



White Paper on Social and Cognitive Neuroscience Underpinnings of ISIL Behavior and Implications for Strategic Communication, Messaging, and Influence

May 2015

Contributing Authors: LtGen (Dr.) Robert Schmidle, Dr. William Casebeer (USAF Ret.), Dr. Diane DiEuliis (HHS), Dr. James Giordano (Georgetown University Medical Center), Dr. John Shook (University of Buffalo), Dr. Jason Spitaletta (JS/J-7 & JHU/APL), Dr. Nicholas D. Wright (Carnegie Endowment for International Peace)

Editors: Drs. James Giordano (Georgetown University Medical Center) and Diane DiEuliis (HHS)

Copy Editor: Mr. Sam Rhem (Joint Staff, J3)

A Strategic Multi-Layer (SMA) Periodic Publication

This white paper represents the views and opinions of the contributing authors.
This white paper does not represent official USG policy or position
This white paper is approved for public release with unlimited distribution

Table of Contents

Foreword: LtGen (Dr.) Robert Schmidle, USMC..... 3

Executive Summary: Drs. James Giordano (Georgetown University Medical Center) and Diane DiEuliis (HHS) 4

Chapter 1: Brains and Environments: Neuro-Cognitive Bases of Aggressive Ideation and Behavior, and the Potential Utility of Neuro-Cognitive Science in Assessing and Altering ISIS’ Narratives and Activities: Dr. James Giordano (Georgetown University Medical Center). 8

Chapter 2: A Concise Overview of Neurobiological Processes Involved in Aggression and Violence: Drs. James Giordano (Georgetown University Medical Center) and Diane DiEuliis (HHS) 15

Chapter 3: Neuro-cognitive Mechanisms of Motivation and Decision-Making: Dr. Nicholas D. Wright, MRCP PhD (Carnegie Endowment for International Peace (Washington, DC) and University of Birmingham (UK))..... 21

Chapter 4: Thinking About Influence Across the Spectrum of Conflict: Neurobiological Approaches: Dr. William D. Casebeer (US Air Force, Ret.) 33

Chapter 5: Moral Psychology and Meta-Constructs of Religious 'DEFIANCE': Dr. John Shook (University of Buffalo)..... 38

Chapter 6: Terror as a Psychological Warfare Objective: ISIL’s Use of Ritualistic Decapitation: Dr. Jason A. Spitaletta (Joint Staff J7 & The Johns Hopkins University Applied Physics Laboratory) 46

Chapter 7: Countering Adversary Ideological Influence in Conflict Zones - Technology Implications: Dr. William D. Casebeer (US Air Force, Ret.) 61

Table of Figures

Figure 1: Diagrammatic representation of sites, pathways and interconnected networks in the brain involved with/mediating aggressive cognition/emotion and violent behavior..... 16

Figure 2: Illustrating prediction errors (prediction error = actual event – expected event) 22

Figure 3: Maslow’s Needs’ Hierarchy..... 29

List of Tables

Table 1: Prediction Errors and Policy Options 24

Chapter 5: Moral Psychology and Meta-Constructs of Religious 'DEFIANCE': Dr. John Shook (University of Buffalo)

EMAIL: jrshook@buffalo.edu

Beliefs, Commitments, and Convictions

As philosophical psychology can amply attest, seeking “the cause” or even “a cause” for someone’s chosen conduct is usually speculative at best. A person’s stated account for his or her actions won’t clarify matters much. Any person can self-consciously mount a quick rationalization for anything done, without deeply understanding the underlying complex of motivations actually demanding expression in conduct. One’s “beliefs” turn out to only be what one is willing to admit to others; how one’s true convictions actually determine actions may remain obscure even to oneself.

That is why recited creeds and endorsed ideologies are poor predictors of people’s daily actions. What any doctrine specifically means in a situation calling for action depends mostly on the multi-faceted complexities to that situation, not on the doctrine’s formulaic message. Doctrines upheld by groups don’t reliably inspire consistent actions; a large group may appeal to a doctrine to justify peace-making, or militancy, yet few in that group may display commitment to that doctrine in their own actions. Militants appealing to an ideology point out connections between violence and ideological doctrine, but this can’t be a reliably causal relationship, since many other people share in that ideological endorsement yet they never commit violence (Gunninga and Jackson, 2011).

Whether that violence is sponsored abroad, or spawned domestically, the relationship between ideology and action is complex, multi-factorial, and highly sensitive to contextual socio-cultural dimensions (King and Taylor, 2011; Kleinmann, 2012; Mullins, 2012; Sedgwick, 2012; Stohl 2012). Giving a reason after an action isn’t anything like identifying a cause for an action. Typically, reasons aren’t causes. Psychological convictions can causally motivate patterns of actions in a reliable way, while stated beliefs usually rationalize and excuse actions only after they have been enacted (see Wright; Spitaletta, this report). It is possible, but not necessary, for stated beliefs to correspond to true convictions. Sincerity can occasionally be heard, but it is difficult to verify who is sincere. Sincerity isn’t measured by the loudness or vehemence of repeating the ideological message – that display is more for show and status.

Beneath the public displays of obedience and sincerity, one’s actual commitments are generated and put into action by commitments and convictions, not “beliefs.” The concept of “belief” has lost scientific utility as a singular term. Its normative sense lingers on in religious studies and theology departments where comparing beliefs is easier than arguing over faith. Its descriptive sense is retained by psychologists or philosophers pondering how we retain and use so much gathered information about the world. Habitual manners of getting through daily life are powered by the little dutiful motivations and commitments, the “minor” convictions, about what we are supposed to be valuing, prioritizing, and doing. This multitude of commitments is individually weak – commitments easily override each other from moment to moment, and any distraction or desire can override them as well.

More powerful commitments that typically regulate our choices despite distractions and temptations can be called “moral” commitments. We aren’t always moral, but we do sense our internal moral conscience even as we follow, or deviate from, its urgings. When we entirely break from daily routine,

Approved for Public Release

when we devote resources to something incompatible with who we think we usually are, that leap requires far greater energies to compel us to re-create ourselves. That kind of motivational energy can be seen as “major” conviction. To the extent that a major conviction makes one persist in resource-depleting and/or hazardous courses of action for the sake of an envisioned good or valuable end, it feels like one is surrendering to an ethical conviction. (Surrender to convictions leading to ends that one doesn’t take to be so good is only surrender to mental compulsion, not ethical conviction.)

When one has persistently devoted vast resources at great personal cost and risk for some envisioned worthy good or supreme end of ‘ultimate’ concern, that conviction has proven to be not only ethical in character but also “religious” in spirit (Dewey, 1938; Tillich, 1957). A religion, on the other hand, is a fairly stable body of commitments by a group (embodied in rituals, scriptures, etc.) to a worldview about “all reality” which determines what is sacred and supremely good for all life. (More precise definitions are highly contestable, but most every attempt includes both the metaphysical dimension and the axiological dimension.)

The vital psychological distinction between “belief” and conviction, and between “religion” and the religious, is crucial for the future progress of psychological and neuro-cognitive inquiry into “the springs of action,” as David Hume labeled them. Faulting a “faith” or an entire religion for anything, much less aggression and violence, is about as unscientific as that tactic should appear. Understanding some of the complexities to moral life as lived in psychological and social contexts will in turn permit asking better questions, and getting more useful answers, about the religious life and its expression in social action. As Giordano; Giordano and DiEuliis; Wright; and Casebeer note in this report, while it is important to understand underlying neuro-cognitive processes, it is unwise to focus exclusively upon the actor’s internal neural state and/or mentality in isolation; the environmental dynamics of intra-group sociality and inter-group contact is vital (see also: McCauley and Moskalenko, 2008; Atran, 2010). The psychology and neuroscience of motivation and conviction can open up vistas into our mental moral life and the religiously lived life.

The Moral Capacities: Typical vs. Abnormal

The moral life as it is mentally lived is quite complex; various kinds of decision processes, each labeled as “moral” cognitions, actually overlap only a little as they handle different sorts of decision procedures about what ought to be done. Three primary modes of moral response have received the most scrutiny in behavioral, cognitive, and neuroscientific research: the utilitarian mode (recommended by the ethics of utilitarianism), the deontic mode (urged by deontological ethics), and the role mode (elaborated by virtue ethics). Investigations in moral psychology are confirming this multi-dimensionality to moral thinking and behavior (Cushman, Young, and Green, 2010; Crockett, 2013). Normal human behavior and neuro-typical moral cognition relies on all three modes to vary degrees, applying one or another, or more than one in concert, depending on the kind of interpersonal situation at hand to be navigated.

In the main, the ordinary role response to a situation involving multiple people:

- attends to emotional concerns for those people having a proper social relationship with oneself
- regards people in social relationships as valuable persons, not to be harmed or violated
- considers the roles of oneself and others in social relationships as important
- seeks a proper response allowing each person to fulfill their expected roles towards each other

Approved for Public Release

In contrast, there is a hyper-role response to a situation involving multiple people, which:

- attends to emotional connections with people who respect one's own role
- regards people in close social relationships with oneself as valuable persons to be protected
- considers one's own role as potentially or actually crucial for sustaining the whole network
- seeks a proper response confirming and expanding one's important role for the network

However, psychological factors, induced by a variety of environmental/situational effects, can evoke an excessive hyper-role response that I refer to as: *Directed Emotion Favoring In-group Ascendancy Needing Triumph* (DEFIANT); this is characterized by:

- strong suppression of generic emotional concern for people
- strong enhancement of specific emotional concerns for special persons related to oneself
- regard oneself as urgently crucial for upholding righteous protection of those special persons
- consider oneself as rightfully worthy of privileged status as defender of the network

Psychological factors such as these do not spontaneously erupt from the inner recesses of one's mind; as Giordano notes in this report, environmental factors are key.

The Social Self, Social Competencies, and Confrontation

People under the urges of that DEFIANT feeling typically do not release their energies in uncivil ways. The surrounding civic life and cultural heritage has available resources to mitigate aggression. Successfully participating in organized society binds a person into working for common good within decent institutions. Holding family, work, and community roles helps to keep one fulfilled and feeling needed. Many duties accumulate as one enters full adulthood and then middle age. Among cultural resources, religiosity can help alleviate anxiety from perceived underclass status or anger over prejudice and injustice. Political action by non-aggressive means, if political structures are perceived to be legitimate and functional, can be an outlet, as well.

The capacity for embarking on plans to enact DEFIANCE (*Directed Emotion Favoring In-group Ascendancy Needing Confrontational Engagement*) wouldn't grow without the civic/cultural realm's complicity and negligent failure. Where that failure occurs, reinforcing factors get influential opportunities.

- DEFIANT can worsen where the absence of utilitarian goals and remedies leads towards frustration that community welfare can't be advanced by ordinary means.
- DEFIANT can get reinforced where one feels duty-bound to participate in swiftly remedying injustice and rescuing the community.
- The hyper-role mode of DEFIANT can get reinforced where one can't gain a respected role in society by civil means but a heroic role awaits for those fighting for triumph.

The rare people who can nevertheless find the hopefulness and the strength to pursue the greater good by extraordinary public action express DEFIANT through civil expression and nonviolent means. Civil

Approved for Public Release

Rights movements have sometimes been able to stay mostly nonviolent, though civilly confrontational. However, if that hopeful utilitarian option doesn't take hold, the duty-based and hyper-role modes can bloat and manipulate a person's convictions towards justifying confrontation. Confrontation may take any number of concrete forms, both secretive and public, aiming to confuse, hinder, deflect, obstruct, compromise, or destroy assets (human, material, cyber, etc.) of the target (see: Giordano; Spitaletta, this report).

Belief systems stand ready to manipulate a person's convictions. There are more political, quasi-political, religious, and quasi-religious belief systems than encyclopedias can encompass. Much of DEFIANCE receives reinforcement from cultural and political ideologies having little to do with religiosity. Those ideologies can promise exaggerated roles of importance and status without having to appeal to religiosity at all. That is why many militants don't actually apply their religious lives to the cause and couldn't even explain the religion properly. We focus only on religions here.

The close relationship between religions and morality has been amply confirmed from many interdisciplinary perspectives (Graham and Haidt, 2010). All the same, religions do not uniformly encourage the same kinds of moralities or specific moral duties. That religious variability must be taken into account. Any religion can be moral; any religion can sometimes be immoral as well. Religions are no more "inherently" peaceful than they are "inherently" violent. The modest relationship between strident religious adherence and tendencies towards aggression is detectible, but this effect shouldn't be exaggerated (Blogowska, Saroglou, and Lambert, 2013).

What is necessary for religion-related DEFIANCE is that a person's duty-based and hyper-role modes are enhanced further by focused commitment and religious conviction. But DEFIANCE cannot be aroused by just any religion, and not necessarily by rigorous sects of religions. Religion per se cannot cause DEFIANCE. The key ingredient is just the right sort of religious conviction about the sacred that are connected to the moral duties and roles peculiar to DEFIANT.

Generic Violence and Sacredness

It simply isn't true that monotheism has a tighter relationship with large-scale violence than other types of religions. Religions throughout recorded history, whether they worship one god or many, have been intimately involved with promoting or tacitly supporting wars of conquest, revenge, and honor, with few exceptions. The examples of entire religions denouncing aggressive war when the rest of society deems it just and patriotic are equally as rare. Smaller denominations and sects are more likely to defy society's judgment. This is seen when pacifist sects turn against a tide favoring war, and it is also seen when militant sects recklessly race ahead of a society seeking peace.

As matter of fact, religious sects classifiable as fundamentalist tend to display characteristics that are more compatible with duty-based and hyper-role modes to produce a personal "moral ethos" controlling one's commitments. Fundamentalist sects do not encourage the sort of experimental questioning and thinking needed for changing society to improve the social good into the future; fundamentalists instead look to imitate a fixed notion of an ideal past society. That is why dutiful adherence and conformity is highly valued, clear lines are drawn between the in-group and out-groups, and allegiance to strict rules is prized (see here: Wright, this report). Where fundamentalist sects can effectively control their social conditions, they distribute responsible social roles in hierarchical structures that typically include authoritarian lines of command.

Approved for Public Release

Religiosity in general does not display significant tendencies towards strict dutifulness or authoritarianism, but the range of religiosity from conservatism on to fundamentalism does display that tendency (Berns et al., 2012; Piazza, 2012; Young, Willer, and Keltner, 2013). Furthermore, participation in fundamentalist sects is often self-selected. While many are simply born into that kind of religion, many do leave, and many join later in life. Long-time fundamentalists are therefore more likely to be the sort of people who have a temperament that prefers dutiful and authoritarian groups. This correlation has been measured, and it may involve heritable traits (Ludeke, Johnson, and Bouchard, 2013).

In actuality, few fundamentalist sects promote that DEFIANT feeling and rarely encourage DEFIANCE with violence. The previous section explains why: DEFIANCE best inflates under certain deleterious socio-cultural conditions. Furthermore, fundamentalism isn't required for DEFIANCE: a single person, without any encouragement from a sect, can become the "lone wolf" perpetrator of violence. However, if a fundamentalist sect claiming to represent the best interests of a subjugated community persuades some followers that only immediate action can bring protection and justice to that community, the factors for DEFIANCE can come together in the minds of those already susceptible to that message (see: Giordano, this report). Religious DEFIANCE emerges in that matrix, capable of manipulating a religious person's moral ethos further.

- Religious DEFIANCE, narrowly defined, appeals to a person's sense of sacred values and religious convictions, through a well-crafted narrative, to develop a DEFIANT attitude into a moral commitment to commit acts of confrontation, and perhaps aggressive conflict and open violence as well.

Religious DEFIANCE in its violent and warlike manifestations will display variations, depending on the type of sacred values promoted and the moral convictions involved. Again, the way that the moral ethos of a person gets manipulated by the religious narrative heard by each religious person, filtered by their own mindset, has great influence over resulting actions taken. In general, religious DEFIANCE further distorts and exaggerates the moral ethos of a DEFIANT person.

- DEFIANCE allows a rationalization that community welfare is best advanced by near-term confrontation and violence without moral discrimination among individuals targeted.
- DEFIANCE rationalizes one's duty-bound prioritization, over all other duties, of remedying injustice and rescuing the community.
- A hyper-role ethos infusing DEFIANCE rationalizes a heroic role, having authoritarian approval (by an actual person or a figural personage), to assume fighting status for communal triumph.

Religious DEFIANCE can occur within closely-knit communities, loosely networked nodes, or even with lone-wolf perpetrators inspired by mythical figures.

What sort of religious narrative about sacred values and corresponding religious convictions could supply all three kinds of infusions to DEFIANCE? The most efficient and coherent narrative would include all three distorted ethos in a mutually supportive way, blending together to bond them tightly.

Approved for Public Release

Religious fundamentalist narratives supporting DEFIANCE accordingly tend to dictate what is supremely sacred, depict all duties ultimately deriving from some sacred authority, and teach that one's supreme duty is obeying divine authority. They draw a clear line between persons worthy of respect and those deserving no moral regard at all. They specify how a true believer can play a needed role in carrying out sacred ideals, and when a believer can know when to get DEFIANT. Unless the faithful are carrying out the sacred will, their own right to existence is threatened and they could become in some sense "unreal" from the fundamentalist (or divine being's) perspective, creating an existential crisis of deep anxiety. Relief from that deep existential anxiety is only gained by submission and obedience (Griffin, 2012).

Because of the way that this role of DEFIANCE is rationalized by such a narrative, a person playing a violent role in a commanded war can rationalize the elimination of anyone outside the true community without any moral conscience lingering to question such actions. Such a person could regard that heroic role as a measure of horizontal status among respected peers and communal commanders for social status, and/or regard that heroic role in a transcendent vertical sense in relationship with the divine (Fricano, 2012).

According to this religious narrative, the elimination of infidels may not be wrongful murder, because (1) infidels are not in the true community according to God; (2) infidels have no goodness or right to exist by being separate from God; (3) the elimination of infidels is perfectly right and just when God wills it so; and (4) during war the infidels are eliminated by God's command.

To summarize, religious DEFIANCE can be manipulated towards various kinds and levels of violence through the design of a religious narrative about the sacred and supreme ethical convictions. The hypothetical narrative crafted above, and its extreme monotheistic theology, is but one of many possible variations able to combine religious fundamentalism, dutiful authoritarianism, and heroic role-playing.

Religious DEFIANCE and Just War Theory

It must be emphasized that extreme religious DEFIANCE is quite compatible with extreme political violence for Machiavellian or utilitarian ends. There is no dichotomy between groups appealing only to religiosity and other groups appealing only to power. A typical group engaged in extreme violence will offer utilitarian rationalizations to those needing them, while simultaneously offering sacred rationalizations to those susceptible to such messaging. It may also happen that religious DEFIANCE can be restrained by cold calculations about long-term interests concerning future relations with neighboring nations and peoples.

It should also be emphasized how religious DEFIANCE can be restrained by other staunch traditions upheld in a culture. One example of that restraint is Just War Theory.

Many religious cultures in previous centuries and millennia, all around the world, independently invented ethical standards for the proper conduct of war. Not surprisingly, many converged on some standards heard in the "Just War Theory" of the West. Rules about the permitted means of starting and conducting war, treating defeated combatants, avoiding the killing of noncombatants, and avoiding harm to women and children, are typical features to these standards.

Approved for Public Release

Islam developed its own version of Just War Theory (Al-Dawoody, 2011) preventing the worse abuses of religious DEFIANCE through counterbalancing its utilitarian, duty-based, and role ethos distortions, by specifically (1) demanding that conducting war should intelligently aim at the long-term good, not just short-term retribution or disproportionate destruction; (2) requiring that only lawful commands from authentic authorities are obeyed; and (3) urging that heroic roles should not be involved with dishonorable acts towards noncombatants and the vulnerable. However, a crafted religious narrative, such as that fundamentalist narrative sketched above, attempts an override of Just War Theory with duty-based, authoritarian rigidity that is sufficient for rationalizing indiscriminate havoc and killing.

Recommendations for Action

Based upon this information, I offer the following recommendations:

- The principles and traditions of Just War Theory, still alive in every civilization today, should be staunchly promoted and reinforced to global view to lend encouragement to those everywhere trying to restrain sectarian DEFIANCE.
- The defusing and refutation of singularly sacred narratives would be wise, along with the stabilization of societies and governments so that there can be alternative outlets to those feeling DEFIANT.
- Ultimately, watching for the signs of developing DEFIANCE among those reaching a DEFIANT level is necessary, and the social and inter-personal factors encouraging that DEFIANT feeling should be counteracted at the local level.

References

Al-Dawoody, Ahmed. (2011). *The Islamic Law of War: Justifications and Regulations*. Basingstoke, UK: Palgrave Macmillan.

Ashour, O. (2010). Online de-radicalisation? Countering violent extremist narratives: Message, messenger and media strategy. *Perspectives on Terrorism*, 4(6), 15-19.

Atran, Scott. (2010). *Talking to the Enemy: Faith, Brotherhood, and the (UN) Masking of Terrorists*. New York: HarperCollins.

Barlett, J., and Miller, C. (2012). The edge of violence: Towards telling the difference between violent and non-violent radicalisation. *Terrorism and Political Violence*, 24(1), 1-21.

Berns G.S., Bell, E., Capra, C.M., Prietula, M.J., Moore, S., Anderson, B., Ginges, J., and Atran, S. (2012). The price of your soul: neural evidence for the non-utilitarian representation of sacred values. *Philosophical Transactions of the Royal Society B*, 367(1589), 754-762.

Blogowska, J., Saroglou, V., and Lambert, C. (2013). Religious pro-sociality and aggression: It's real. *Journal for the Scientific Study of Religion*, 52, 524-536.

Crockett, M. J. (2013). Models of morality. *Trends in Cognitive Sciences*, 17(8), 363–366.

Approved for Public Release

- Cushman, F. A., Young, L., and Greene, J. (2010). Multi-system moral psychology. In J. Doris et al. (Ed.), *The Oxford Handbook of Moral Psychology* (pp. 46–69). Oxford: Oxford University Press.
- Dewey, John. (1938). *A Common Faith*. New Haven, Conn.: Yale University Press
- Fricano, Guy. (2012) Horizontal and vertical honour in the statements of Osama Bin Laden. *Critical Studies on Terrorism*, 5(2), 197-217.
- Graham, Jesse, and Haidt, Jonathan. (2010) Beyond Beliefs: Religions Bind Individuals Into Moral Communities, *Personality and Social Psychology Review*, 14(1) 140–150.
- Griffin, Roger. (2012). *Terrorist's Creed: Fanatical Violence and the Human Need for Meaning*. Basingstoke, UK: Palgrave Macmillan.
- Gunninga, Jeroen, and Jackson, Richard. (2011). What's so 'religious' about 'religious terrorism'? *Critical Studies on Terrorism* 4(3), 369-388.
- Kleinmann, S. M. (2012). Radicalisation of homegrown Sunni militants in the United States: Comparing converts and non-converts. *Studies in Conflict & Terrorism*, 35(4), 278-297.
- McCauley, C., and Moskalenko, S. (2008). Mechanisms of political radicalisation: Pathways toward terrorism. *Terrorism and Political Violence*, 20(3), 415-433.
- Ludeke, S., Johnson, W., and Bouchard, T. (2013). "Obedience to traditional authority": A heritable factor underlying authoritarianism, conservatism, and religiousness. *Personality and Individual Differences* 55, 375–380.
- King, M., and Taylor, D.M. (2011). The radicalisation of homegrown jihadists: A review of theoretical models and social-psychological evidence. *Terrorism and Political Violence*, 23(4), 602-622.
- Mullins, S. (2012). Iraq versus lack of integration: understanding the motivations of contemporary Islamist terrorists in Western countries. *Behavioral Sciences of Terrorism and Political Aggression*, 4(2), 110-133.
- Piazza, Jared. (2012) "If You Love Me Keep My Commandments": Religiosity increases preference for rule-based moral arguments. *International Journal for the Psychology of Religion*, 22(4), 285-302.
- Sedgwick, Mark. (2012) Jihadist ideology, Western counter-ideology, and the ABC model. *Critical Studies on Terrorism*, 5(3), 359-372.
- Stohl, Michael. (2012). Don't confuse me with the facts: knowledge claims and terrorism. *Critical Studies on Terrorism*, 5(1), 31-49.
- Tillich, Paul. (1957). *Dynamics of Faith*. New York: Harper.
- Young, O. A., Willer, R., and Keltner, D. (2013). "Thou Shalt Not Kill": Religious fundamentalism, conservatism, and rule-based moral processing. *Psychology of Religion and Spirituality*, 5(2), 110–115.