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# Killing in Pairs: Radicalisation Patterns of Violent Dyads

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In recent years there has been an upsurge in violent attacks conducted by pairs of individuals who have undergone a shared process of radicalisation. Violent dyads remain a relatively understudied phenomenon. Using a relational approach, this article analyses the unique character of dyadic radicalisation and how it differs from instances of lone actor or group-based terrorism. It draws on a number of recent case studies, analysing instances of non-kin, fraternal, and spousal dyads. Its principal case study is a failed attack in Germany in 2006, based on a range of documentary sources as well as an interview with one of the perpetrators.

**Keywords:** Lone Actor Radicalisation; Terrorism; Radicalisation; Violent Dyads

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The recent upsurge in violent attacks by lone-actor terrorists has justifiably garnered much political, academic, and popular attention. However, nestled amongst these cases, there have been several attacks conducted by radicalised dyads: pairs of people who have largely radicalised together and proceeded to carry out joint violent attacks such as the Boston Marathon bombing in 2013 and the San Bernardino shooting in 2015. The admittedly rare, but periodic recurrence of these attacks merits further analysis. The field of social psychology contains exhaustive research on dyads, but it is mostly focused on dyadic relationships within couples (Collins and Read 1990) or family environments (Jenkins et al. 2012). Criminologists have also focused on the formation of criminal dyads (Kandel, Davies, and Baydar 1990). There is little research focusing on radicalised dyads that prepare or actually launch violent attacks, save for a brief discussion of "family pair terrorists" in an updated edition of McCauley and Moskaleiko's *Friction* (2017) and the inclusion by Gill

et al. of "isolated dyads" in their quantitative study of lone-actor terrorists (2014).

This article draws on lone-actor radicalisation research (Malthaner et al. 2017; Gill, Horgan, and Deckert 2014; Lindekilde, Malthaner, and O'Connor 2018; Fredholm 2016; Spaaij 2011; Joosse 2015) and related literature on small group radicalisation (della Porta 1995; Wiktorowicz 2005; Malthaner and Waldmann 2014; Sageman 2008). Yet, neither of these approaches is specifically designed to address the patterns of radicalisation inherent to dyads. Borrowing from the work of Georg Simmel (1964), this article argues that the relational composition of dyads sets them apart from terrorist cells (which contain three or more individuals) and, at the same time, differentiates them from lone-actor radicalization. Dyads, in other words, represent a specific pattern of relationships – within the dyad as well as between the dyad and its social environment – which shapes radicalisation and attack preparation.

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Adopting a relational approach to analysing radicalisation (Malthaner and Lindekilde 2017) and drawing, in particular, on recent works that have adapted relational perspectives to research lone-actor terrorism (Malthaner et al. 2017; Lindekilde, O'Connor, and Schuurman 2017; Lindekilde, Malthaner, and O'Connor 2018), this article seeks to identify the relational configurations and mechanisms that shape processes of dyadic radicalisation, pointing out dynamics they share with group and lone-actor radicalisation, as well as mechanisms specific to violent dyads. We argue that while dyads display a number of similarities with lone actors – such as peripheral positions within broader radical milieus or movements and the particular function of role-models engaged in explicit and implicit calls to action – it is the intense relationship between the two individuals involved in the process that not only contributes to reinforcing and consolidating radicalisation but also facilitates the shift from radical attitudes towards planning and executing a violent attack. Similar to lone actors, radicalised dyads are rarely completely isolated, but are to varying degrees embedded in broader milieus and interact with radical activists in various ways (see Schuurman et al. 2018; Malthaner and Lindekilde 2017); thus, while they carry out violent attacks on their own, their isolation is always relative rather than absolute.

The article is based, firstly, on one in-depth case study of dyadic radicalisation – an attempted terrorist attack in Germany in 2006 – for which the authors have obtained extensive data from primary and restricted sources, including court documents and an interview with one of the imprisoned perpetrators, as well as multiple open sources. Secondly, in order to validate the findings derived from that case, the authors also assess the identified mechanisms in a number of other cases based on an extensive secondary source review of the radicalisation patterns of the Boston Marathon bombers and the San Bernardino attackers. The article thus addresses instances of non-kin dyads, spousal dyads, and sibling dyads. It begins with a brief conceptual discussion and literature review, followed by a summary of the methodology used. It then discusses in detail the initiation of the dyad and its radicalisation in the German case study, before concluding with an analysis of the mechanisms identified and how they differ from other cases of dyadic radicalisation.

### 1. Conceptual Framework and Literature Review

In the interests of conceptual clarity, a number of key concepts that recur in this article should be explained. Firstly, radicalisation is understood as a process at the individual or

group-level, characterised by a shift towards violent repertoires of action and the adoption of frames of interpretation that condone, legitimise, and promote acts of political violence. Radicalisation is a composite process that can and should be disaggregated into sub-processes of cognitive radicalisation (perceptions/identities/beliefs), shifts in practices and patterns of activism, and relational pathways (concatenations of relational patterns and dynamics of interaction), which are intertwined and interact in multiple, complex ways, and should neither be analytically conflated nor isolated. The authors concur with the conceptualisation of political radicalisation as occurring across a spectrum ranging from the individual to the collective level of organisations and movements (McCauley and Moskalenko 2017, 2008). Rather than representing entirely distinct processes, lone-actor and dyadic radicalisation thus share many mechanisms with collective forms of radicalisation (Lindekilde, Malthaner, and O'Connor 2018). Secondly, the term *radicalised dyads* refers to pairs of closely interacting individuals who have undergone an (at least partly) shared process of radicalisation, plan together, and attempt or actually carry out a violent attack. Recent research has defined lone actors according to three key features: they conduct the attack on an individual basis, do not belong to a terrorist organisation or armed group, and do not operate on direct orders from or under the direct influence of a leader or group (Malthaner et al. 2017). Similarly to lone actors, radicalised dyads are always only relatively autonomous in relation to radical milieus and terrorist organisations. It has also been suggested that “the psychology of radicalization in a family pair [or dyad] is likely closer to that of a lone wolf than to that of a traditional terrorist group member” (McCauley and Moskalenko 2017, 255).

Dyads represent a specific relational configuration, characterized by an intense relationship between the involved individuals and resulting in distinct radicalisation patterns. Writing about dyads, Simmel argued: “everyday experiences show the specific character that a relationship attains by the fact that only two elements participate in it. A common fate or enterprise, an agreement or secret between the two persons, ties each of them in a very different manner than if even only three have a part in it” (1964, 123). Nevertheless, we do not argue that the emotionally salient relations between the two component elements of the dyad are the only relevant ones contributing to its radicalisation. Drawing on existing social movement research, the broader universe of relations present in dyads’ radical milieus (Malthaner and

Waldmann 2014), in both on- and offline settings, are taken into consideration (Baaken and Schlegel 2017).

Our definition of dyads excludes cases where two attackers realise an attack that was conceived in cohort with, or by others. Accordingly, the shooting attack on an exhibition of cartoons depicting caricatures of the Prophet Muhammad in Garland, Texas, is not included because, although the shooting was conducted by two attackers, it was a plot conceived and prepared by a small autonomous cell of three individuals (Meleagrou-Hitchens and Hughes 2017). Contrived operational dyads formed by a third party for the logistical purposes of an attack are also excluded. The killing of an elderly priest in Normandy in July 2016 by a pair of ISIS sympathisers is therefore excluded (Rubin and Nossiter 2016). The perpetrators were radicalised separately prior to the attack and introduced to one another online by a Syrian-based ISIS recruiter only days prior to the attack (Digiacomi 2016).

Adopting a relational approach to radicalisation focuses attention “on interpersonal processes that promote, inhibit, or channel collective violence and connect it with nonviolent politics” (Tilly 2003, 20). Radicalisation is seen as being shaped and driven by patterns of interaction between and within individuals, groups, and their social environment. Focusing on interpersonal dynamics to analyse lone-actor and dyadic radicalisation might seem paradoxical. Yet, the isolation and enclosure of dyads is a fundamentally relational process (Malthaner and Lindekilde 2017). In that respect, this article makes use of the processes and mechanisms approach which has become widely applied in the broader social movement literature (McAdam, Tarrow, and Tilly 2008). Thus, radicalisation can be disaggregated into concatenations of mechanisms, which vary according to the relational configurations of the settings in which they occur. Some of the principal mechanisms of lone-actor radicalisation identified in recent research include: unfreezing (the weakening of restraining social ties), moral shocks, indirect encouragement cues (statements or events perceived as encouraging an individual to act), and encapsulation (“active” social isolation) (Malthaner et al. 2017). Importantly, in the case of lone actors and dyads the move toward action can take place outside of direct contacts or interactions with organised networks. These mechanisms are shaped by their specific social environments and can take slightly different forms and/or occur in varying chronological order.

## 2. Methodology

The cases of radicalised dyads examined for this paper were selected from a larger dataset (N=140) of lone-actor extremists and dyads compiled for a collaborative, EU-funded research project on lone actor terrorists (PRIME, 2014–2017). Criteria for case selection included the definition of radicalised dyads stated above, variation in the type of dyad (non-kin, spousal, and sibling dyads), political relevance as well as the accessibility of high-quality data. The principal case study at the centre of our analysis is a radicalised dyad of two Lebanese students – for whom we use the pseudonyms “Ahmad” and “Hassan” – who attempted to carry out a terrorist attack in Germany in 2006. The case study draws on restricted documents, including court proceedings, as well as an in-depth interview with one of the perpetrators, which was conducted in collaboration with a research project at Bielefeld University, as well as openly accessible sources. To allow for a comparative analysis of patterns of radicalisation, we combine an in-depth case study with insights from two further cases, namely the brothers Tamerlan and Dzhokhar Tsarnaev (the Boston Marathon bombers), and the spouses Syed Riswan Farook and Tashfeen Malik (responsible for the San Bernardino attack). Research on these cases was based on an extensive review of open sources (government reports, newspaper reports, and scholarly publications). The limits of this case selection should be obvious: as a small-N comparative case study its purpose is primarily explorative, seeking to identify relational configurations and mechanisms of radicalisation which, while able to inform the analysis of radicalised dyads in a broader sense, are as such not generalisable across ideology (all our cases involve Islamist adherence), time (all cases are after 2005), and geographical setting (all cases are from Western Europe or North America). Thus, further research is needed to specify the generalisability of the conclusions.

The assembled case material was analysed in two stages. First, in-depth analysis of our primary German case data was conducted. The data was coded deductively (including the data obtained in the semi-structured interview with one of the perpetrators), with particular attention paid to the diachronic presence and/or absence of established relational concepts and mechanisms in the dyad. We also afforded close attention to the way personality traits shaped social ties with larger radical milieus or movements. All the chronologically identifiable data points were placed in a timeline, permitting the complex ways in which the dyadic radicalisation unfolded to be disentangled by means of process trac-

ing. Subsequently, the mechanisms of radicalisation identified in the primary case were compared with those of the two secondary cases, providing an opportunity to assess the robustness of patterns of dyadic radicalisation.

### 3. Case Study: The Attempted Bombings of Commuter Trains in Germany, 2006

In July 2006, two Lebanese students, “Ahmad” and “Hasan”, each deposited a suitcase containing an explosive device on commuter trains close to one of Germany’s biggest cities. Due to errors in their construction, the devices failed to explode and no casualties resulted. Both perpetrators were subsequently arrested and sentenced to lengthy prison terms.

Ahmad was twenty years old when he carried out the attack. His family had been internally displaced during the civil war in Lebanon, and lived in relatively disadvantaged circumstances in a northern Lebanese city. The family is known to have very stringent religious beliefs and a number of his siblings have been involved in the Salafi jihadist movement *Fatah al-Islam* (Doc2: 4-5, 182, 183; Doc1, 7). Notwithstanding their general scepticism towards the “West”, the family encouraged Ahmad to obtain university qualifications in Germany. He attended a number of language courses in Germany before being accepted to a university preparatory course to study engineering in northern Germany. He had an older brother living in Sweden, with whom he became particularly close while living in Germany. His brother held views sympathetic to jihadism. In other words, Ahmad experienced consistent radical Salafi jihadist socialisation both before and during his period of residence in Germany.

Ahmad did not adjust well to his new environment in Germany. His academic performance was unsatisfactory and he had to repeat one semester of his preparatory programme (Doc1: 10). Ahmad established a friendship with other Muslim students in his student residence, and they established an informal prayer room in the building’s basement. However, Ahmad’s strict religious views made it difficult for him to settle in Germany. These included considering all photos of people as *haram*, strong opposition to listening to music, refusal to mingle with women, and not watching football. He only wore what he believed to be traditional Islamist clothing. As a result of these self-imposed strictures he spent much time alone in his room (Doc2: 6, 12, 158). He spent many hours on the internet perusing jihadi websites, and composed poems lauding jihad; one of these stated that jihad was the only way to “destroy the roots of humiliation” of the Muslim

world. He developed an intense hatred of the United States, viewing Americans as unbelievers occupying Iraq who had to be expelled at all costs (Doc2: 14). One fellow student described him as utterly obsessed with armed jihad and the mujahedeen: “his body was here, but in his head he always was in the lands of jihad – in Iraq, Palestine” (Doc2: 163). Jihad was not merely theoretical for Ahmad, he wanted to go there and fight (Doc2: 163). He chided male Muslim friends in the student residence for what he argued was their lax observation of Islamic norms. He organised small get-togethers in the basement with fellow Muslim students, where he showed violent jihadist videos. These included ones showing the execution of hostages, which he argued was legitimate (Doc2: 15, 16). This resulted in many of his fellow residents avoiding discussions with him about religion and politics. The extreme unease Ahmad experienced in a culturally alien context is common amongst many religiously minded young emigrants. Similar developments can be observed in the case of the “underwear bomber” Umar Farouk Abdulmutallab (Hider 2011) or the famous historic case of Sayyid Qutb in the 1950s (Qutb 2010). In analytical terms, it can be viewed as a form of “unfreezing” that occurs when an individual becomes “disconnected from everyday routines and relationships” (McCauley and Moskalenko 2017, 85). McCauley and Moskalenko go on to suggest that “loss of connection and status leaves an individual with less to lose in radical action, including violence” (2014, 82).

Ahmad was enraged by the publication of the Mohammed cartoons in Danish newspapers in 2006. Their publication outraged large sections of Islamic society – not only those with Salafi jihadist leanings (Ramsay and Marsden 2015) – and has been cited as a justification for multiple jihadist attacks in Europe and further afield in recent years.<sup>1</sup> Ahmad attended a demonstration against the caricatures in Kiel in February 2006, where he played a prominent role, even taking charge of a megaphone at one point. In class at university he advocated the burning of Danish flags in protest against the cartoons and began to ignore a teacher who challenged him on the issue (Doc2: 26, 192). The cartoons were the issue which propelled him from the realm of radical belief to the need to take action (Doc1: 15). They can be considered as a moral shock, a mechanism generating a political awakening or a commitment to actively address a par-

<sup>1</sup> Specifically the attack on the Charlie Hebdo offices (Callimachi and Yardley 2015), the axe attack on Kurt Westergaard, the failed parcel bomb attack in Copenhagen (Lindekilde, Malthaner and O’Connor 2018), the shooting attack by Omar el-Hussein in Copenhagen (Malthaner et al. 2017), and the Garland shooting (Berger 2015).

ticular wrong (Jasper and Poulsen 1995). Many people experience moral shocks and become convinced of a need to act; but the initial impetus will often dissipate before action is actually taken. This seems to have been the case with Ahmad, as he took no concrete steps to prepare an attack until he met Hassan. While it is not inconceivable that Ahmad could have proceeded to carry out a violent attack on his own, the arrival of Hassan clearly constituted an enabling factor for the subsequent shift from radical attitudes to violent action several months later. Hassan corroborated Ahmad's beliefs and supported and participated in planning and preparation for the attack. Their commitment to carry out violence, in other words, started with the formation of their dyadic relationship.

Hassan was born and raised in Lebanon and also moved to Germany to study. He was doing a language course when he first contacted Ahmad. While less is known about Hassan's family background or political perspectives, Hassan came into contact with Ahmad through his cousin, a member of Fatah al-Islam, and was known to sympathise with jihadist ideas to a certain extent before leaving for Germany (Doc2: 28). But there is no evidence to suggest that Hassan had ever considered participation in jihadist political violence prior to encountering Ahmad. Although Ahmad's religious convictions hindered participation in student life in Germany, he did have some Muslim friends and acquaintances in his student residence. In contrast, Hassan was largely isolated in Germany, thus potentially explaining why he contacted Ahmad, who lived five hundred kilometres away. Shortly after this initial contact, in April 2006, Hassan visited Ahmad and stayed with him for a week. Although the visit was brief, they quickly became very close friends, with Ahmad telling his fellow residents that Hassan was a "true friend" (Doc2: 29). During this brief period, the pair decided to launch an attack together in Germany with the objective of killing many people (Doc1: 15), thus highlighting how rapidly specific political sympathies can be transformed into a commitment to political violence. Similarly short but intense radicalisation processes have been observed in cases of foreign fighter recruitment (Lindekilde, Bertelsen, and Stohl 2016) and lone-actor violence.

All available data suggests that Hassan had a relatively passive personality. His flatmates and acquaintances all described him as polite and pleasant, but passive, insecure and indecisive. He was also reported as being withdrawn, spending a lot of time on his own in his room browsing the internet. They formed the impression that he was somebody

who looked to others for direction (Doc2: 145–147) – the polar opposite to his domineering, self-assured friend Ahmad. They thus seemed to occupy quite distinct roles in the dyadic relationship, Ahmad leading and Hassan following. To the extent that our data allows us to assess intra-dyad dynamics, Hassan appears to have been generally deferential to Ahmad and to have complied with Ahmad's plans for the bombing (Doc2: 11, 28, 145–147).<sup>2</sup> Hassan quickly began to view Ahmad as a mentor on account of his greater knowledge of Islam and his assertive demeanour (Doc2: 11). Hassan appears to have held radical Islamist beliefs and condoned violent jihad against the enemies of Islam before he came to Germany (Doc1, 16). Yet, according to his own account it was Ahmad who convinced him to carry out a joint attack. Although this narrative of manipulation is self-serving and possibly oversimplified, it is consistent with other accounts of the duo's personalities and observed behaviour (Doc2: 195–198). Ahmad seems to have made use of his greater familiarity with Islamic doctrine to emphasise their personal responsibility as Muslims to avenge the Danish cartoons. He reinforced these efforts by sending or showing Hassan many violent videos from the conflict in Iraq, depicting atrocities against Muslims, and by referencing fatwas by Salafi jihadist scholars (Doc1: 17; Doc2: 78). He particularly emphasised a fatwa by Abu Mohammad Al Maqdisi that he had found online, which specifically called for action in the West to avenge the cartoons – and had earlier convinced Ahmad of his own personal responsibility to engage in jihad and attack western targets (Doc2: 28). They then immediately proceeded to research online how to build a bomb, following detailed instructions they found on a website (Doc1: 17). The attack in the West was not conceived as the ultimate objective of their jihadist trajectories but rather as a means to demonstrate their radical credentials so that they could subsequently travel to Iraq and join the jihad there.

The tendency toward detachment from broader communities and the weakening of ties outside of the dyad is a key feature characterising dyadic radicalisation. The intimate bonds of the dyad bestow great emotional salience upon the relationship between the two actors, as Simmel observed: "precisely the fact that each of the two knows that he can

<sup>2</sup> It is worth mentioning that in an interview with Ahmad in prison, he rejected this understanding of the dynamic and presented himself as the victim of manipulation by the willier Hassan. While it is important to take this into consideration, the court – and the authors of this study – considered this narrative to be a self-serving, potentially even self-deceiving, interpretation of the dynamics between them, which is not supported by the available facts from other sources.

depend only upon the other and on nobody else, gives the dyad a special consecration" (Simmel 1964, 135). After Ahmad met Hassan, he began to distance himself from his friends and housemates in the student residence. Ahmad dismissed one particular friend claiming that he "had no trust in him any more" and "needed to keep a distance from him". Other housemates also observed that following Hassan's visit, Ahmad "lost interest in them" (Doc2: 200). Although, they lived in different cities, the pair kept in close internet contact. Ahmad sent Hassan many links to instructional and propaganda videos, to maintain his motivation and help prepare the attack (Doc1: 19; Doc2: 37, 38, 209). This prioritisation of one set of social ties – to one another – resembles the tendency to ideological encapsulation and amplification described in the literature on small group violence (della Porta 2013, chapters 4 and 7).

Although it was Ahmad who initially convinced Hassan of the idea of a joint attack, Hassan then seemed to have fully embraced the idea. This confirms the transformative impact of the dyadic relationship on the two individuals. After Hassan returned from his visit to Ahmad, he continued to engage in preparations alone, seeking further bomb-making instructions online and looking for theological justifications amongst the fatwas of Salafi jihadist clerics. He also scouted out potential attack sites and contacted a former classmate in his home country, who forwarded him an extensive list of jihadist websites. He actively distributed jihadist materials, too, many of which addressed the Mohammed cartoons (Doc1: 20). Thus, Hassan quickly became an equal co-conspirator rather than just a reluctant participant.

The death of the jihadist leader Abu Musab al-Zarqawi in Iraq on 7 June 2006 precipitated Ahmad's decision to carry out the attack, providing him with an ulterior motive to justify the planned bombing. Ahmad was in class when he got news of Zarqawi's death and fled the room visibly distressed. In a handwritten document found during the subsequent investigation, Ahmad attributed responsibility for Zarqawi's death to US President George W. Bush and swore to avenge the killing (Doc1: 12, 13; Doc2: 14, 16). Ahmad subsequently went to stay with Hassan for about two weeks to prepare the attack. During this period, they carefully purchased the required components in different hardware stores and continued to research bomb-making techniques. They planned to plant two bombs targeting civilians, and booked flights to then immediately return to Lebanon, from where they hoped to make their way to Iraq to join the jihad in person.

## 4. Mechanisms of Radicalisation in Dyads

### 4.1. Dyad Initiation

Many dyads are characterised by an imbalance of internal power, with one figure dominating and the other taking a more passive role (Humphreys, Weyant, and Sprague 2003). In the case of radicalising dyads, this can correspond with power disparities existing in broader society, such as those often found between husband and wife or between older and younger siblings. McCauley and Moskalenko argue that such power disparities render the weaker of the two an "extension of the stronger [rather] than an equal partner" (2017, 255). Such a power disparity apparently existed in the investigated German dyad, with Ahmad directing the admittedly willing Hassan. However, one should avoid generalisations, as the seemingly more deferential of the duo can often exert subtle forms of power and influence. Moreover, even in an asymmetrical dyadic relationship the two sides are connected by strong mutual dependencies and the seemingly dominant role of one individual requires (and is constituted by) the recognition and support of the other. Or put differently: as is clear from the German case, without someone to affirm the righteousness of an attack, the dominant individual in a dyad might not be capable of the step from radical beliefs to actually conduct an attack. It is the particular characteristics of the dyadic relationship – rather than individual personalities and propensities – that create and define the roles of both individuals and drive and shape radicalisation. In the case of the Tsarnaev brothers, it was commonly presumed that the older, more devout and physically imposing Tamerlan convinced his younger more susceptible brother, Dzhokhar, to go along with his violent plot. However, in-depth journalistic investigation revealed that the younger brother was far more prone to risk-taking, actively investigated bomb-making techniques, and through his marijuana dealing financed some of their preparatory steps (Jacobs, Filipov, and Wen 2013).

Similarly, in the case of the San Bernardino shooters it is not easy to identify a dominant or passive personality. Farook married Malik in 2013 after meeting on a match-making website for Muslims. One might assume that a marriage between Salafi Muslims, particularly one with a newly migrated wife (Malik), could be characterised by the dominance of the male figure (Farook). Yet, Malik is known to have had radical religious views prior to encountering Farook online, abandoning her own family's syncretic Sufi infused Islam for the puritanical Wahhabism she adopted while living in Saudi Arabia (Finnegan 2016). She played an active part in the attack

and their partnership was the trigger for Farook to revitalise a previous plot he had abandoned in 2011. That plan was also conceived with another person, Farook's neighbour Enrique Marquez, a young Muslim convert (Esquivel, Rubin, and Queally 2017). Malik's reluctance to carry out an attack on his own on the previous occasion is revealing; he possessed the weaponry and a rudimentary plan, but prevaricated after Marquez withdrew from the plot. Even individuals who are committed and capable sometimes find it difficult to maintain their motivation alone over a prolonged period. Lone actors who manage to realise well-planned attacks (in contrast to the more impulsive attacks carried out by certain types of lone actors (Lindekilde, O'Connor, and Schuurman 2017), usually possess high executive functioning. This means that they are able to remain goal-focused, maintain motivation and exhibit flexibility in light of changed circumstances (Suchy 2009). In cases of radicalised individuals with lower executive functioning, elaborate attacks require the moral and psychological support of at least one other person to maintain motivation over extended periods.

#### 4.2. Unfreezing

The unfreezing mechanism is widely prevalent across the spectrum of radicalisation. According to McCauley and Moskalenko (2008) it is a three-stage process: first, the individual becomes detached from their existing social networks and ideas. This can come about through normal life events, such as graduation, migration, marriage, family breakdown, incarceration, or release from prison. Secondly, the individual encounters and adopts new ideas and connections, before thirdly, "refreezing" in a new network with people who share the same new values. McCauley and Moskalenko also note that "loss of connection and status leaves an individual with less to lose in radical action, including violence" (2008, 82). In the case of dyads, the new network is centred on the dyadic relationship rather than a broader movement. In the formation of violent dyads, this mechanism plays an important, facilitating role as it renders individuals open to new connections and, at the same time, eliminates other social ties that could interfere with the dyadic relationship.

In the German case, unfreezing is immediately apparent. Both attackers were young foreign students who had recently relocated to a society where they had no social connections or points of reference. It proved to be a very disorienting experience for both and when they met, they bonded over their shared feelings of alienation and sympathies for jihad (Doc2: 6, 12).

In the Boston bombing case, the Tsarnaev brothers experienced unfreezing in related but also distinct fashions. Dzhokhar, the younger brother, had been very successful in high school, in terms of academic performance, sport, and socially. But when he started his studies at the University of Dartmouth he had difficulties. He abandoned his wrestling career, started to sell significant amounts of marijuana, and struggled academically, barely passing his exams. Although he was popular, many of his friends were planning to move away (Jacobs, Filipov, and Wen 2013). He was also trying to cope with an identity crisis: he felt ill at ease at his local mosque and he did not share the increasing religiosity of his mother and brother. He also endured the collective difficulties his family had reconciling their Chechen identity with American society (Gessen 2016). Tamerlan, on the other hand, witnessed the unravelling of his sporting career after he was prohibited from entering the prestigious Golden Gloves boxing competition because his American citizenship application had been refused on account of his involvement in an incident of domestic violence. It has been argued that the collapse of Tamerlan's sporting ambitions should be understood as a loss of significance (Kruglanski et al 2014, 74). Tamerlan continued to live in the family home, so he witnessed first-hand his parents' divorce, his sisters' marital difficulties and their repeated court appearances for minor theft. To make matters worse, he had returned to Dagestan to visit family, and had come to realise that he did not fit in there either (Vatchagaev 2013). He was thus thoroughly uprooted, feeling fully comfortable neither as a Chechen nor as an American. Through some loose family connections he could have pursued his interest in jihad in the Caucasus region, but never did (Hahn 2014, 232-51). He justified bombing the Boston marathon in terms of America's invasion and occupation of Iraq and Afghanistan rather than the conflict in Chechnya and Russia that had affected his own family for generations. Indeed, one of his last known statements was: "I am a Muslim American" (in Gessen 2016, 165).

The San Bernardino attackers also experienced a degree of unfreezing. Tashfeen Malik moved to the United States from Pakistan in 2014, the year before the attack, but Syed Riswan Farook was born and raised an American citizen. Malik failed to integrate to any extent, deliberately isolating herself and spending most of her time alone at home (Finnegan 2016). There is therefore a possibility that the arrival of Malik into Farook's life disrupted his existing social relationships, re-crystallizing them in an emotionally intense jihad-focused dyad.



### 4.3. Encapsulation

The social isolation of dyads – in the sense of active withdrawal, for which we use the term “encapsulation” (see also Lindekilde, Malthaner, and O'Connor 2018) – is, of course, relative. Although they tend to withdraw from their social environment while at the same time intensifying their relationship with one another, it is highly unlikely that any dyad could completely detach itself from wider everyday interactions. Some also maintain weak and affiliative ties with broader radical milieus (impersonal relationships of common identification without any direct communication or interpersonal relationship (Lindekilde, Malthaner, and O'Connor 2018). One significant element of encapsulation is cognitive closure, which can be understood as a mechanism by which “all the information the militant activists receive is filtered through the group [or dyad]; this process defines their external reality by providing shared master frames of meaning” (della Porta 2013, 252). Particularly in kinship and spousal dyads, affective focusing – “the progressive reduction of affective ties to small groups of comrades” (della Porta 2013, 243) or in this case, a single partner – can further reinforce the relationship and create forms of mutual dependence and influence.

Across the cases examined here, the relationship patterns between dyads and their social environments varied. While both Ahmad and Hassan maintained school and family contacts, they certainly lessened the intensity of their friendships outside of the dyad. In the San Bernardino case, the duo left their sixth-month-old child with Farook's mother (Stack 2015) while they went to attack his work Christmas party. The Tsarnaev brothers had close ties to their – admittedly dysfunctional – family and Dzhokhar had a close circle of non-politicized university friends with whom he socialised regularly (Gessen 2016). Cognitive closure does, however, seem to be present across all the cases. The German dyad immersed itself in radical jihadist literature, reading and watching sermons and lectures by renowned jihadist preachers. Ahmad rebuffed all other interpretations of Islam advanced by other Muslims living in the student residence (Doc1: 13). Farook and Malik were both interested in jihad before they met. Farook had already planned another attack with a different partner, while Malik is believed to have adopted militant jihadist beliefs while living in Saudi Arabia and from frequenting pro-jihadist circles in Pakistan. After meeting on a Muslim match-making site they discussed their support for jihad before they even met in person (McCauley and Moskalenko 2017, 254). Although the elder Tsarnaev brother

had become noticeably more devout in the years leading up to the attack, the younger Dzhokhar led a decidedly impious lifestyle with little interest in any form of Islam. On the few occasions he attended a mosque close to his university he felt out of place, and subsequently stopped going there (Gessen 2016, 124). In summary, while dyads maintain certain personal ties in broader social contexts and weak ties with radical milieus, they tend toward a form of encapsulation where the relational ties between the component parts dominate all other family and social ties – even the relationship between a first-time mother and her six-month-old daughter in the San Bernardino case (Gishkori and Craig 2015).

### 4.4. Moral Shock

The mechanism of moral shock was first theorised by Jasper and Poulsen (1995) to account for cases where individuals feel compelled to act even when they were not previously engaged in any political activism and had no existing personal networks through which they could reach out to political actors. Moral shocks occur “when an event or situation raises such a sense of outrage in people that they become inclined toward political action, even in the absence of a network of contacts” (Jasper and Poulsen 1995, 498). These are transformative junctures capable of converting fear or apathy into anger, or personal grievance into action (Johnston 2014). Moral shocks are subjective experiences that affect individuals in vastly differing ways, leading to political outrage in certain individuals, while leaving others completely unaffected. Often, they take the form of individual experiences unrelated to broader political developments: personal incidences of racism or perceived injustice that can trigger more generalised political outrage (McCauley and Moskalenko 2017, 12–21). They can also be the unintended consequences of political developments elsewhere. The Ruby Ridge killings and the Waco Siege in the early 1990s marked a watershed for many on the American far right; thereafter it was widely held that opposition to the federal government was no longer a question of political preference but one of survival in the face of its violence (Kaplan 1997, 85). On other occasions, moral shocks are deliberately contrived by political movements to motivate their sympathisers. This can take the form of propaganda, attuned to the particular sensitivities of the supportive milieu, as in the case of a German lone-actor terrorist who attacked US soldiers after viewing a jihadist propaganda film on YouTube which purported to show US sol-

diers raping Iraqi women (Böckler, Hoffmann, and Zick 2015).

In the German dyad case, two moral shocks occurred at different phases of the radicalisation process, the first generating a general desire to commit violence, the second reinforcing the former and triggering the actual organising of an attack. The publication of the Mohammed cartoons in September 2005 deeply angered Ahmad, and he was involved in local protests against them in February 2006. His outrage contributed to his gradual shift from deep jihadi convictions to action (Doc1: 16). The second trigger was the killing of al-Zarqawi in Iraq in June 2006. Both Ahmad and Hassan were avowed admirers of al-Zarqawi and his death had a deep impact on them (Doc1: 13). Hassan stated that this led them to hasten their plans for the attack. In the other cases of dyadic radicalisation, we have not identified any distinct moral shocks which triggered either the radicalisation or the actual attack. However, this might be because of our reliance on secondary rather than primary sources for these cases. The San Bernardino couple had radicalised over an extended timeframe, in the course of which a more generalised sense of outrage at Western policies towards the Islamic world accumulated. The Tsarnaev brothers (especially Tamerlan) were opposed to US foreign policy but the available data does not highlight any individual turning point that could be classed as a moral shock.

#### 4.5. Indirect Encouragement Cues

Indirect encouragement cues are critical triggers in the later stages of radicalisation and in the immediate lead-up to attacks. They may take the form of attacks by other militants, whom the perpetrators seek to emulate, or direct calls by jihadist leaders for sympathisers to commit attacks on general or specific targets (Malthaner and Lindekilde 2017). Messages such as the one issued in September 2014 by ISIS spokesperson Abu Muhammad al-Adnani, calling for followers to kill American and European citizens wherever they can (Hegghammer and Nesser 2015), provide a form of *carte blanche* justification for ISIS sympathisers to carry out any form of attack, without ever actually engaging with ISIS itself. Other attacks can also serve as indirect encouragement cues inspiring would-be-attackers to emulate them (Abelson 1972). This imitation can partially explain the clustering in space and time of similar forms of attacks, such as, the recent wave of Salafi jihadist attacks with knives or motor vehicles in Nice, Berlin, Barcelona/Cambrils, and London in 2016 and 2017. These cues also serve as a form of certifi-

cation, reassuring would-be attackers of the legitimacy of their plans, in the absence of more elaborate group encouragement.

In the German case, Ahmad had discovered a fatwa by Abu Mohammad al-Maqdisi calling on all Muslims to avenge the Mohammed cartoons (Doc1: 28). Although he already seemed determined to vent his anger over the cartoons and endorsed militant forms of action (Doc2: 26, 129), the al-Maqdisi fatwa probably reinforced his belief in the righteousness of a violent attack. Ahmad deliberately used these external calls for violence to encourage his less convinced co-conspirator to stay motivated (Doc1: 16). Much less is known about the San Bernardino attackers' online activities, as Farook systematically deleted their computer data the day before the attack (Medina et al. 2015). However, given that they had both expressed a long-term interest in jihad, it is almost certain that they would have had encountered the popular pronouncements by al-Awlaki and al-Adnani calling for attacks in the United States. Yet, the selected target, Farook's workplace and colleagues, had no symbolic resonance (unlike the Garland attacks) and a limited maximum potential number of casualties (unlike the Boston bombing). Finally, no immediate trigger or indirect encouragement cue is evident in the Tsarnaev case. Dzhokhar had downloaded the article "Make a Bomb in The Kitchen of Your Mom" from al-Qaeda's *Inspire* magazine and other material by al-Awlaki (Jacobs, Filipov, and Wen 2013), but there is no evidence that any specific text or pronouncement by Salafi jihadist actors moved them to action. Although the data is not comprehensive, the absence of the kind of consistent indirect encouragement cues that are found in most instances of lone-actor radicalisation (Lindekilde, Malthaner, and O'Connor 2018), suggests that trigger mechanisms might be found in the interpersonal dynamic within the dyadic relationship.

#### 5. Conclusion

Cases of dyadic violent radicalisation are too rare to identify any strong recurrent patterns. However, this article has revealed that as a phenomenon it has some distinct features. Like lone actors, dyads are not completely isolated from broader radical milieus and networks, and their progressive radicalisation can be analysed through their online and offline engagement with these social environments, and by examining their relational dynamics of withdrawal and social isolation. Yet, in contrast to lone actors, the dyad in itself, as a function of the intense relationship between the two indi-

viduals involved, generates a powerful internal dynamic that shapes processes of radicalisation.

This internal dynamic is not simply the case of a dominant individual exerting their influence on a more susceptible one. To some extent, this does of course occur, as the case in Germany highlights. But the interpersonal dynamics are far subtler and more complex than a simple dominant leader/compliant follower relationship. Our cases show that even the ostensibly dominant individual of the dyad, despite being capable in terms of technical knowledge and ideological motivation, are unlikely to carry out an attack alone, without the moral support of another person. The functional role of this relationship is not necessarily logistical or technical assistance; as lone actors show, violent attacks can be prepared and carried out by individuals with little or no outside help. Rather, the crucial role of these dyadic relationships seems to lie in the fact that they can help certain individuals to move from ideas and abstract plans towards violent action and sustain commitment during attack preparations over an extended period of time.

The cases examined show that some elements of radicalisation occurred in online settings. This echoes the overwhelming consensus that contemporary radicalisation comprises both on and offline features (Lindekilde, Malthaner, and O'Connor 2018; Conway and McInerney 2008). While the firm differentiation between online and offline has been rejected as oversimplified false dichotomy (Gill et al. 2015, 35), there has been a tendency to overstate the centrality of the role of online radicalisation (Weimann 2014, 1). This is arguably related to the relative ease of retrospectively uncovering online behaviour compared to the challenges inherent in the wider investigation of interpersonal offline interactions. Indeed in related research on lone actor radicalisation, only one case, that of Roshonara Choudhry, could be plausibly described as having occurred largely online (Malthaner et al. 2017, 101; Gill et al. 2015, 26–27). In the German bombing case, the attackers were not radicalised online; rather they used the internet as a means of maintaining their motivation by sharing videos and seeking out fatwas that justified the actions they already planned to undertake. We argue that the predominant driver of their radicalisation was online interaction but the intensity of the ties within the dyad, some of which – due to their geographical separation in two different cities – did occur online.

In conclusion, instances of dyadic radicalisation should be considered as part of a broader spectrum of radicalisation ranging from lone actors to small groups, albeit with certain

particularities related to the intensity of the dyadic relationship. This presents challenges in the interdiction of dyad based attacks: when the trigger for action comes from within the dyadic relationship, and not from external, indirect encouragement cues, the timing and target of attacks becomes less predictable. On the other hand, poor operational security in communications between the two individuals in the dyad, online or offline, could potentially render their plot vulnerable to detection by intelligence agencies or by people in their immediate social environment such as family members or housemates.

### Restricted sources

Document “Doc1” – Indictment, Federal General Prosecutor, Higher Regional Court (Oberlandesgericht) Düsseldorf, 11.06.2007, STE 7/07-3.

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