/difficulty adjusting to having an ASD, feeling less-than-others, defective, not "normal"
2. A sense that the world is unsafe, threatening, rejecting
3.
 - a. Increasing time accessing "fringe"/hate/terrorism discussion groups, videos, conspiracy theories, movements; coupled with significant social isolation so these ideas are unchecked and incubate;
 - b. Heightened agitation if fixed beliefs are challenged/one's mind is made up/difficulty recognizing alternative viewpoints/identifying consequences AND feeling privileged in knowing the "truth" of what is "really going on"; desisting in talking to others about one's ideas
4. Downward spiral - failing at school, job, relationships etc. accompanied by depression and thoughts of suicide and not cooperating with treatment

Path-related Proximal and Critical Risk Factors

5.
 - a. Harboring a grievance involving a sense of injustice, mission, destiny, loss, desire for revenge, recognition or fame.
 - b. Developing ideation surrounding the grievance, leakage of the ideation
 - c. Ideation of using violence to resolve the grievance

Risk-relevant Factors Exemplified In the Dylann Roof Case

Denial/difficulty adjusting to having an ASD, feeling less-than-others, defective, not "normal"

According to the Evaluation of Competency to Stand Trial report of 11/15/16 by Dr. Ballenger, Dylann stated that: "... 'it would ruin me' to present the autism defense, because then 'everybody would think I am a weirdo'." (pp.21). Essentially, Dylann Roof did not want to be known as a "weirdo" because he believed that "nerds and losers have autism" (Robison 2016, pp.17 and pp.18). As stated by Robison in his evaluation report: "It was clear that the idea of autism did not fit with his self-image" (Robison 2016, pp.17). On the other hand, he preferred to be known as "just a sociopath" (Robison 2016, pp.18).

A sense that the world is unsafe, threatening and rejecting

According to Dr. Maddox's Forensic Report of 12/26/16, Dylann Roof was "preoccupied with his belief that the world is not safe" (Maddox 2016, pp.9) and was also "preoccupied with the idea that white people are under attack" (Maddox 2016, pp.9). In addition, according to the Forensic Report of Dr. Rachel Loftin, his feelings of unsafety also consisted of being afraid of contamination from contact with chemicals and cleaners. For instance, "he told his mother not to use dusting spray or other cleaners in his room because he did not want the chemicals in there. He would tell her not to dust in his room even if he wasn't in the room because he was afraid that there would be chemical residue left over from whatever it was that she used to clean" (Loftin 2016, pp.46). Also, "In a video visit on August 21, 2016 with his parents, Dylann talks about chemtrails, the conspiracy theory that the government pumps chemicals into the sky via airplanes. Dylann said that 'they' (the government) are spraying lithium (a mood stabilizer used to treat bipolar disorder) in the chemtrails" (Loftin 2016, pp.46).

Increasing time accessing "fringe"/hate/terrorism discussion groups, videos, conspiracy theories, movements; coupled with significant social isolation so these ideas are unchecked and incubate, heightened agitation if fixed beliefs are challenged/one's mind is made up/difficulty recognizing alternative viewpoints/identifying consequences AND feeling privileged in knowing the "truth" of what the individual perceives is "really going on" (real or imagined); desisting in talking to others about one's ideas.

According to Fisher, Moskowitz and Hodapp (2013) a person with autism is particularly vulnerable to online influences. As is identified in the Forensic Report of Rachel Loftin Ph.D., Dylann explained that the "more extreme views he encountered online were off-putting at first, but he got more and more accustomed to them as he continued reading. He exposed himself to large amounts of racist information online and, in the absence of interpersonal relationships, work, or other hobbies, the interest swelled" (Loftin 2016, pp.49). Furthermore, in the Forensic Report of 12/26/16 by Donna Maddox MD, "His autism spectrum disorder impaired his ability to understand and interact with the world around him. He looked to the Internet for answers to virtually every question he had, whether sexual, medical, political, or about world events. His learning and searching were not guided by

anyone. When he tried to speak with his mother or other family members about his developing ideas (learned from racist internet sites) about race, his fears that blacks were injuring whites, and that the Jewish media were covering it up, his ideas offended others and he learned to keep them to himself” (Maddox 2016, pp.7-8). Importantly, “Mr. Roof had nobody to dispel those ideas in a concrete, meaningful way” (Maddox 2016, pp.8). Within the Forensic Report of 12/28/16 by Robison, it was reported that Dylann, in his FBI interview “would assure the agents that the Internet was his only source of racial knowledge. He said he had not talked to friends or family because, in his words, they would not approve” (Robison 2016, pp.12). “Autistic people who absorb fringe ideas may know that ‘other people’ believe differently, but they become certain they know the truth. They may even begin to feel privileged, being one of a small number of people who know the secret. Fringe sites like Stormfront really foster that thinking” (Robison 2016, pp.22).

Downward spiral - failing at school, job, relationships etc. accompanied by depression and thoughts of suicide and not cooperating with treatment

According to the Forensic Report of 12/28/16 by Robison, he observes that: “The portrait of an autistic child who performed brilliantly through grade school and ran totally off the rails by high school is unfortunately all too common in the autism community” (Robison 2016, pp.9). Robison highlights that this was the case with Dylann: “As he got older, Ms. Roof said her son became increasingly anxious and withdrawn, but he refused to see a therapist or psychiatrist. When she moved to her current residence (about six years ago, by her account) Dylann retreated to his upstairs bedroom and essentially dropped out of society. He let go of the friendships he had, withdrew from most face-to-face contact, and spent all his time online” (Robison 2016, pp.9-10). Mr. Robison later writes that “His grades were slipping, and tardiness and absence were on the rise” (Robison 2016, pp.10). Subsequently, at the age of 16 he stopped attending regular school and started home schooling/on-line schooling (Robison 2016, pp.11). Dylann Roof’s downward spiral also included symptoms of insomnia, quitting the on-line school, not leaving his home, and spending up to eight hours a day on different media. He also reported to different people that his life was falling apart and that he felt sick and depressed. Observations regarding his appearance suggested that he seemed unhappy and looked “tired and lethargic” (Loftin 2016, pp.42). Furthermore, Dr. Loftin reported that in “March of 2009, Dylann reported suicidal ideation and went to the Lexington Mental Health Center. The record indicates he told his mother he would run away and kill himself” (Loftin 2016, pp.47). Also between the ages of 16 and 17 years, he may have lost ten pounds. Furthermore, Dr. Loftin reports that Dylann Roof in 2009, attended the Lexington County Community Mental Health Centre due to his social anxiety. Subsequently he did not follow-up with therapy of taking the anti-anxiety medications that were prescribed. “According to his mother, he said nothing was wrong with him and treatment would be a waste of time” (Loftin 2016, pp.41).

Path-related Proximal and Critical Risk Factors

- a. Harboring a grievance involving a sense of injustice, mission, destiny, loss, desire for revenge, recognition or fame.
- b. Developing ideation surrounding the grievance, leakage of the ideation
- c. Ideation of using violence to resolve the grievance

The previous sections regarding grievances and ideation highlights how these steps of the Path were particularly relevant to Dylann Roof's mass shooting.

Conclusion

A review of the literature regarding autism and violence was presented. Overall, it seems that an ASD is not a risk factor for a mass shooting, and that individuals with an ASD are not more violent than neurotypical individuals. However, there appears to be a small subgroup of individuals with an ASD, who have engaged in *rare* instances of mass shootings. In analyzing these cases further, ASD-related deficits or mental illness were considered to be risk or indirect factors for engaging in a mass shooting. In analyzing the case of Dylann Roof, this seemed to be a reasonable finding; also an additional number of indirect or risk factors have been proposed from this case analysis. The proposed risk factors, ranging from denial/difficulty adjusting to having an ASD, feeling less-than-others, defective and not-normal to engaging in a downward spiral accompanied by depression, thoughts of suicide, and not cooperating with treatment were identified in this study, and are suggested to be risk factors for individuals with an ASD to engage in a mass shooting. The main conclusion, namely that the Path towards Intended Violence is considered the proximal and critical factor for Dylann Roof engaging in his mass shooting was presented. This finding is also consistent with the results, of the centrality of the Path towards Intended Violence, in accounting for the shootings perpetrated by others with an ASD such as Adam Lanza, Dean Allen Mellberg, Elliott Rodger (although there is some doubt if he had an ASD), and Anders Breivik.

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Appendix A.

NEUROPSYCHOLOGICAL PROCEDURES ADMINISTERED

Psychosocial: Clinical Interview; Review of Records. Performance Validity: Word Memory Test (WMT); Victoria Symptom Validity Test (VSVT); Dot Counting Test; Test of Memory Malingering; Reliable Digit Span; CVLT-FC; Embedded Measures. General Intellectual Function: Wechsler Test of Adult Reading (WTAR); Wechsler Adult Intelligence Scale-IV (WAIS-IV). Attention and Executive Function: Selected subtests from the WAIS-IV; Vigilance and Distractibility subtests from the Gordon Diagnostic Systems Continuous Performance Task (CPT); Mesulam Symbol Cancellation SCT); Tower of London – Drexel (TOLDX); Booklet Category Test (BCT); Iowa Gambling Task (IGT); Cognitive Estimation Test; Trail Making Test; Oral Trail Making Test; Selected subtests from the Delis-Kaplan Executive Function System (D-KEFS); Wisconsin Card Sorting Test (WCST); Auditory Consonant Trigrams (ACT); Variability Toolbox. Memory and Learning Function: California Verbal Learning Test – Second Edition (CVLT-II); Logical Memory subtest from the Wechsler Memory Scale-IV (WMS-IV); Brief Visuospatial Memory Test-Revised (BVM-T-R); Rey-Osterrieth Complex Figure (ROCF), Immediate and Delayed Recall; Warrington Recognition Memory Test (WRMT). Language and Related Functions: Behavioral observation; Sentence Repetition from the Multilingual Aphasia Examination (MAE); Comprehension of Complex Ideational Material from the Boston Diagnostic Aphasia Examination (BDAE); Boston Naming Test (BNT); Phonemic (FAS) and Semantic (Animal Naming) Word-List Generation; Kite Picture from The Western Aphasia Battery (WAB). Visuospatial/ Visuoception/Visuoconstruction: Judgment of Line Orientation Test (JOLO); Benton Visual Form Discrimination Test (BVFDT); Benton Facial Recognition Test (BFRT); Hooper Visual Organization Test (HVOT); ROCF, Direct Copy. Sensory/Motor Function: Lateral Dominance Examination; Sensory-Perceptual Examination; Smell Identification Test (SIT); Tactual Performance Test (TPT); Grooved Pegboard Test; Finger Tapping Test; Grip Strength. Emotional Function: Beck Depression Inventory-Second Edition (BDI-2); State-Trait Anxiety Inventory (STAI).