Autism plus psychosis: A ‘one-two punch’ risk for tragic violence?

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Abstract

In the recent series of mass murders in Connecticut, Colorado, Norway and elsewhere, a pattern appears to emerge: young men whose social isolation borders on autism apparently become prey to psychotic ideation, and under its influence commit horrific violence. We argue that in some of these tragic cases, two concomitant diagnoses may be at play, namely autism and psychosis. Autism itself is not an intrinsically violent disorder, and individuals with autism spectrum disorder (ASD) are no more prone to violent behaviors than the general population. The additional presence of psychotic illness, however, may dramatically change the picture. Based on an examination of historical and contemporary data regarding psychosis and violence in patients without developmental disability, we explore three points relevant to the possibility of violence in individuals with comorbid ASD and psychosis. (1) Individuals with ASD have an elevated risk of comorbid psychopathology, including psychosis, which is strongly associated with violence. (2) The content of psychotic ideation has become increasingly violent and lethal in recent decades. (3) It is possible that individuals with ASD are readier than others to act on psychotic impulses.

We conclude 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. Recognizing the increased susceptibility of individuals with autism other neurodevelopmental disability to concomitant psychotic illness increases the possibility that they can be correctly identified and treated, mitigating tragic outcomes.

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Introduction

In the recent series of mass murders in Connecticut, Colorado, Norway and elsewhere, a pattern seems to be emerging: young men whose social isolation borders on autism apparently become prey to psychotic ideation. And under the influence of this ideation they wreak terrible violence. Among the casualties of these assaults is a new fear among parents everywhere that their autistic spectrum children are about to be incriminated. Liza Long's widely circulated blog post ‘I am Adam Lanza’s Mother’, poignantly emphasized such parental quandaries [1]. This alarm has now increased with investigators in the Connecticut shooting finding “numerous books connected to autism” among Lanza’s possessions and comments by neighbors that “he had an autism variant known as Asperger’s syndrome” although the diagnosis remained unconfirmed [2]. What is going on here? What is actually the matter with these young men and how should we as a society conceive their pathology? The question isn’t idle, because diagnostic outcomes.

Let’s approach this issue from a tangent:

Patient vignette 1

A middle-aged woman with severe mental retardation was brought to the ENT service for debulking of a metastatic melanoma of the nose approximately the size of a peach (seen by LW). The tumor had been diagnosed only a few days earlier; yet it had already invaded the brain, leading to a terminal condition. The surgical resident commented on how unfortunate it was that the melanoma wasn’t detected earlier when it could have been easily ablated. A medical student at the time, LW added that the lack of recognition of something literally as obvious as the nose on your face was remarkable, especially given that months, if not years, had surely elapsed from the development of the initial lesion. Another team member speculated this may often be the fate of individuals with disability; few people care, and no one notices until it is too late.

Can we frame this tragic case in the context of mass murder? By all reports, none of these young killers had mental retardation. It is unknown whether they had an autism spectrum disorder (ASD) or other neurodevelopmental condition; similar conjectures regarding psychotic illness and personality disorder remain unanswered.

Overlooking the obvious

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Yet as the investigative authorities unravel their specific back-grounds, our thoughts are drawn to the American children, adoles-cents and adults who do have neurodevelopmental disability and psychiatric comorbidities, and for whom equal access to timely and quality medical care may be as elusive as for the patient with a peach-sized tumor smack in the center of her face.

There is a diagnostic possibility that, similar again to the peach-sized tumor, has been staring at us for some time but that has not been widely discussed.

**Psychiatric diagnoses and juvenile violence**

Indeed, there may be two concomitant diagnoses at play in some of these horrific and heartbreaking situations: autism and psychosis. Autism itself is not an intrinsically violent disorder and there is no evidence whatsoever that young people with ASD commit more crimes than their non-autistic counterparts. Research regarding autism and psychopathy has shown that the two are distinct entities, and that psychopathy does not result from any of the core deficits of ASD [3]. The presence of psychosis, however, changes the picture considerably, and it is not widely recognized that a subset of individuals with autism may also be psychotic [4].

In general, psychosis is associated with violence. Psychiatrist Jan Volavka, in a careful study of violence and psychiatric illness, wrote in 2002, “Patients with major mental disorders who were discharged from psychiatric hospitals, those who are about to be admitted to such hospitals, and those who are treated as outpa-tients show higher rates of violent behavior compared with the general population” [5]. Yet many resist the thought that violence in children and adolescents might be linked to concomitant autism and psychosis.

**Psychosis scripts in history**

Let’s step back a historical pace or two. There is a pool of psy-chotic formulas that any individual with psychosis – adolescent or adult – subconsciously draws upon. This concept is comparable to the pool of psychosomatic symptoms that one of us (ES) postu-lated in *From Paralysis to Fatigue* [6]. Since the Middle Ages there seems to have existed in Western society a ‘pool’ of possible symp-toms, such as paralysis, fatigue, chronic pain and so forth, that indi-viduals who wish to express their distress in a somatic form (‘psychosomatic illness’) are able to fish out and present. Different symptoms are selected from the pool at different epochs. In the nineteenth century, for example, young women often selected paralysis from the pool and ‘hysterical paralysis’ was a familiar pic-ture. After 1900, pain and fatigue became increasingly selected, and paralysis – while still present in the symptom pool – was less frequently chosen.

Similarly, in psychosis there may be a pool of scripts that delu-sional or hallucinatory individuals are able to draw upon, and they select different scripts from this pool in different eras. At the turn of the twentieth century, for instance, the scripts invoked by psy-chotic young men diverged considerably from those of today. Some of the scripts were limited to ideation, and involved bodily ruin, with youths believing they had destroyed themselves with mastur-bation or that their brains had all run out of their skulls [7] (Youth women, by contrast, were often prone to erotomania: the delu-sional belief that some often distant, highly placed figure was in love with them.).

But some early psychosis scripts also involved actions. One common historical theme is violence against mothers. In 1889, a Parisian youth of fifteen, admitted to the Bicêtre hospice, had suffered from ideas of persecution, which he acted out by assaulting his mother, “seeking to strangle her, threatening her with a knife, and accusing her of being ‘an exploiter of nature’” [8]. At the youth wing of the Belgian asylum at Gheel, where boys and young men were boarded out with local families, a familiar theme was assault-ing the farmer’s wife [9]. Yet these big strangling women easily warded off the vexations of these often rather spindly youths and the residence would continue. Attacking one’s own mother or host farmwife remained a common script acted out by young male asylum patients across Europe.

A second common historical script involved rebellion against authority. Europe at the beginning of the twentieth century placed a lot of demands on young males, including military service. Acting out on the parade ground and openly challenging the orders of superiors as the troop stood at attention was a prevalent theme among these recruits. Quickly admitted to the military infirmary, and then to the local mental hospital, other kinds of behavior and ideation made it clear that they were frankly psychotic [10]. Young apprentices challenging the master craftsmen who em-ployed them was another recurrent theme. A 15-year-old apprentice tailor in Leipzig was ostensibly “treated badly” by the master tailor around 1900, became “agitated,” was discharged from the job and admitted to the area mental hospital. As an inpatient, he experienced fits of rage, “hitting out, constantly cursing the master, wanting to strike him down; he hallucinated that the master was standing in front of him, and leapt upon him” [11] (p. 25).

To be sure, there were some troubled young men in those days who contemplated mass murder, yet they were few, and fewer still acted on the impulse (for various reasons, including higher rates of incarceration in mental hospitals and lack of access to large-magazine weapons). It is, interestingly, from the setting of young con-script’s that one of the very few instances of ideation of mass-murder emerges from these early years. A 23-year-old recruit sta-ted in 1883 that he wanted to “execute his parents and siblings because they have not written him.” Yet the idea was only “transitory” [11] (p. 57). It is, moreover, not as though young wo-men were entirely non-violent: a psychotic 25-year-old female agricultural laborer in Estonia struck a fellow laborer in the head with a large rock [12]. Of course these episodes represent violence, yet we are a long way here from a disturbed individual ‘going postal,’ and clearing out a public place with an automatic weapon.

There is a likely connection between early-onset psychosis and autism, and we have elaborated this in a separate review exploring the “Iron Triangle” of autism, psychosis and catatonia [13]. Other work converges on this point as well [14]. On the whole, case histories from early mental hospitals did not include information on the patient’s childhood. The usual observation stated that all was ‘normal’ until the first psychotic break in adolescence. Information for establishing whether the adolescent or young-adult patient had an earlier history of autism or other neurodevelopmental disability is simply not present. Yet we have seen enough cases to provide strong indications of a link between some cases of autism and psychosis, and that point is important as we jump to the present.

**Autism, psychosis and violence today**

The current literature is rather sparse regarding the content of psychotic ideation in adolescents. This is unsurprising, given that ever since Karl Jaspers’ 1913 study of psychopathology, the focus of research has been on the form of illness (affective component or not, age at onset, response to treatment, etc.) rather than on the content of the psychotic ideation [15]. Nonetheless, here is a vignette from the coauthor’s service (LW):

**Patient vignette 2**

A 14-year-old Caucasian male with a history of autism and mild mental retardation was admitted to an inpatient facility for treatment...
of extreme aggression towards others, including biting, kicking, slapping, punching and assault with sharp items including scissors. The patient had previously been discharged from his residential treatment center due to frequent and uncontrollable assault towards staff and peers, including attempting to slit another child’s throat with a broken toy. The youngster had also (non-fatally) stabbed his mother in the back with a kitchen knife after a request was denied. His aggression towards residential care staff had sadly resulted in retaliatory beatings on two separate occasions documented by the authorities. The patient presented as a sullen and irritable young man obsessed with repetitively leafing through a booklet of laminated pictures of monsters, distorted and grisly dolls and figures downloaded from violent Internet sites, as well as weapons and war figures. He also enjoyed looking at anatomical pictures of eyes and hearts, including one bizarre image of a human heart in a cage. The slightest provocation, for example cold french fries on his tray, could result in aggressive charges towards staff requiring a 7-man takedown for safety. The patient had exhausted myriad psychotropics from all US-available classes, and was ultimately stabilized only on clozapine, which allowed for a safer discharge into a supervised facility where family and community activities could safely resume. Alternative leisure items were also implemented and Internet access allowed only under direct adult supervision.

This tragic story points to a larger phenomenon. Currently estimated to affect a whopping 1 in 88 US children, autism spectrum disorders are known to have many comorbidities, most commonly intellectual disability (ID) [16]. This is highly relevant to the mental health professional caring for these patients, as both autism and intellectual disability are associated with a higher incidence of psychopathology that may span the full Diagnostic and Statistical Manual (DSM).

The increased risk of psychopathology in children and adolescents with ID was first documented in 1970 in the Isle of Wight studies, where psychiatric problems were found in 30–42% of individuals with ID as compared to only 7% of children with normal intelligence quotients [17]. Similar results have been subsequently documented in multiple international studies, with the general consensus of a 3 to 4-fold increased risk of psychiatric illness in individuals with ID as compared to the neurotypical population [18–21]. Best practice recommendations by the American Academy on Intellectual Disability for care of such patients includes “assessment for the full range of DSM psychopathology and prompt implementation of the same illness-specific treatment paradigms” as best supported by the medical literature for similarly-diagnosed patients with normal intelligence [22].

Unfortunately, the timely recognition and treatment of psychiatric illness in individuals with comorbid developmental disability is not always forthcoming. Many of these patients fall victim to “diagnostic overshadowing”, where bona fide psychiatric symptoms are falsely attributed to the underlying developmental disorder and simply dismissed. Even with the best of clinical intentions, comprehensive diagnostic assessment may remain challenging; theories behind this difficulty include impaired communication, psychosocial masking related to limited social and life experiences, baseline exaggeration related to underlying cognitive deficits, and behavioral patterns — together with the presence of developmentally appropriate phenomena — that may masquerade as psychiatric symptomatology [23]. Nonetheless, significant progress has been made in the accurate diagnosis of mental illness in intellectual disability, and this goal is within the attentive clinician’s grasp. One of the most comprehensive current tools is the 2007 Diagnostic Manual-Intellectual Disability (DM-ID) published by the National Association for the Dually Diagnosed and the American Psychiatric Association; this manual allows for the facilitated diagnosis of the full span of DSM psychopathology in patients with ID [24].

Adult psychosis, especially schizophrenia, has been clearly associated with violence in studies across different countries and cultures [25]. But this association has been somewhat obscured in child and youth populations. Of course some factor other than the illness itself may be responsible for violent outbursts. Yet we find the evidence for the psychosis-violence hypothesis robust. One meta-analysis encompassing 204 studies found psychosis associated with a 49–68% increase in risk of violent behavior [26]. The risk of violence of any kind in first-episode psychosis is, according to Matthew Large and Olav Nielssen in Sydney, 35 percent, while that of serious violence is 17 percent [27]. A UK study of 205 adult inpatients with diagnoses including schizophrenia, schizoaffective disorder, bipolar disorder, major depression or substance-induced psychosis revealed that 49% of males and 39% of females had demonstrated aggressive behavior in the six month prior to admission, with 47% of males and 17% of females having at least one violent crime conviction. These severely mentally ill inpatients also had elevated rates of victimization, with 57% of men and 48% of women having been assaulted themselves [28]. (Other studies find the same unfortunate risk of victimization among individuals with major mental illnesses, as well as elevated risk of suicide and self-harm [29].) In a study of 34 patients attending a clinic for high risk of developing psychosis, 79.4% had a history of violence, and 29% had convictions for violent offenses [30]. Very recent literature also associates bipolar disorder with violence, most prominently during mania, mixed episodes or in the presence of psychosis. In the 2012 US study of 255 adults with bipolar disorder compared to 85 adults with non-bipolar psychopathology and 84 adults without psychopathology, those with bipolar disorder were found to have higher total and subscale scores on an Aggression Questionnaire (AQ); total AQ score, hostility and anger were further elevated in those with acute psychosis [31].

Similar results are found in adolescents with psychosis [32]. Yoshihiro Kinoshita and collaborators reported of a population of psychotic adolescents in Japan, “The greater the number of such psychotic –[like] experiences, the higher the risk of violence” [33]. A 2012 British study compared 39 adolescent patients with co-occurrence of aggression and psychosis to 1.346 patients with aggression only and 173 patients with psychosis only, and found that the co-occurring group also demonstrated increased rates of depersonalization/derealization, intrusive thoughts, restlessness, irritability, antisocial behaviors, special education needs, lower socioeconomic status and past contact with the legal system. These comorbidities were suggested as potential risk factors for further development of aggression and violence in the psychotic adult [34].

What does all this mean for our understanding of young men who commit mass murder?

Three points to take home

On the basis of these historic and contemporary data regarding psychosis and violence in patients without developmental disability, we explore three points relevant to the possibility of violence in individuals with autism spectrum disorders and concomitant severe psychopathology, namely psychosis.

First point: Studies of psychiatric illness in autistic individuals, including those with normal intelligence, support the long-documented risk of psychopathology in this population. This includes both psychotic and non-psychotic illness. A 2009 study of 122 adults with normal-intelligence-ASDs recruited from Swedish and Parisian expert diagnostic centers revealed mood disorders as the most common comorbidity afflicting 53% of subjects, but also documented psychotic illness in 12% [35]. Another review found “schizophrenia-type illnesses” in 10% of patients with ASDs, with additional reports documenting frank hallucinations, paranoia and delusions in patients with ASDs, leading to the proposal that ASDs might actually be a “vulnerability factor” for the development of psychosis [36,37].
The incidence of violent crime among individuals diagnosed with autism spectrum disorders is higher among those who are also psychotic. A Swedish national study in 2009 of 422 individuals hospitalized with autism or Asperger syndrome found that, among ASD individuals who had convictions for violence, 25.8% also had schizophrenia or psychosis (diagnoses given in a national data base); by contrast, among ASD individuals with no violence convictions, only 9.2 percent had schizophrenia or psychosis. The incidence of schizophrenia in the violent ASD patients was, in other words, almost three times as high. (Among those with convictions for violence, 38.7% had a “co-morbid” psychiatric diagnosis of some kind; among those with no violence only 12.8%) [38]. It is crucial to point out, however, that from the fragmentary information available the risk of violence in non-psychotic autistic patients seems to be no higher than among the population as a whole. Yet the main point is that individuals with autism have an elevated risk of psychosis (and other psychopathology), and psychosis is associated with violence in general and autistic pediatric and adult populations.

**Second point:** The content of the ideation in psychosis over the past century seems to have become much more violent. In 1990, psychologist John Junginger at the State University of New York campus at Binghampton, found in a study of psychotic in- and out-patients that 40% of the 51 individuals who experienced command hallucinations complied with them. (An additional number couldn’t recall if they had complied or not.) [39]. In a 1996 study of some of these “very dangerous commands” Junginger found at least partial compliance: “loading a gun and driving to the house but not shooting anyone following a command to ‘kill everyone in the house!’”[40] In the numerous cases of psychosis we have studied in the historic group around 1900, this kind of violent command, nearly acted on, was highly unusual. Yet in the mental hospital population in New York State that Junginger studied in the 1990s it was apparently common. Olav Nielsens and collaborators, first at St. Vincent’s Hospital in Sydney, then at the Prince of Wales Hospital in Randwick, NSW, studied 88 people charged with homicide offences in New South Wales between 1993 and 2002. “Evolving auditory hallucinations and delusional beliefs that led the person to believe they were in danger were the symptoms strongly associated with lethal assault,” they concluded [41]. Dale McNeil and co-workers at the Langley Porter Psychiatric Institute in San Francisco found that “patients who experienced command hallucinations to harm others were more than twice as likely to be violent” [42]. In a PubMed/MEDLINE study of schizophrenia and violence, Nielsens and co-workers calculated that “about 1 in 600 patients with schizophrenia presents for treatment by committing a homicide, compared to an annual rate of homicide after treatment of about 1 in 9,000 patients per year” [43]. These are really very high numbers, completely off the scale compared to homicides committed under psychosis in the historic period. (Paris psychiatrist Etienne Esquirol, among the founders of modern psychiatry, proposed the diagnosis “murderous monomania” in 1838 but the most awful example he could conceive was a mother who had murdered her four children [44]: we are far away from mass murder here.)

How about the traditional psychotic script of attacking one’s mother? That script seems to have been replaced in favor of gender neutrality. In a study of 150 cases of parricide (killing a parent, or both parents) in the U.S., Kathleen M. Heide at the University of South Florida and Denise Boots at the University of Texas at Dallas, found that, of 150 parricide cases reported in the media, the victim was the mother 61 percent of the time, the father 63 percent [45].

The larger point is that modern psychosis scripts are increasingly violent and lethal. Violence may no longer be directed against the mother, but randomly, against “society”.

**Patient vignettes 3 and 4**

The following communication was received by one of the authors (LW):

*I am a mother writing to you in a desperate plea for help. My son is 10 years and 11 months old and currently in his seventh psychiatric hospitalization with multiple diagnoses including pervasive developmental delay, ADHD, ODD, bipolar disorder and schizophrenia tendencies. We have been on so many combinations of medications. His first hospitalization was at age 5 for aggression and a suicide attempt, with two admissions at age 7, two at age 9, and in the past year. All hospitalizations were due to aggressive behaviors, suicidal attempts, homicidal threats to kill teachers, staff members, my husband (his stepfather of 5 years) and myself, as well as threatening to bomb or set fire to hospitals and school. He has had auditory and visual hallucinations for the past 3 years but they are increasing fast. During his meltdowns he seems almost 'possessed', unaware of his surroundings, and unable to make sense of anything. There is a maternal history of adolescent-onset schizophrenia.*

The following was posted on an Internet site of adoptive parents of special-needs children:

*I have a child that spent last year at a day treatment center, he did awesome there, we had him at night and on the weekends. He has a large amount of psychotic disorders, 7 years old and pretty scary stuff. This year he’s home and we put him back in regular school with services, because we could no longer afford the treatment center. And for the first time in 5 years that we have had him I am seriously wondering if we can keep doing this. Today has been insane, and I’m just ready to break down and hand him over somewhere. So tonight as I tried so hard to hold it all together and put him to bed...kissed him, tucked him in. I got a “I hate you and I’m going to light your bed on fire while you’re sleeping!” Great way to end my day. People have often asked why we kept him when we knew he had so much going on. But there’s that very small part somewhere inside that we see once in a blue moon that keeps us loving him. And he has hopes and dreams that we would love to see come true.*

In other words, autistic and other developmentally-disabled children with concomitant psychosis are indeed capable of violence and their families are deeply concerned about the possibility.

**Third point:** Is it possible that youth with ASD are readier to act on psychotic impulses than their non-autistic counterparts? This has been a red thread weaving itself through the enormous autism literature and begins with the earliest diagnoses of autism in the 1920s. Here is “[J.D.],” a twelve-year-old Russian boy at the time of his admission to the school for special children at the Psychoneurological Children’s Hospital in Moscow in the early 1920s:

“As a child he was torpid, kept more company with the adults and avoided associating with the children, justifying himself by saying it was uninteresting for him to play with them; no love for toys. He was always taciturn and lived in his own inner world.” At ten he started his schooling, where he “found no connection to his classmates.” He was described as “embittered and unbearable; he has no fondness for people and criticizes everybody.” Admitted to the Moscow special school, he has “no interest in his peer group and takes no part in their play. He displays a negativity towards life and people: ‘Nothing pleases me, everybody is insulting me.’. Admitted to the Moscow special school, he has “no interest in his peer group and takes no part in their play. He displays a negativity towards life and people: ‘Nothing pleases me, everybody is insulting me.’. His classmates dislike him because he goes on about justice but he himself is crassly egocentric.” The diagnosis of the clinic physicians: “an introverted type, autistic” [46].

This is certainly not to say that eighty years later, a latter-day “J.D.” would go on to become a mass murderer. But he clearly possessed little knowledge of nor interest in the general rules of the game that one absorbs in growing up.

Modern literature has explored moral judgment in autism, and documented that individuals with ASDs demonstrate deficits in
understanding and predicting others’ behaviors, including their desires and beliefs. Uta Frith and Simon Baron-Cohen have proposed that some individuals with autism have impairments in ToM (Theory of Mind), defined as the capacity to attribute mental states both to oneself and other, and a necessary ability in developing moral judgments [47,48]. A 2012 French study using three non-verbal cartoon scenarios – in which an agent’s causal role and intent to harm varied – were presented to 16 individuals with normal development and 16 adults with ASDs, demonstrating that while there were no differences in judgments of suffering or causality, the subjects with ASDs did have more difficulty with intentionality and moral judgments [49]. Another French study evaluating moral judgment in adults with Asperger syndrome or high-functioning autism detected difficulties in moral justifications and evaluation of the severity of transgressions, with the latter likely related to baseline Theory of Mind deficits as discussed above [50].

NB: None of these studies reported dangerous, violent or “immoral” behavior in the subjects. Anecdotally, one of the authors (LW) has found healthy autistic clients to often be so strictly rule-governed that they are deeply offended by the most minor of offenses, such as jay-walking or using expletives. Yet, the authors contend that if and when such individuals become psychotic, they likely merit special attention including rapid access to quality mental health services.

**Bottom line**

There may be a kind of one-two “vulnerability punch” where individuals with autism spectrum disorders have a baseline higher risk of psychiatric illness, not infrequently including psychosis. Psychotic illness is linked to increased rates of violence in adolescents and adults both with and without autism and intellectual disability. Psychosis “scripts” have developed over the past century to include significantly more violent themes. References to murder, sometimes systematic, seem to occur now with greater frequency than in the past. To be sure, these scripts have existed in the Western psychosis pool since time out of mind. Yet only now, for reasons that are quite unclear, are they being often drawn upon. We find the mandatory indictment of ‘video games’ much too facile: The patients we describe have been compromised by a double assault of illness.

In the same way that the disabled woman with the peach-sized tumor in the center of her face didn’t need to expire from it, we believe that individuals with autism and other neurodevelopmental disability with comorbid, potentially dangerous, psychiatric disturbance can be identified and treated, to the great benefit of the individual and society.

**Conflict of interest**

None.

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