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# Severe Mental Disorder and Terrorism: When Psychosis, PTSD and Addictions Become a Vulnerability

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## ABSTRACT

There is no empirical evidence to suggest that terrorism is driven by mental illness in the majority of cases. However, when terrorist acts are planned or executed by individuals with mental disorder, possible functional links between the two need to be explored in order to delineate risk and inform approaches to risk management and reduction. This paper explores such functional links, their complexities and implications for clinical interventions, with a focus on psychosis, PTSD and addictions. The challenges of establishing the precise role of mental disorder, especially where there is co-morbidity and a range of complex interacting symptoms, are explored. Finally, the limitations of the existing research in the field of mental disorder and terrorism, and the challenges of extrapolating from such research to practice, are addressed.

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## General introduction to mental illness and terrorism

There has been a longstanding debate about the links between mental illness and terrorism, with most research concluding that mental illness does not predict risk in the general population (O'Driscoll, 2018). Earlier research has been met with robust critique for assuming links between mental illness and terrorism without providing evidence for such links (Corner et al., 2016; Gill & Corner, 2017; O'Driscoll, 2018). Nevertheless, some studies have shown that sub-groups of terrorists, such as lone actors, may show higher prevalence of mental illness (Corner & Gill, 2015; Gruenewald et al., 2013) and that milder rather than severe forms of mental illness may characterise some terrorists, including leaders of terrorist cells and groups actors (Gotzsche-Astrup & Lindekilde, 2019). However, the nature of the terrorism-mental illness links is less well established by the research and remains the biggest gap in the field.

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The many methodological limitations of research in mental disorder and terrorism and the implications of such limitations for the field are well cited in numerous reviews (Gill & Corner, 2017; Misiak et al., 2019; O'Driscoll, 2018) and will not be repeated herein. Numerous research reviews and critiques published in recent years have notably reached a consensus that the existing findings are limited in depth and breadth, that the role of mental illness in terrorism pathways is complex, heterogeneous, individualised and most likely indirect, cumulative and interactive with other factors (Al-Attar, 2019; Bhui et al., 2016; O'Driscoll, 2018; Schulten et al., 2019). As a result, there is consensus that mental illness is not a direct risk factor and that a more nuanced understanding of the links between mental illness and terrorism is warranted in order to inform sound practice (Schulten et al., 2019). The gap in knowledge of the role played by mental illness in terrorist pathways, therefore, needs to be addressed urgently to enable practitioners to adopt clinically sound, forensically relevant practice. The current paper seeks to offer a step towards addressing this gap by offering clinically, forensically and operationally informed hypotheses on the role played by mental illness in shaping vulnerability to terrorism, as an aid for formulation and hypothesis testing by forensic mental health practitioners.

### **Role played by specific mental illnesses in shaping vulnerability to terrorism – the role of push and pull factors**

In the current paper, the reader's knowledge of the different mental disorders is assumed, as is basic knowledge of individual case formulation approaches in forensic mental health practice. However, in order to formulate the role of specific mental illnesses in the context of terrorism, it is important to clarify how vulnerability to terrorism can be construed. One framework through which to conceptualise vulnerability and risk of terrorism is that of 'push' and 'pull' factors (Aho, 1988; Altier et al., 2017; RAN, 2016). For clinical practice purposes, push factors are any aspects of the individual's functioning, social environment or mindset that can push them towards extremist ideas, groups and behaviours. Pull factors are any aspects of extremism that make it appealing and resonant with the individual, and hence pull them in. Thus, a mental illness could generate push and pull effects by creating a susceptibility that may render radicalizing influences more potent (Gill & Corner, 2017). Any mental illness or its composite symptoms and resulting experiences may contextualise particular push and pull factors for an individual (Al-Attar, 2019; O'Driscoll, 2018). Therefore, the role of mental illness in terrorism can be explored through such a framework, examining how specific aspects of a given mental illness and its experience may contextualise push and pull factors. This framework lends itself well to informing practice by signposting to approaches that reduce the push and pull factors by either

alleviating mental illness where possible or if this is not realistic, to offer alternative channels to meet the needs that push the individual towards terrorism whilst weakening the pull of terrorism and strengthening the pull of healthier alternatives.

The remainder of this paper sets out to hypothesise how specific mental illnesses may shape vulnerability to terrorism by impacting push and pull factors and explores the implications of such possible contextual links for diversion and resilience-building approaches that can be adopted by practitioners. Three categories of mental illness that are often cited to have increased prevalence in existing research are examined, for illustrative purposes, namely psychosis, post-traumatic-stress disorder and substance abuse/addiction. For each mental illness, the possible role that different symptoms and features may play in contextualizing push and pull factors will be explored, and the implications of such contextual links for enhancing resilience discussed.

## ***Psychosis***

### ***Role in shaping push and pull factors for terrorism***

Psychotic illnesses have been reported in a number of studies of terrorism perpetrators, with some studies suggesting a heightened prevalence amongst certain sub-groups, such as lone actors (Corner et al., 2016; O'Driscoll, 2018). Studies of very specific ideological and geographical cohorts have also found heightened prevalence of psychosis, including a study of individuals in the Netherlands who sought to fight in Syria (Weenink, 2015). Other studies have found that whilst psychosis was present in some individuals within its cohort, there was no clear evidence of heightened prevalence cross the cohort, when compared to prevalence in the general population. Such a finding was reported in studies of American right wing extremists, French Jihadists and foreign fighters (Schulten et al., 2019). If the findings are broken down, they appear to provide a complex picture, with some forms of psychosis such as schizophrenia being higher than others such as delusional disorder (Corner et al., 2016). Overall, the findings across research studies are inconsistent and the causal role played by psychosis, if any, remains unknown, with hypotheses on the nature of the links being generated only in very recent years (RAN, 2019). Whilst some prevalence studies have used psychotic cases with other co-morbid mental disorders, making causal or even any unilateral links between psychosis and terrorism difficult to discern, other studies have used questionable proxies of psychosis and terrorism in non-psychotic, non-terrorist student samples (Mededovic & Knezevic, 2019). Even in studies employing terrorist cases with diagnosed psychosis, the findings on prevalence and linkage vary. One of the many reasons for the varied and at times contradictory findings on links between psychosis and

violence may be that psychosis is too general a clinical construct to be considered as one vulnerability/risk for any behaviour (Al-Attar, 2019).

Specific facets of psychosis need to be examined separately and their collective interactions understood in order to delineate the nuanced and complex role psychosis may play in shaping vulnerability. Research on psychosis and general violence has linked different symptoms to various forms of violence, postulating complex and often indirect mechanisms in the links between psychosis and violence (Bjorkly, 2002a, b). It should be noted of course that the features of psychosis that have been found by research to link to violence may or may not link to terrorism and caution should be exercised in generalizing findings on psychosis-violence links to the terrorism field without considering the distinct nuances of terrorism. For example terrorism includes many non-violent acts and traditional definitions of terrorism-related violence construe violence as an instrumental behaviour aimed at achieving a broader messaging objective beyond the individual or their immediate psychological needs, in contrast to the mainly reactive, impulsive, emotionally-driven violent acts researched in most violence-psychosis linkage studies. Nevertheless, terrorism-related violence may in some individuals be reactive or driven by needs associated with psychosis and in such cases research on psychosis-violence may offer a useful body of knowledge from which to extrapolate. As is often found in the violence literature, psychosis may interact with other social and psychological variables to heighten risk (Schulten et al., 2019) and hence reductionist causal approaches should be avoided even when psychosis does link to terrorism.

The existing literature affords little insight into how psychosis can shape vulnerability to terrorism specifically and the limited hypotheses purported refer to broad mechanisms. For example, extremist ideas are purported to offer structure and meaning to an individual with otherwise confusing ideation and derailed thought (Schulten et al., 2019). It is noteworthy of course that terrorism is amongst the most salient of topics today and social media and constant newsfeeds may expose the public to often distressing accounts of terrorism on a regular basis (Al-Attar, 2019). On this basis alone, it would be expected that many psychotic individuals with chaotic thinking, anxiety and loss of touch with reality who are exposed to such information and imagery may become pre-occupied and threatened by terrorism. This does not in itself signal risk or imply a mechanism that links psychotic ideation around terrorism to violence. Ideation around terrorism is bound to feature more as society becomes more concerned with the terrorist threat. Hence, psychotic individuals may frequently make references to terrorism that may or may not necessarily link to heightened risk of committing terrorism, and given the topical nature of terrorism it is imperative that mental health practitioners develop approaches to establishing if and how specific aspects of psychosis

may become vulnerabilities for extremist action (rather than just ideation). This will be the focus of the current section.

Each aspect or symptom of psychosis will be examined, with hypotheses generated about how it may come to act as a vulnerability for engaging in terrorism, by shaping push and pull factors that impact an individual at a given time. As with the broader research on psychosis and violence, 'positive symptoms' of psychosis are more likely to act as vulnerabilities although the role of some neurocognitive impairments in lifting inhibitions may also be worthy of consideration.

**Delusions.** Given the salience of the terrorist threat, individuals prone to paranoid delusional ideas may develop a belief that they are in danger from terrorists or that the terrorists are protecting them and others from danger. In the former instance, they may view violence or other harmful means against those who may symbolize terrorism (whether this symbolism is based in reality or delusion) as necessary, and carry out acts of violence against such targets. In the latter instance, they may seek to contact terrorists or those they believe are linked to them and this could open them up to exploitation, recruitment or illegal behaviours (e.g., extremist materials online). The targets of violence in individuals with delusions may not necessarily be the targets of the terrorist groups or indeed the terrorist groups themselves. Delusional Misidentification Syndromes in which an individual or group are believed to be someone else, often hostile and the source of threat, may shape risk of violence (Horn et al., 2018). It is important to understand the individual's specific belief system and not assume it from the extremist rhetoric they may verbalise, in order to assess the targets of their risk. It is also important that risk is not simply assumed to correlate with the degree of bizarre content, and delusional beliefs of any kind that link to perceptions of the need to act violently are considered, even if these relate to more commonly held conspiracy theories or indeed real life events (e.g., such as terror attacks).

Whatever type of delusional ideation, risk is most likely when the beliefs are associated with intense perceptions of threat and loss of a sense of control over the threat, symptoms labelled 'threat control override' or TCO symptoms (Stompe et al., 2004). The sense of threat, loss of control over the threat and anger arising from the threat may accentuate risk (Coid et al., 2013; Skeem & Mulvey, 2002; Ullrich et al., 2014). Research has shown that risk of violence may be further compounded when delusions are associated with threat, high levels of anxiety, delusional distress, anger, and irritability (Bjorkly, 2002a). In addition to persecutory and paranoid delusions, any other form of delusions that may generate a sense of threat can contextualize risk of violence. For example, delusions of reference may lead to messages and news coverage about terrorism/counter-terrorism (e.g., threat messages issued by terrorist perpetrators or organisations) being considered to be

personally addressed to the individual. Somatic delusions may lead an individual to believe that a group of people has physically harmed or interfered with them physically and terrorism may be believed to be the cause or solution to that physical threat. In all these instances the delusional belief may drive vulnerability to extremist violence if the individual believes that violence will remove the threat or danger (Al-Attar, 2019). As well as the nature and intensity of perceived threat, practitioners need to explore the intensity of the delusional fixation, the delusional distress it generates and the subject(s) it attributes blame to, in order to appraise the drivers of the vulnerability/risk and potential targets of any violence that may be enacted (Al-Attar, 2019).

Finally, it may be worthwhile considering other forms of delusions that may contextualize risk of extremist violence specifically but which may not entail threat, distress or negative emotionality. Other forms of delusions that may create vulnerability could include delusions of grandeur, where the individual believes they have an important role or duty to eradicate a threat or enemy by engaging in terrorism. Inversely they may view their grandiose role as defeating terrorists by engaging in what they consider to be unofficial violent 'counter-terrorism'. Of course, this could combine with delusions of threat but the primary driver may be ideation unrelated to threat and control over-ride as such.

**Hallucinations.** Whilst command hallucinations to commit acts of terrorism may drive vulnerability/risk, command hallucinations on their own are rarely sufficient drivers for violence, according to research (Bjorkly, 2002b). Other interacting factors may shape vulnerability, such as the existence of supporting delusional beliefs and other hallucinatory experiences (e.g., visual hallucinations) that are consistent with and strengthen the power of the command hallucinations. Where the individual experiences commanding voices, their perceptions of the voices (or figure behind the voice) is important to understand, with particular attention being paid to their trust in, fear of and relationship with the source/voice, their personal appraisal of what will happen to them if they don't comply with the command and their perceived ability to refuse the command (Bjorkly, 2002b). The effects of the commands and any other comments made by the commanding voice on the individual's emotional state (e.g., inducing anxiety, fear, or anger) should also be considered. Overall, the individual is more likely to comply with a command if they experience threat and distress caused by the command hallucination, if it is strengthened by other congruent symptoms, if the individual feels that they can't cope with the threat and either trust or fear the commander and if they believe there will be bad consequences if they don't comply (Bjorkly, 2002b). Hence all these subjective features of command hallucinations and associated symptomatology may shape push factors to vulnerability/risk. Pull

factors may be any factors that add congruence and credibility to the voice's command (e.g., by highlighting the threat the voice is commanding violence against). For example, any information depicting the threat that the voice is commanding violence against may have a strong pull if it reinforces the message and emotions generated by the commanding voice.

***Negative symptoms & neurocognitive impairments.*** Whilst the above-mentioned 'positive' symptoms may create push factors for extremist violence or make some forms of violent extremist groups and acts more resonant (have more pull), and hence may act as direct vulnerabilities, it is important to consider how 'negative' symptoms can compound such vulnerabilities. Push factors fuelled by positive symptoms may not be sufficient to drive violent action without the cognitive, social and behavioural impairments that arise from other, neurocognitive symptoms of psychosis (Al-Attar, 2019). Psychosis may be accompanied by reduced frontal inhibitions and a number of frontal executive impairments, which collectively lead to an impaired ability to monitor and control one's behaviour, as well as to attention difficulties and disorganised thinking that make it difficult for the individual to filter relevant information, process it objectively, identify its sources, and link it with its likely consequences. There may also be 'state' (rather than trait) impairments in theory-of-mind and social cue processing, making it difficult for the individual to recognise their own thoughts and motivations, those of others and the link between the two. The result of the aforementioned neurocognitive features may be chaotic thinking and behavioural disinhibition that generate erroneous conclusions, confusion/fear, poor impulse control, difficulty with social interactions, poor conflict resolution skills, impaired problem-solving, and a general sense of inefficacy and threat (Al-Attar, 2019; Green, 1996).

The aforementioned sequelae of negative symptoms may constitute vulnerabilities in three ways. Firstly, they may exacerbate the push and pull effects of positive symptoms. For example, they could render the individual more prone to confusion, threat, distress and conflict. Secondly, negative symptoms may reduce the individual's ability to manage and seek support for their positive symptoms by diminishing the cognitive reasoning and communicative abilities that would otherwise equip the individual to manage and seek help for their positive symptoms and lifting the behavioural inhibitions that would normally prevent them from acting impulsively on their positive symptoms. Thirdly, negative symptoms may in themselves constitute a vulnerability if they reduce resilience to stress, threat and conflict, and increase social adversity, dejection and hopelessness. For example, where the individual's impaired social cognitive functioning and reduced social inhibitions can lead to social conflict, hostile interactions, negative reactions from others, and as a result fear, a sense of threat, anger and grievance,



terrorist causes, groups and ideologies may offer a narrative that purports to make sense of or redress their experiences. Alternatively, negative symptoms may cause social and indeed sexual dysfunction and isolation that could lead to a loss of social, emotional and occupational capital, alienation, low self-esteem, depression and possible anger and distress. These secondary consequences may increase vulnerability to exploitation by extremists, especially when the individual lacks insight into their difficulties and may be susceptible to attempts to offer meaning, belonging, reassurance and relief, making the pull of extremist groups stronger. Where social threat, conflict and adversity lead to anger and grievance, the individual may find resonance in extremist grievance/threat narratives that come to have a pull. Thus, not only could positive symptoms create terrorism-related ideation and threat, but the negative symptoms may add to the threat and diminish one's ability to cope with it, creating stronger push and pull factors that may be exploited or find an outlet in extremist groups, online or offline.

***Suggestibility/susceptibility.*** Where a psychotic individual experiencing the above symptomatology and impairment of functioning is exposed to radicalisers online or offline, they may be emotionally and cognitively suggestible and ill-equipped to recognize their own vulnerability and the radicalisers' agenda (Al-Attar, 2019). Traditional terrorist organisations in past decades would typically avoid recruiting individuals with diminished cognitive and emotional resilience, chaotic thinking and lack of behavioural inhibition, as they relied on self-disciplined recruits who can lie dormant and avoid detection, for operational survival. Modern-day online recruitment, by contrast, may prey on very different profiles of individuals using different psychological and social influence tactics (Guadagno et al., 2010; Horgan et al., 2017). Erratic mindsets and psychological instability no longer constitute operational risks where individuals are recruited remotely online and inspired through remote anonymous recruiters and electronic transmission of ideas and knowledge. Such vulnerable individuals are seen as dispensable lone actors whose erratic behaviour would not endanger the security of the group. Hence, much of online and remote recruitment does not hinge on self-discipline and clarity of thought; on the contrary, the lack of such functions may be seen as making the recruits amenable to persuasion and control and therefore open to quick and easy exploitation. Should they carry out acts of terrorism in the name of an organization, these acts are then claimed by the group and the perpetrator's psychological frailties do little to diminish the organisation's tactical and symbolic gains. Thus, terrorist propaganda may be consumed by or in some cases targeted towards vulnerable (including psychotic) individuals in the online space, and this may create a vulnerable and often undetected environment for such individuals, especially when they have a heightened susceptibility.

***Shifting & idiosyncratic ideation.*** Vulnerability to engagement in terrorism may unfold without deliberate exploitation or even online contact with extremists and terrorist organisations. Psychotic individuals may be vulnerable to narratives and imagery online and offline, especially when graphic visual imagery feeds into their ideation and sense of threat (Al-Attar, 2019). Self-radicalisation may occur and the resulting ideation may or may not correspond to the ideology of the terrorist organisation or cause that fuelled the ideation. A psychotic individual may develop very idiosyncratic ideation that shares narratives with terrorist groups or causes but which takes on different meaning and fuels different thoughts and behaviours. A target may be linked to delusional beliefs and loose associations and hence not be predictable from the terrorist cause alone. Delusional beliefs may also be dynamic (Appelbaum et al., 2004) and where they link to risk, their shifts may correlate to shifts in risk. It is therefore important to understand the idiosyncratic and shifting reasoning of each individual and not infer their beliefs and risks based on static, coherent terrorist groups/causes that inspire their ideation.

***Masking effects of negative symptoms.*** Of course it must also be emphasized that whilst psychotic individuals may experience significant distress, adversity and impairment as a result of positive and negative symptoms of psychosis, they may lack the ability to effectively identify the causes of their difficulties and to communicate such difficulties to others in order to seek support, as a result of their negative symptoms. For example, the individual may have flattened affect and alogia that limits their expression and communication. In such instances, vulnerability may go undetected until the individual engages in an act of violence.

Inversely, the psychotic individual may express their ideation and sense of threat but do so chaotically and incoherently due to disorganized and tangential thinking, derailed speech and bizarre communications and behaviours. In such instances, the content of such communications may be dismissed as inconsequential and assumed to be transient, missing any emerging vulnerability.

***Co-morbidity.*** Psychotic symptoms may be compounded by other symptoms to drive vulnerability. For example, in cases of schizoaffective disorders whereby psychotic and mood disorder symptoms may interact, with the latter symptoms having an additive or interactive effect on vulnerability. Co-morbid psychiatric disorders, including for example, depression, anxiety, ADHD, autism-spectrum disorder, personality disorder or substance misuse disorder, may also compound vulnerability and risk or at the very least render it more complex and multi-faceted if not greater. This is especially true where the combination heightens levels of acute distress, fear and threat, confusion

and chaotic thinking, anger, irritability, and restlessness, and loss of cognitive, behavioural, social and moral inhibitions (Al-Attar, 2019). Research in the field of terrorism and mental illness is not advanced enough to shed light on the impact of co-morbidity on risk, unlike research on violence and mental illness (Elbogen & Johnson, 2009) and hence co-morbidity should not be automatically assumed to be an added risk. However from a clinical formulation perspective, it is important to consider the greater complexity that is generated by co-morbidity and to maintain an open mind about the role, if any, of any disorder and where a role is evident, to consider 'how' each disorder contributes to push and pull factors rather than place emphasis on the 'how many' disorders are indicated. Therefore the focus should remain on the qualitative rather than the quantitative aspects of mental illness in shaping risk/vulnerability.

### ***Implications for resilience building***

Assessing vulnerability in psychotic individuals needs to be a nuanced and dynamic process that is reviewed with any changes in symptomatology that act as a push factor as well as changes in any external pull factors. It is important that practitioners establish a detailed history of past and present psychotic symptoms as well as co-morbid illnesses, with a particular focus on the specific content, nature, intensity & perception of the symptoms and the subjective experience they generate. Attention needs to be given to any threat-control-over-ride (TCO) symptoms, distress and attributions about commanding voices/sources and the individual's perceived ability to cope with them, where such symptoms take on terrorism themes. Where complex delusional ideation is involved, it is important to develop a deep understanding of the individual's subjective and idiosyncratic belief systems and not to assume that their beliefs concord with the terrorist ideologies and objectives of groups they endorse. In addition to positive symptoms, the assessment needs to take into consideration negative symptoms, including neurocognitive factors. The impact of both positive and negative symptoms on the individual's cognitive, emotional and social functioning and behavioural inhibition needs to be considered when examining push and pull factors.

It is always important to consider that links between psychotic symptoms and vulnerability to terrorism may be direct, indirect, or indeed non-existent. Where links exist, they may operate in interaction with co-morbid symptoms and external events. Inversely, practitioners need to be open to the possibility that psychosis may act as a protective factor against terrorist engagement. For example, in individuals who are engaged in terrorism but who cease such engagement during psychotic episodes or due to negative symptoms once the positive symptoms subside. Furthermore, individuals with chronic psychosis may not always exhibit a vulnerability, even if psychotic symptoms become associated with push and pull factors at a given point in time. Where

the push effect of their symptoms or the pull effect of terrorism subside, the vulnerability/risk may be transient and situational and hence the link between psychosis and vulnerability is dynamic and warrants review. When psychosis is a life-long disorder, it need not constitute a life-long vulnerability even if symptoms and vulnerability come to be linked at any given point in time. The essential question to ask and indeed review on a regular basis, is do aspects of psychosis still contribute to push and pull factors to terrorism and if so how.

Clearly, when links between psychotic symptoms and terrorism vulnerability develop, the focus of diversion approaches needs to focus on mitigating such links by either reducing the push effect of the symptoms towards terrorism or the pull of terrorism as a way of relieving the symptoms. Where symptoms cannot be totally alleviated and the focus of treatment is reducing the threat/distress they generate, practitioners should consider the role that the threat/distress played in shaping vulnerability and how its reduction may bring about reduced risk. Regardless of the presence or nature of the links between psychosis and terrorism vulnerability, support and interventions should seek to enhance self-management of the illness, overall functioning, coping and wellbeing and to reduce distress, TCO, confusion and of course all forms of risk, including risk to self and risk of non-terrorist violence. Well-researched approaches to the treatment of psychosis should be used, as per standard clinical practice, and functional links between psychosis and risk should be reviewed as treatments begin to show impact. When the psychotic symptoms are better managed, assessments can be revisited to assess for any residual risk. Whether risk is diminished, shifts to other targets or indeed increases, the means to establish such risk is to examine factors contributing to the push and pull towards terrorism, with one of many factors to consider being psychotic symptomatology and its impact on the individual.

### ***Post-traumatic stress disorder (PTSD)***

#### ***Role in shaping push and pull factors for terrorism***

There is some limited evidence of a heightened prevalence of trauma histories in some lone actor terrorists (O'Driscoll, 2018) and members of the general community who sympathise with violent protest and terrorism (Bhui et al., 2019). The research into links between trauma, PTSD and terrorism remains very limited in terms of the samples used and indeed the measures of both PTSD and terrorism used by researchers, which renders it of limited utility to practitioners. Some hypotheses on the nature of the links and implications for practice have been postulated in very recent years (RAN, 2018a) but this has typically been done through practice and policy forums involving experts in the field rather than through empirical research.

The hypotheses on trauma-terrorism links generated to date are limited. Some researchers have suggested that higher exposure to trauma leads to greater likelihood of developing PTSD and could make an individual more likely to endorse violent extremism, possibly by increasing anger, hostility and an urge for revenge (Ellis et al., 2015; O'Driscoll, 2018). It has been postulated that trauma can play this role by either reminding the individual of their mortality (Burke et al., 2013; Van Prooijen & Krouwel, 2019) and/or leading them to re-evaluate their assumptions about the world and their purpose and place within it whilst also heightening their need for meaning and identity, with such needs being exploited by terrorist organisations amongst others (O'Driscoll, 2018). It should be noted that some of the research underpinning such hypotheses was not based on terrorism perpetrators or acts but instead used proxies of terrorists and terrorist acts which may be questionable. For example, one study used a sample of US-based Somali refugees aged between 18–25 years and measured their openness to illegal and violent activism as a proxy of terrorism (Ellis et al., 2015) whilst another study used measures of left and right wing political views as proxies of terrorism (Burke et al., 2013; Van Prooijen & Krouwel, 2019). This could of course not only limit the generalizability of the findings to terrorism perpetrators but also offers little insight into how trauma can create vulnerability to engaging in terrorism. Simi et al. (2016) purport that pathways from childhood adversity to later violent extremism and terrorism are complex and that whilst some terrorists (e.g. American white supremacists) may resemble violent offenders in their childhood trauma history, they are a heterogeneous group with variant pathways between trauma, other background factors and terrorist engagement. Thus, not only is extrapolating from studies of non-terrorists problematic but even studies which have examined pathways amongst terrorism may not be generalizable to wider cohorts. Additionally, studies of individuals who have directly experienced trauma overlook the role that inter-generational transmission of traumatic experiences (e.g., of communal humiliation) may play in driving beliefs, emotions and reactions to the world (Alderdice, 2005). Finally, most individuals exposed to traumatic events do not commit acts of violence or terrorism. Anger and psychological sequelae may be normative and have no risk implication and trauma may even be protective through enhancing empathy for victims of such acts. Therefore, complexity and diversity of pathways needs to be assumed and an individual's pathway from trauma to later engagement in terrorism, if indeed pertinent, requires open-minded analysis.

**Symptoms of PTSD.** Different symptoms of PTSD may play different roles in shaping trauma-terrorism links. The distress, fear, loss of control and helplessness arising from trauma could heighten the resonance of and comfort derived from extremist narratives, by assigning deeper meaning and nobility

to such experiences and purporting to restore control, order and safety in a dangerous world (Al-Attar, 2019). Anger, irritability, aggression and blame of others for one's traumatic experiences may accentuate the push factors of PTSD, making extremist violence an outlet for intolerable tension and anger whilst also giving revenge narratives a stronger pull (O'Driscoll, 2018). Dissociation and detachment may contribute to the lifting of inhibitions where the individual feels removed from and emotionally numb in response to the consequences of terrorist acts of violence. Alternatively, terrorist groups and causes could become a form of avoidance and escapism from one's own traumatic memories and re-experiencing. Furthermore, terrorist causes may offer a resolution for guilt by purporting to be a means to attain redemption. Finally, risk-taking, recklessness and self-destructive tendencies, features of PTSD that have come to be recognized by diagnosticians in recent years, may either act as a push factor towards dangerous and destructive endeavours (including terrorism) or else strengthen the pull effect of the dangerousness and risk of terrorism. The aforementioned features of PTSD (or Acute Stress Disorder) may arise following any type of trauma, such as sexual, physical, or emotional trauma, including those experienced during war and civil conflict. Where such symptoms are present alongside engagement in terrorism, the earlier mentioned push and pull effects of the symptoms may be worthy of consideration.

When an individual has engaged in terrorist activity and presents with PTSD, practitioners should also consider the possibility that the PTSD may be secondary to or a consequence of the engagement in terrorism, rather than assume reverse directionality (Al-Attar, 2019; Bubolz & Simi, 2015; Corner & Gill, 2019; Reinares, 2011). Individuals engaging in terrorist groups or roles may be traumatized even when they have not participated in violent acts or directly witnessed violence. Exposure to extremist materials, being subjected to coercive control by terrorist groups/commanders, fear of capture, fear of the consequences of dissenting from the organization, as well as engagement in violent acts and capture and detention by the authorities or rival groups (especially where torture is involved), may all trigger PTSD symptoms. Therefore, practitioners should remain open-minded about the direction of causation when exploring any possible links between terrorist involvement and PTSD. Where PTSD symptoms result from terrorist engagement, they may not necessarily signal a further vulnerability/risk and in some cases may even generate resilience against (aversion to) terrorism by reducing its pull and appeal.

Alternatively, PTSD symptoms arising from terrorist engagement may exacerbate vulnerability/risk of further engagement, in two ways. Firstly, they may do so by creating new risk factors that did not previously contribute to engagement. For example, the traumatic effects of engagement may create isolation, generate a sense of loss of control and anger and grievances

that were not previously present and which come to contribute to added or new vulnerabilities that maintain terrorist engagement through new push and pull factors. Secondly, in those with PTSD that pre-dated and acted as push and pull factors for their engagement in terrorism may find that terrorist engagement itself may further accentuate their symptoms and their push and pull effects. In such cases, PTSD and terrorism links may be bi-directional, whereby pre-existing PTSD that created a vulnerability may be re-activated by terrorist activity, leading to heightened vulnerability/risk as the individual continues to engage in terrorism as a way of escapism, release of negative emotions or an attempt to regain control.

In summary, PTSD symptoms may be unrelated to terrorist vulnerability, may create vulnerability alone or in conjunction with other cumulative factors, or in some instances may be a consequence of terrorist engagement. In the latter cases, the PTSD may or may not create further vulnerability or accentuate existent ones. It is important that a detailed chronology and description of all traumatic events and reactions is elicited to unpack the aforementioned complex links and trajectories. Furthermore, the presence and role of other mental health difficulties that may be secondary to PTSD, such as depression and substance misuse, need to be assessed as these may heighten push and pull factors, especially where suicidality or self-destructiveness are present.

### ***Implications for resilience building***

Where an individual exhibits PTSD symptomatology and extremist behaviours, an open mind should be adopted in relation to linkage and direction of trajectories. An in-depth clinical assessment of PTSD symptomatology, how it is subjectively interpreted and responded to and its chronology is needed, alongside an assessment of secondary mental health problems. Where links are evident, the role of specific symptomatology and its experience in shaping specific push and pull factors needs to be delineated. When any aspects of PTSD are acting as push factors or strengthening the pull power of terrorist causes/groups/violence, support and intervention should focus on alleviating the PTSD symptoms, reducing push factors and providing alternative sources of relief from symptoms to reduce the pull of terrorism. Evidence-based clinical approaches to treating PTSD may be helpful in alleviating the symptomatology. Where complex, multiple traumatic events have been experienced, longer-term forms of multi-modal therapy may be warranted. The ultimate aims should be to alleviate distress, develop resilience and promote post-traumatic growth, in addition to reducing the push and pull effects of the symptoms. The effects of engagement in terrorist activity on psychological health should be explored and the potential for traumatization resulting from such activity considered and addressed. As well as neutralizing the push and pull effects of PTSD symptoms, practitioners need to consider if the

experience of trauma itself could facilitate resilience against terrorism, for example by enhancing healthy empathy and recognition of the futility of violence. Finally, where co-morbid mental illnesses exacerbate the role PTSD plays in shaping vulnerability, these need to be assessed and treated using well-established clinical interventions.

## ***Substance misuse/addictions***

### ***Role in shaping push and pull factors for terrorism***

Whilst there is limited evidence on the prevalence of substance misuse disorders amongst terrorist groups (RAN, 2018b), the reported prevalence of a range of mental illnesses amongst sub-cohorts of terrorists (O'Driscoll, 2018) alongside the general finding that substance misuse increases risk of violence in those with some mental illnesses (Fazel et al., 2009) point to the need to examine if and how substance misuse and addictions could contribute to the push and pull factors to terrorist engagement, particularly in individuals with mental illness. Furthermore, drug use has been employed by some groups to facilitate operational performance (El-Khoury, 2018) and hence may become a problem as a result of terrorist engagement. The use of alcohol, illicit drugs, some prescription drugs and indeed other forms of behavioural addictions may play a range of different, often indirect roles in shaping vulnerability/risk (Al-Attar, 2019; RAN, 2018b). Firstly, alcohol, drugs and other addictive activities may play a role in creating vulnerability that triggers the pathway to terrorism. Secondly, they may sustain the vulnerability and increase risk. Thirdly, alcohol and substances may lift behavioural and mental inhibitions at the later stages of the pathway when the individual sets out to commit a terrorist offence. In addition to those three types of links, there is a fourth possibility that an individual may be involved in narco-terrorism, whereby they engage in the trafficking of drugs in order to fund terrorist activity, although this will not be focused on in the current paper as such cases are rarely of relevance to mental health practitioners and may instead be the focus of operational disruption by law enforcement and security agencies. The first three roles that substances and addictive behaviours may play in shaping vulnerability, by contrast, may become the remit of forensic mental health assessment and support and thus warrant consideration, herein.

***Creating vulnerability.*** Drug and alcohol addiction, or indeed any kind of addiction and dependency (or in some instances a co-dependency on a loved one who has an addiction), is likely to generate distress, confusion and a sense of losing control. It may lead to lifestyle instability, loss of social and financial capital and result in social isolation and alienation. The individual may lose their sense of purpose and meaning in life, experience anxiety, fear,



and uncertainty. Such consequences of substance misuse often self-perpetuate and escalate the very need for substance use, until life spirals out of control. Collectively, these adverse circumstances may generate a sense of injustice, anger, fear, threat, guilt, helplessness and lack of belonging, identity, purpose, and meaning, which the person feels they are unable to overcome. All these factors may constitute vulnerabilities and push factors for terrorism (Al-Attar, 2019), with terrorist causes and groups often purporting to resolve and meet such needs and hence may have a pull effect at such times. For example, terrorist groups may offer the individual a way to attain a sense of control, order, self-discipline, identity, belonging and purpose in life as well as offering moral redemption and social forgiveness and affirmation. Some terrorist groups may allow substance misuse and attribute noble intentions to its use (e.g., enabling one to better serve the cause) whilst others strongly condemn its use and by doing so may ironically facilitate abstinence and recovery, and with it a perceived sense of control and redemption. At the very least, terrorist groups and causes may offer a form of escapism from the addiction and its adverse impact.

***Sustaining vulnerability.*** For some individuals, extremist identities, activity or groups may serve a similar function to substance use or addictive behaviours, both offering means of escaping from life's problems and emotional pain (Al-Attar, 2019). Therefore, substance use and extremism may both covary with a third factor such as psychological distress, and may reinforce one another by continuing to provide dysfunctional means of escapism from such distress, exacerbating and maintaining one another in a vicious cycle. Alternatively, in individuals who have a heightened need for risk-taking, stimulation or intensity, both terrorist engagement and substance misuse/addictive behaviours may similarly fulfil these same needs while being mutually reinforcing. Thus, substance misuse/addictive behaviours and terrorist activity may be two parallel areas of vulnerability that are underpinned and mutually reinforced by a common need. In this respect, substance misuse and addiction is a maintaining factor for terrorist vulnerability.

***Lifting inhibitions.*** Some individuals who prepare to commit acts of harm or take risks associated with terrorism may opt to use substances to lift their inhibitions and overcome barriers that may prevent or delay them from acting (Al-Attar, 2019; El-Khoury, 2018). Such barriers and inhibitions may include anxiety, fear, guilt, hesitation to harm others/themselves or abandon and impact loved ones, as well as complex cognitive reasoning and deliberation. Some terrorist groups routinely use substances as disinhibitors and calming or energizing aids for this reason, even when their purported values (e.g., religious or moral beliefs and goals) discourage substance use (El-Khoury, 2018), presumably by rationalising that they do so for the greater

good and as a means to a noble end. Regardless of whether substance misuse is chosen by the individual or group as a disinhibitory, calming or energizing aid, it can heighten and intensify an individual's intent to offend by lifting barriers that could otherwise prevent them or slow them down. Substances could therefore act to heighten intent/readiness to commit acts of terrorism and by doing so increase the individual's capability to commit terrorist acts.

### *Implications for resilience building*

Where substance misuse and addiction pre-date and create a vulnerability that pushes the individual towards engaging in terrorism, it is important to address both the substance misuse/addiction and its current and historical drivers, to diminish its role in creating push factors. Furthermore, the pull of terrorism needs to be reduced by offering healthy alternatives that meet the needs met by terrorism (e.g., escapism, sense of control, efficacy or redemption).

When substance misuse or any addictive behaviour co-varies with, serves the same function as and mutually reinforces and maintains terrorist engagement, it is important to address the underlying factors that generate the need for both substance use and engagement in terrorism, be it heightened distress generating a need for escapism or a heightened need for stimulation that generates a need for intensity and risk. Addressing the underlying vulnerability will likely diminish the push towards both terrorism and substance misuse or addictive behaviour, as well as the pull power of terrorism.

Finally, where substance misuse acts as a disinhibitor to terrorist offending, it is important to prevent or limit its access in the first instance in order to reduce risk, and to then support the individual to gain insight into and address the factors for their engagement in terrorism as well as their insight into the exploitative and immoral nature of terrorist groups that use mind-altering substances to control their members and their actions. It is important to cultivate and strengthen the individual's existing moral, emotional and behavioural inhibitions that prevent or deter them from engaging in terrorism (and which they use substances to diminish). Essentially resilience building needs to strengthen the very inhibitions that substances were used to weaken, as well as address the substance use itself. Finally, where the individual's substance misuse initially constituted a disinhibitor for actions but eventually became addictive, support should be provided to address this emergent addiction, firstly for the well-being of the individual and secondly so that risk of terrorist behavior is not maintained.

### *Conclusions*

The existing research sheds little light on if and how specific aspects of mental illness shape different push and pull factors to terrorist

engagement. There are simply no empirical studies at this stage to suggest any patterns and generalisations in mental illness-terrorism links and it is not possible or meaningful to assign more or less weight to certain disorders or symptoms than others when assessing risk. There is no evidence base for an actuarial approach to assessing the role of mental illness in terrorist pathways and there are no specific guidelines for practitioners on how to formulate the role of mental illness using existent structured professional judgment approaches. Nevertheless, for practitioners presented with individuals with mental illness who have engaged in terrorism, 'doing nothing' is not an ethical option and they are often expected to inform critical decisions that impact risk to the public as well as the welfare of the individual. There is therefore not only a clear gap in the research field but also an urgent need for guidelines for forensic mental health practitioners working in this ethically, clinically, operationally and politically complex arena. The current paper offers a small step towards filling this gap, by presenting theoretically, clinically and operationally informed hypotheses on the possible roles that specific aspects of psychosis, post-traumatic stress disorder, and substance misuse/addictions may play in shaping push and pull factors for terrorism, with suggestions made on approaches to risk assessment and diversion.

There is no evidence to suggest that mental illnesses such as psychosis, PTSD and addictions are in themselves risk factors for terrorism in the general population. Where such mental illnesses contribute to push and pull factors for terrorism in an individual, they often do so in complex and often indirect ways and through specific symptoms and their experience by the individual. Such symptoms typically interact with other factors such as social, attitudinal, ideological and environmental factors, to shape vulnerability. Furthermore, the risk relevance of mental illness is not simply shaped by the severity of any given illness or number of co-morbid illnesses. Practitioners need to maintain an open mind about the existence and nature of links between mental illness and terrorism, to avoid reductionist approaches that over-focus on the mental illness or assume its causality and which ensure that mental illness is not stigmatized. They should seek to develop a thorough and dynamic individualized case formulation which can delineate the precise mechanisms that link mental illness to risk and identify pathways to diversion. The current paper is intended to inform the development of in-depth, nuanced individualized formulations rather than to infer general theories of terrorism and mental illness. If and when the field expands and matures and more specific evidence of the role played by mental illness in terrorist engagement emerges, individual case formulations should be continually informed by the developing evidence base.

## Disclosure statement

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