Understanding the Terrorist Mind

By Emile Bruneau, Ph.D.

Editor’s Note: While early research focused on the political roots of terrorism, many of today’s investigators are probing the psychological factors that drive adherents to commit their deadly deeds. Are terrorists mentally ill or do they rationally weigh the costs and benefits of their actions and conclude that terrorism is profitable? Our author traces recent advances in using imaging and experimental research to determine what motivates monstrous acts.
In the past 15 years, dramatic acts of terror have been committed against citizens of many countries. A reasonable first step towards addressing such violence is understanding where it comes from—what motivates people to join terror organizations and engage in terrorism. Recent work in experimental psychology and cognitive neuroscience provides some perspective on the mind of a terrorist.

First, it is useful to define what we mean by ‘terrorism.’ When Americans and Europeans think of terrorists, they likely imagine Muslim extremists. For example, Google searches for the term ‘terrorist’ in the month after the Boston Marathon bombings and Paris attacks (committed by Muslim extremists) increased three-fold and six-fold, respectively, relative to the months prior to the attacks. By contrast, similarly deadly attacks by Anders Breivik in Norway, who killed 69 children, and Dylann Roof, who killed nine black parishioners in the American south, were not followed by an increase in such searches. In fact, compared to the three months leading up to it, there was a slight decrease in searches using the term ‘terrorist’ after the Breivik attack.

Although it may be comforting to think of terrorists as people unlike us, I will argue that this belief belies an uncomfortable reality: that the psychological processes that drive an individual to engage in terrorism are deeply human, common across cultures—and traits that likely reside in us all.

The definition of terrorism that I use here will include a two key elements. First, it involves a group ideology. Individuals may attack, threaten, terrorize or kill others, but if they are not part of a group and not motivated to do so by an ideology, then by this definition they are not terrorists. Even a violent group, such as a drug cartel that beheads civilians, would not be considered a terrorist organization, since its members are not ideologically motivated (note, however, that many of the processes that I describe below also apply to gangs). Second, terrorism is defined by the use of violence in the service of the group’s ideology, and particularly violence that indiscriminately targets members of a group (e.g., civilians, children). Many governments would challenge this point, as they have convicted non-violent
Native and environmental activists who sabotage logging equipment under anti-terrorism laws. However, I do not consider these groups to be composed of ‘terrorists’ (but again, many of the processes described below still apply).

In the context of this definition, I will try to offer some insight into the mind of a terrorist by looking at what lies in the human mind more generally. Specifically, I will seek to explain why and how individuals support or engage in ‘indiscriminate violence driven by group ideologies’ by looking at our understanding of three processes: (1) how our brains respond to groups, (2) how our brains are led to condone or initiate acts of indiscriminate violence, and (3) how our brains process ideological information.

**Social Factors**

For most of the millions of years that our species has been around, humans have eked out an existence only through the coordinated effort of small, cohesive coalitions. Evolution has therefore shaped within us a deep desire to belong to groups. In modern times, social belonging remains a major psychological need, which we fill by connecting with others through a variety of ‘social identities’—California, professor, rugby player, progressive, vegetarian, for example. We each contain multitudes. The tendency to connect through one of these multitudes can be reflexive (“Oh wow, you’re from California, too?”).

From this perspective, the appeal of ‘terrorist groups’ is completely unremarkable. Just as a fraternity, team, club, military unit, or gang can provide a deep social connection with others, so too can ISIS, Al-Qaeda, or white, nationalist groups. Many think that people join groups for what they do (terrorists join terror groups because they are violent people; men join fraternities because they drink and party), but the deep, fundamental motivation to join any group is the need to socially connect. From this view, individuals most at risk for joining a terrorist group are not those who are poor or violent, but those who are alienated and thus drawn to an arrangement that can offer the camaraderie, brotherhood, and purpose that they are missing. This may help explain why very different demographics—the young man at a refugee camp who is deprived of regional, professional, and academic identities, and the middle-class child of immigrants in a Western country who feels alienated from his or her
host country—are common recruits for ISIS. And perhaps other groups. It may also explain why regular attendance at a mosque—which provides a strong social identity—is inversely correlated with ISIS enrollment.

Although social identities can in themselves provide clear paths to bring individuals together, the brain seems particularly prone not only to creating an ‘us,’ but also readily defining a ‘them.’ A classic study that demonstrated the ease with which group identities arise came from a team of experimental psychologists in the 1950s, led by Muzafer Sherif. In the study, the researchers aimed to generate and dissipate group conflict in a set of middle class white boys who attended a camp set up by the researchers at a park in Oklahoma. The plan was to separate the boys into two groups and then organize a series of activities to establish competitive group identities. In fact, the participants pre-empted the researchers’ strategy: the boys caught wind of each other, and immediately formed their own group identities (the ‘Eagles’ and the ‘Rattlers’) and started competing on their own—staking territory, raiding cabins, and picking fights. The silver lining of the study came when the researchers demonstrated how readily they could undo the group distinctions that they had facilitated. By orchestrating a series of threats to the entire camp (a ‘broken’ well, a stuck van) that could only be solved by working together, the stark distinctions between Eagles and Rattlers began to fade as they all adopted the overarching identity of ‘campers.’

Inspired in part by the Sherif study, a host of experimental studies have demonstrated the ease with which people start thinking in terms of ‘us’ and ‘them,’ and the consequences of such distinctions.\(^1\) For example, this research has found in controlled lab environments that people assigned to groups based on arbitrary distinctions (e.g. whether they are ‘underestimators’ or ‘overestimators’ of the number of dots on a screen) perceive members of their group to be more intelligent, trustworthy, and attractive than those from the other group. Even if people are explicitly told that the groups are arbitrarily assigned, their minds lead them to assign in-group members higher value than outgroup members.

**The Impact of Imaging**
With the advent of neuroimaging, we have begun to access the inner workings of some of these group-based processes. This has been particularly important, since the mental events associated with ‘us’ versus ‘them’ thinking are likely unconscious, and therefore difficult to assess through self-report. For example, a number of research groups have demonstrated an ‘out-group race face’ bias in a brain: when white participants see pictures of black versus white faces, they register more activity in the amygdala, a brain region that drives fear learning.\(^2\) Since the amount of neural bias is unassociated with explicit anti-black attitudes, this has been taken as evidence that when confronted with a black American, white Americans experience an automatic fear response that they are unaware of and do not necessarily condone.\(^3\)

A particularly interesting iteration of this in-group/out-group face bias illustrates the malleability of in-group/out-group distinctions: Jay van Bavel and colleagues showed that the bias in amygdala activity among White participants was also present more towards an arbitrarily defined outgroup versus the arbitrarily defined in-group, even if the groups were mixed-race.\(^4\) That is, among white Americans, there was more activity in the amygdala when viewing black versus white faces, but when the same faces were assigned to mixed-race teams, the amygdala now responded more strongly to faces from the ‘out-group’ than they did to faces from the ‘in-group,’ regardless of race. We not only have a tendency to generate ‘us’ and ‘them’, but who qualifies for each can be completely flexible, and race/skin color is just one of many arbitrary dimensions over which people can be categorized.

A study published just recently examined the neural basis of another psychological process that has been shown to be distributed parochially: trust. Here, Zaki and colleagues had participants play trust-based economic investment games with in-group and out-group members—in this case, own or rival school members.\(^5\) They found that trusting in-group members resulted in more activity in brain regions associated with pleasure, while trusting out-group members resulted in more activity in brain regions normally associated with cognitive effort (e.g., consciously withholding a response that you desperately want to give, or re-assessing a situation). The implication here is that in-group trust comes easy, while out-group trust comes only with effort.
Together, such psychology and imaging studies give us some insight into our genetic legacy. We have inherited brains that are inherently sensitive to group affiliation. We find meaning in our lives through social identities, and we experience comfort with those who share these identities. However, when creating an ‘us,’ the brain seems to seek out a ‘them,’ bringing online a series of psychological processes—including fear and distrust—which colors our view of outgroup members.

Although this schematic helps to illuminate some of the underlying dynamics that may drive people to join a terror, ISIS and groups like it are not merely fraternities or clubs. Terror groups also have an explicit ideology, and membership carries with it a tacit willingness to kill civilians. What neural and psychological processes help us understand the willingness to attach to ideologies, and to condone violence?

The Brain on Ideology

One of the most striking characteristics of terrorist groups is their strict adherence to an ideology. Ideologies provide a narrative structure with which to interpret new information and past events. Since terror groups (without exception, I believe) are composed of an aggrieved minority, their ideology is often centered around a narrative of victimhood.

Such narratives seem particularly powerful; especially, perhaps, for parochial altruists—people who love their own group so much that they are willing to die on its behalf. If you perceive that your group’s back is against the wall, this might be just the thing to motivate a parochial altruist to act on their behalf. Perhaps this is why we see the narrative of victimhood even among some of the most powerful groups in the world. For example, note that the ‘don’t tread on me’ American flag is still widely visible in the US. In fact, groups often compete with each other for who is the aggrieved victim in a conflict (i.e., ‘competitive victimhood’), which buys them more third-party support, but also may motivate their members to action.
Whether about victimhood or not, ideologies are incredibly persistent. Part of what gives them their momentum is a set of cognitive filters that help process incoming information to support and enhance the in-group’s ideological narrative. For example, **confirmation bias** describes the tendency to uncritically accept information that confirms their group’s beliefs, and scrutinize anything that runs counter to their ideological leaning. Certainly, anyone who has paid any attention to the current US election cycle has seen this at play. Another critical bias concerns the way that we construe the deviant actions of others. If I find myself doing something wrong (e.g., cutting late into a merging lane), it is easy for me to justify this by external circumstances (e.g., “I was late for an important meeting”). But when I see others doing the same, I tend to attribute this to their internal characteristics (e.g., “they are selfish jerks”). As was famously expressed by the comedian George Carlin, “Have you ever noticed that anybody driving slower than you is a moron, and everybody driving faster than you is a maniac?” The inter-group context only magnifies this process—*their* violence reflects ‘who they are’ (barbarians, colonizers, terrorists), whereas *our* violence is shrouded in circumstance (“we had to kill them because...”).

The neural infrastructure built up around maintaining ideological righteousness is immense. Dozens of distinct biases have been identified, named, and characterized. And since these processes occur automatically, in regions of our brain that are generally inaccessible to conscious introspection, we are subject to their effects whether we like it or not. We are, as the great psychologist Lee Ross said, “naïve realists” who believe that we alone see the world objectively, whereas those who disagree with us are inherently irrational. This ‘bias blind spot’ is again not owned by some groups and not others—they are part of a consequence of having a human brain that is designed to operate efficiently.

**The Brain on Violence**

Finally, a hallmark of terrorism, in my definition, is indiscriminate violence against members of the ‘out-group.’ Inter-group violence is by no means limited to terrorist groups: established governments and nation states have been responsible for the deaths of hundreds of thousands of people over the past decade. How different is ‘their’ violence from ‘ours’?
Our brains are shaped with the capability to care deeply, but also to kill. This deep ambivalence is potentially problematic. A society filled with people who are inherently very compassionate and very violent might prove unstable. Part of evolution’s solution to this problem seems to have been to tether the processes that undergird pro-sociality (e.g., empathy) and the processes that enable violence (e.g., dehumanization) to in-group and out-group distinctions. In this way, people would be potentiated to love the in-group and hate the outgroup; to fight and die on behalf of ‘us’ and to be willing to kill ‘them.’ The psychological processes that drive deep altruism (for the in-group) and motivate extreme violence (towards the outgroup) still live within us.

In the US, we fight others by proxy with our professional militaries, and so we are rarely put in a situation that would involve directly harming out-group members. But the willingness to harm others can still be assessed among non-military citizens of western democracies. Since experimental evidence is scant from actual members of terror groups, I will provide the evidence for group-based violence from ‘us’ – members of mostly majority groups that have the potential to act violently on our behalf. I will argue that these processes are similar to those acting in terrorists who actually pull the trigger.

So what drives someone to commit political violence (ideologically motivated violence), more generally? I find it useful to think of the psychology of political violence as a collection of impulses within us that tug us either towards or away from violence. If the various pulls towards violence are strong enough and the pulls away from it weak enough, a person engages in political violence; if not, they don’t. Below is a brief outline of work I’ve done to illuminate two of the processes contributing to this psychological calculus: empathy and dehumanization.

**The Empathy Factor**

We are accustomed to thinking of empathy as an unambiguous force for social good. And for sound reasons—empathy is a “social glue” that arguably has been fundamental in enabling large groups of unrelated humans to band together in complex, cooperative societies. Although good experimental evidence shows that the amount of empathy one possesses
(i.e., trait empathy) or expresses (i.e., state empathy) can drive altruism, there is also reason to believe that empathy may not be as unambiguously pro-social in inter-group contexts.\textsuperscript{9,10} Specifically, whereas empathy for an out-group likely motivates pro-sociality towards its members, in-group empathy may have the opposite effect: if people feel the suffering of in-group members particularly acutely, this may motivate them to act against members of an out-group that they see as responsible.

In experimental research, I have tested the effects of in-group empathy and out-group empathy (and the difference between the two, i.e., ‘parochial empathy’) in three contexts: Americans regarding Arabs, Greeks regarding Germans (during the Greek financial crisis), and Hungarians regarding Muslim refugees (during the refugee crisis). Predictably, in all of these settings, the more empathy participants reported feeling for the suffering of random outgroup members, the greater their willingness to help and the less their willingness to harm needy members of that group (e.g., donations to civilian victims of drone strikes). However, empathy for in-group suffering predicted the opposite: less willingness to help the outgroup and more willingness to harm. In fact, this is the conclusion drawn by a number of researchers who have interviewed attempted suicide bombers or families of people who had engaged in suicide bombings. Although some who commit political violence appear to be unhampered by empathy, the majority tend to be characterized by a strong communal focus that includes compassion and caring for others.\textsuperscript{11}

Empathy therefore contributes two ropes to the internal tug-of-war: the greater the pull from in-group empathy to harm the out-group, and the weaker the pull from out-group empathy to prevent this, the stronger the overall motivation to engage in or condone inter-group aggression. It is therefore the difference in empathy, rather than the capacity for empathy, that best predicts intergroup violence.

The Dehumanization Factor
Historically, dehumanization has accompanied some of the darkest chapters in human history. During colonization, slavery, genocide, and war, depictions of the other side as uncivilized brutes or animals has been commonplace. We see this type of dehumanizing
rhetoric from terror groups today—not only are we, the ‘infidels,’ referred to as ‘pigs’ or ‘dogs,’ but we are viewed as undifferentiated and therefore collectively responsible. The rhetoric in western democracies about disliked Muslim groups and terrorists is nearly identical: Iranians, Hamas and ISIS have been depicted in the mainstream media as rats, beasts, snakes or vermin in need of extermination.

In recent work, I have attempted to go beyond current psychological trends that use subtle measures of ‘everyday dehumanization’ to capture overt expressions of dehumanization that were typical of colonial times and still seem present today. Toward this end, we developed a measure that captures blatant dehumanization using the popular ‘Ascent of Man’ diagram, which depicts evolutionary ‘progress’ with five images, from a quadrupedal early human ancestor through fully upright ‘modern man.’ By asking people to indicate where on the image certain groups fall, we have been able to assess levels of perceived ‘humanity’ among a range of participant groups, towards a host of targets.\(^{12}\)

To our academic delight (and personal dismay), we have found that people from every country we have assayed (the US., England, Denmark, the Netherlands, Spain, Greece, Hungary, Israel, Palestine, and Jordan, and the state of Palestine) rate at least one other group to be at least 15 points lower on the 100-point Ascent dehumanization scale than their own.

At the individual level, ratings of Ascent dehumanization are highly consequential. In Europe, for example, the degree to which people dehumanize Muslim refugees predicts their support for anti-refugee policies and resistance to refugee settlement, even when accounting for conservatism and prejudice.\(^{13}\) In the US, levels of Ascent dehumanization are associated with positions on a range of socially relevant issues, including willingness to sign petitions opposing the Iranian Nuclear Accord. In a recent study inspired by anti-Muslim rhetoric from the Presidential campaign, we found that the dehumanization of Muslims was strongly associated with the willingness to punish all Muslims for individual acts of terrorism.\(^{14}\)
What’s more, the consequences of dehumanization go beyond how they motivate members of the dehumanizing group – they also affect the dehumanized. Specifically, we found that the more dehumanized Muslim Americans feel, the more likely they are to dehumanize Americans, which leads to greater support for violent forms of collective action (i.e., ‘by any means necessary’), and less willingness to report suspicious activity in their communities to the FBI. Making others feel dehumanized therefore puts us all at greater risk of that group allowing violence to happen, which could be interpreted by the dehumanizing group to justify (and compound) their dehumanization. Of course, the interaction between meta-dehumanization, dehumanization and support for violence can easily ratchet up intergroup conflicts.

Thus, if dehumanization cuts a psychological thread that normally inhibits intergroup aggression, ‘meta-dehumanization’ can provide the scissors. It is certainly not much of a stretch to imagine that terrorists think that they are dehumanized by westerners. In fact, given the prevalence of dehumanizing depictions and language used to describe terrorists, it would be shocking if they did not.

Pondering the Future
While we like to think of ‘terrorists’ as sociopaths and misfits distinct from ‘us’ and united with each other by shared pathology and unfettered hatred, in fact their most salient characteristics—fervent attachment to a group ideology and a willingness to engage in indiscriminate violence—are likely driven by deep psychological processes shaped in the human mind through evolution. The great irony, then, may be that the best way to understand the mind of a terrorist is by examining our own.

Much of how we view terrorists is built upon a series of assumptions. Primary among these is that ‘they started it.’ Afghanistan and Iraq were a response to 9/11. But from terror groups’ perspective, they are the aggrieved party and it is the other side that started it. An insightful observation recently came from a special-forces lieutenant who related overhearing some of his men talking about the Taliban they were fighting in Afghanistan. Referring to the classic patriotic film Red Dawn, where a group of rural Americans fight off the invading Russian
army, one of the American soldiers said to the other: “If this is Red Dawn, we’re the Russians.” If we accept that they are right and we attacked them first (even if only in their own minds), then how differently do we imagine we would behave in their situation?

The insightful comments from the soldiers quoted above notwithstanding, the reality is that we are using stone age psychology to solve 21st century conflicts. But there is hope. As much as evolution has baked into the human brain psychological processes that lead us stumbling into conflict, that same brain is endowed with an overriding organizational principle: flexibility. As powerful as these destructive unconscious forces may be, we are built to be able to gain conscious control of them. For example, our recent work has shown that if people are made aware of the hypocrisy of holding Muslims as a group responsible for terror attacks without considering white people similarly responsible for violence committed by white supremacists, their collective blame of Muslims dramatically decreases, which then ameliorates their endorsement of violence against Muslims. Determining which of the unconscious biases that underlie our ideological certainty can be inoculated against is one step towards mastering the destructive tendencies in our own minds.

One of the great gifts that science has given to humanity over the last 2000 years is humility. The Earth is not the center of the universe. Our DNA is not fundamentally different from that of other living things. And our brains do not differ markedly from those of feared of hated others. The great hope from the neuroscience revolution is that awareness of our own brains may actually allow us to transcend the unconscious processes that drive us to conflict.

Bio

Emile Bruneau, Ph.D., is a researcher and lecturer at the Annenberg School for Communication at the University of Pennsylvania. Prior to his formal training in neuroscience, Bruneau worked, traveled, and lived in a number of conflict regions: South Africa during the transition from Apartheid to Democracy, Sri Lanka during one of the largest Tamil Tiger strikes in that nation's history, Ireland during "The Troubles," and Israel/Palestine around the Second Intifada. Bruneau is now working to bring the tools of science to bear on the problem of intergroup conflict by characterizing the (often
unconscious) cognitive biases that drive conflict, and critically evaluating efforts aimed at transcending these biases. In 2015, he received a Bok Center Award for teaching at Harvard, and was honored with the Ed Cairns Early Career Award in Peace Psychology. His work has received funding from the UN, US Institute for Peace, Soros Foundation, DARPA, ONR, and DRAPER Laboratories. Bruneau received his doctorate from the University of Michigan.

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