

Cognition in Context: New Approaches to New Islamist Movements in the Middle East

Justin E. Lane, Queen's University Belfast, Institute of cognition and culture
e-mail: cogijl@gmail.com

Abstract

In the past two decades cognitive anthropology has offered a radically new framework for the study of social movements and complex ideologies. Besides creating a scientific foundation for the study of religion and culture, its empirical basis offers a less biased approach to controversial subjects such as new religious movements and religious violence that traditional anthropological approaches have struggled to maintain. This paper argues that new religious movements can be analysed using the tools of cognitive science, specifically new Islamist movements in the Middle East affiliated with Al-Qaeda. Such an approach yields an objective lens to analyse the claims that their ideologies make them violent. By presenting a brief analysis of movements inspired from the Sunni tradition in the 20th century this paper intends to show that the causal factors of religious violence are largely the product of the dynamic mental mechanisms interacting with a physical and social environment.

Keywords

Al-Qaeda, Cognition, Islam, Evolution, Prospect Theory, Simulation models, Terrorism

Introduction

In the modern world it is assumed that religious violence is an anomalous human activity. While religion is a unique human activity, intergroup violence is neither unique to any present context nor to *Homo sapiens* (Wrangham – Peterson 1996). It is the purpose of this paper to attempt to analyse some of the basic patterns of human socio-cognitive behavior within an evolutionary framework, insofar as they are applicable to violence as perpetuated by the New Religious Movements (NRMs) in the contemporary Islamic world that are affiliated with Al-Qaeda. These movements are largely analysed without regard to the methodological and theoretical approaches that are available to scholars interested in subjects of such intense controversy.

While general claims can be drawn from the findings within the cognitive science of religion, such generality is not always useful in discourses related to particular socio-historical contexts. By allowing evolutionary psychology to serve as both an empirical constraint and theoretical framework, behaviors within specific contexts can be explained without relying on idiosyncratic or psycho-pathological explanations for “religious violence”. The scientific approach to controversial

subjects in the study of religion, such as religious violence and NRMs, serves as a way to elucidate the problem with both reliability and systemicity. Furthermore, by utilizing an evolutionary framework an interdisciplinary approach can be constructed that draws on evolutionary psychology, social psychology, and behavioral economics in order to create a more complete understanding of violent Islamists. Such an approach has been noted to be important to the understanding of these movements (Crenshaw 2000), but there has yet to be an interdisciplinary attempt within a single framework.

In the interest of maintaining the appropriate scope, this paper will be limited to only the modern phenomena of violence perpetuated by Sunni Islamist groups affiliated either directly or indirectly with Al-Qaeda. While the social dynamics of this group are not known with certainty, these dynamics have presumably changed since the announcement of Bin Laden's death on 1 May 2011. However, it has been noted that the presumed successor to Bin Laden, Ayman al-Zawahri, is still at large and will be fulfilling the role as the "leader" of Al-Qaeda (Baker – Cooper – Mazzetti 2011). What has been reported seems to depict a religious movement that is disperse (Rabasa et al. 2006)¹, resembling a client or audience cult in sociological dimension (Stark – Bainbridge 1987). Therefore, this paper will not focus specifically on the social dynamics of face to face interactions among supporters of Al-Qaeda; most supporters presumably never meet the international leaders of the movement, rather they become involved in localized movements (Rabasa et al 2006).

Since the late 1980s this group has become infamous as an international terrorist organization and has achieved particular notoriety since it attempted to destroy the World Trade Center buildings in 1993. This was followed by a number of attacks around the globe, most notably: the bombing of the USS Cole in 1996, the bombings of the US embassies in Nairobi, Kenya and Dar es Salaam, Tanzania in 1998 and the destruction of the World Trade Centers and attack on the Pentagon on September 11th, 2001. These high profile events and the subsequent media coverage that followed have generated a great deal of discussion about Al-Qaeda, its ideology, and its supporters. However, there is no theoretical continuity to the discussion, generating oftentimes incompatible claims that foster confusion. In the following sections, contemporary research will be presented from multiple disciplines that can be utilized to better understand the situation at hand. While this paper in no way intends to prescribe a course of action nor to serve as a complete overview of the scholarship available, it does intend to note a number of inconsistencies in how scholars approach this subject and construct a framework for meaningful progress.

¹ This decentralization has been noted to be a feature of the group only after the US and ally military operations of 2001–2002. Prior to that, the group was more centralized both geographically and socially. It is unclear, but doubtful, that the death of Osama Bin Laden on 1 May 2011 will have a direct impact of the centralization of the movement. With a clear successor in place (al-Zawahri) there will still be a "leader", however, the media coverage will give large amounts of attention to the group that the localized groups will doubtlessly capitalize on.

An Evolutionary Approach to Homo Religiosis

Although psychologists do not generally rely on evolutionary theory directly, scholars employing a cognitive approach to religious and cultural phenomena have relied heavily on evolution as a theoretical foundation (Atran 2002; Boyer 2001; Dennett 2007; Wilson 2002). However, there are some approaches to the human mind from psychological perspectives that operate within insufficient or out-dated frameworks such as rational choice theory or psychoanalysis. Here an interdisciplinary approach consisting of economic theory, social psychology, cognitive science, and religious scholarship will be utilized that assumes an evolutionary framework as the underlying theoretical commitment throughout. While defences of this approach are available in great detail (See Tremplin 2010 and Tooby – Cosmides 2005), the use of evolutionary theory draws on physicalist views of the brain/mind as an organ which mediates and controls human actions albeit in a complex and dynamic manner. This approach leaves little room for the supervenience of ideologies such as religion or culture as causal factors *per se*. Instead, variations among human groups is the result of how human minds negotiate the dynamic variables in their environment, *id est* the variations commonly noted by religious scholars are “evoked” by the mind’s interaction with its environment (Cosmides – Tooby 1992; Tooby – Cosmides 2005).

As an evolved organ, the human mind cannot be readily disassociated with the environment(s) in which it evolved; it was the pressures of the environment and the ateleological processes of natural selection that have resulted in the formation of the mind, as we typically see it today. This process does not always evolve in a positive direction, resulting in adaptations, but is *random* in its variation and thus can produce exaptations and spandrels that are not evolved to directly solve an evolutionary problem or increase fitness (Buss et al. 1998). The resulting organ can carry out extremely complex “computations” very quickly, sometimes at the expense of accuracy. It has been posited that it is the activation or mis-activation of these mental mechanisms that are inherent in the minds of human populations in a uniformed manner that gives rise to cultural representations and symbols (Sperber – Hirschfeld 2004). These “mis-firings”, if you will, result in behaviors without fitness enhancing properties such as religion, culture, and art (Lewis-Williams 2004). It would follow, if the mind is the product of an environment and then must negotiate that environment that the actions and thoughts of the human mind are inseparable from its environmental context (Todd – Gigerenzer 2007). This understanding of the mind, as possessing pan-human universals at a systematic level, that are activated differently depending on environmental context allows for complex behaviors, even religious behaviors (Paden 2009) to be analysed within an evolutionary framework that admits that there are significant differences between social groups, but without succumbing to the biases of interpretive lensing.

When applying this theoretical framework to social groups, such as those sharing similar beliefs and participating together in religious activities, the dynamics of the social group cannot be neglected. For the most part, the concerns of religious scholars focusing on the underlying cognitive processes are only interested in looking at the broad cognitive mechanisms (usually framed among debates of domain specificity and modularity). However, social psychologists have empirically

shown that the social environment can also affect behavior in many ways and that such an application is applicable to complex human behavior (Aronson 2008).

A Brief History of Al-Qaeda's Ideology

Due to the causal efficacy that is sometimes granted to religious ideas when talking about religious violence, and specifically about Al-Qaeda, this discussion begins with a brief overview of Al-Qaeda's ideological history; focusing on a few points that reoccur throughout the literature. Al-Qaeda traces its ideological roots to the mid-20th century Wahabist movement and the writings of a number of related scholars (Hellmich 2005). Most notably among them is Sayyid Qutb. Qutb was born in Musha, Egypt in 1906 and grew up in a prominent Sunni family. As a young man, Qutb received a BA in education from the Dara al-Ulum Teacher College. In 1948 he was sent to the United States by the Egyptian department of Ministry and received his MA in education from the University of Northern Colorado. Upon his return he joined the Society of Muslim Brothers and became active in politics (Bergesen 2008).

Qutb's writings inspired and informed by his experience in the political arena have a number of common threads that inform Al-Qaeda and related movements to this day; most notably, his concept of *jāhiliyya*² or, as it is translated from the Qur'an, "Age of Ignorance" (Shepard 2003). In early Islamic literature, *Jāhiliyya* referred to the Arab world before the Prophet Mohammad received the Qur'an. For Qutb and his readers *jāhiliyya* refers to the lack of the Allah's sovereignty in Arab politics and is directly juxtaposed with any and all political systems that do not directly uphold the *shari'a* (i.e. Islamic law) in its entirety. Thus, for Qutb and his followers, the only acceptable state is a fully Islamic state. In order to initiate and institute such a state, Qutb supports offensive revolutions or struggles (*Jihad*).

Jihad, since September 11th has become common parlance in English. While commonly translated as "holy war", its traditional theological connotation is one of struggle. This struggle is normally an internal or spiritual struggle to be a good Muslim. When it is mentioned in the Qur'an as a physical conflict, it is limited to defensive actions and pertained to the right of the first Muslims to practice their religion³ (Tamimi 2009). Historically, *jihad* has been the actions of an established military or political force (Juergensmeyer 2000). However, being that Al-Qaeda claims that, since the usurpation of the Taliban in Afghanistan, there is no current political state that is Islamic, like Qutb, all current political bodies fall under the umbrella of *jāhiliyya*, i.e. non-Islamic (Hellmich 2005). This delocalizes the concept of *jihad* and makes it justifiable only for Al-Qaeda and its affiliates to carry out armed *jihad*.

In the modern context, the term *jihad* was reinvented by another Egyptian writer by the name of Abd al-Salam Faraj, most clearly explicated in his text "The Neglected Duty"⁴. Faraj held the belief that the concept of *jihad* was more literal

² Its Arabic root, *j-h-l* pertains to barbarism more than a lack of knowledge. (Shepard 2003).

³ Tamimi (2009) notes that the Arabic root of the word *jihad* (*j-h-d*) is entirely different from the root of the word to fight or kill (*q-t-l*).

⁴ Originally published in an Egyptian newspaper in 1981, there is a suggested translation in Jansen, J. J. G., (1986). *The Neglected Duty: The Creed of Sadat's Assassins and Islamic Resurgence in the Middle East*. New York: Macmillan.

and that the Qur'an and Hadith were primarily texts about war (Juergensmeyer 2000). Given the general fervor, it is safe to say that this concept has been taken to heart by a number of Islamist radical groups, including Al-Qaeda (Sivan 1989; Hellmich 2005; Rabasa et al. 2006). At least one of the men arrested for the 1993 World Trade Center attack has admitted to having both English and Arabic translation of Faraj's treatise (Juergensmeyer 2000). Generally, the booklet "The Neglected Duty" is a call to arms directed at all "true Muslims" to rise against both Muslim "apostates" as well as those outside the Islamic community who are seen as enemies (Juergensmeyer 2000). Here it is imperative to note that this ideology was not co-opted in its entirety by Al-Qaeda. Faraj explicitly noted that women and children are to be avoided as targets (Juergensmeyer 2000). Al-Qaeda and associates disagree with this claim, for them anyone who is not of the Islamic community (*umma*) is a fair target for the *jihad* (Hellmich 2005; Pape 2003; World Islamic Front 1998).

The third concept that must not be overlooked is the Islamic concept of *umma*. In Arabic, *umma* means community. This is a fictive kin group and is defined relative to the community of the user. For example, among supporters of Al-Qaeda, American's are not considered part of the *umma*, even if they are devout Muslims. In fact, anyone who is willing to cooperate with the United States government is considered by Al-Qaeda to be an appropriate target for their paramilitary operations. Interestingly, this includes Saudi Arabia, the home to an overwhelming amount of Al-Qaeda supporters (Atran 2003) and recruits (Rabasa et al. 2006) as well as the late Osama Bin Laden (Hellmich 2005); even though the Wahabist party that rules Saudi Arabia is a Sunni that supports many aspects of *shari'a* and has been opposed by modernizing influences since the late 1980s (Layish 1987). This also includes Egypt and Pakistan, the homelands of many of the ideologues and high ranking Al-Qaeda officials. However, in a report prepared for the United States Air Force on global Jihadist movements, it is noted that the influence of Egyptian writers such as Qutb and Faraj may have focused ideological authority away from Saudi clerics and the Wahabist party (Rabasa et al. 2006); stripping them of the authority inherent in their ruling over the home to both Mecca and Medina as well as the closest modern state to the Islamic caliphate. The only known state believed by Al-Qaeda to be a true Islamic state was Afghanistan, where the Taliban enforced *shari'a* or Islamic Law (Juergensmeyer 2000; Hobbs 2005). However, that is not currently the case since the rule of the Taliban was abolished by Operation Enduring Freedom (Hellmich 2005; Hobbs 2005; Rabasa et al. 2006). Since such time, it seems that the focus of a Holy land, where the movement could re-establish the Caliphate, has shifted back to the Arabian Peninsula (Hobbs 2005). Indeed, it is this geographical locus that generates many recruits for Al-Qaeda and its affiliates (Atran 2006).

Although *umma*, in its original context referred to the entire Muslim community, the Shi'a community is considered an apostate sect by the Sunni groups affiliated with Al-Qaeda; a belief based in a centuries old discrepancy over authority and succession (Sivan 1989). This theological split, along with the observation that many Arabic speaking Sunnis do not speak the Persian languages common to Shi'a communities (and vice versa), creates a rift in the Muslim world that effectively isolates terrorist organizations along sectarian lines. These lines cannot be taken

lightly either as the Sunni Al-Qaeda leader Abu Musab al-Zarqawī orchestrated attacks on Shi'a Muslims in Iraq in 2004, killing hundreds in order to inspire a civil war between Shi'a and Sunni (Bonney 2004; Rabasa et al. 2006). In conclusion, the concept of *umma* for the supporters of Al-Qaeda only pertains to those within the radical movement itself and excludes any current government or state and any organization that may share a militant ideology but does not its theological convictions.

Al-Qaeda still draws on the writings of many Sunni writers in order to invoke theological justifications for their political agenda. Let it be clear, the motivations of these groups and their supporters are political. Their writings and their inspiration are based on political treatises that are admittedly complicated by the fact that the justifications are framed in religious rhetoric. However, this should be unsurprising among societies that do not have the political separation of "Church and State" that is so common among western societies. It has been noted for some time that such a separation is "western", and assuming such a separation results in a well-known bias (Smith 1988)⁵. In the following section, a proposal will be made that a bottom up evolutionary approach is more appropriate, instead of the top-down causal approach that is often used.

An Evolutionary Approach to Al-Qaeda and Related Sunni Extremist Groups

In the previous section, three concepts that are cornerstones of Al-Qaeda's ideology were outlined. While there are many other ideas that Al-Qaeda and similar groups employ to construct their arguments, as we move on, it is important to keep in mind that the theological justifications for their political actions are not the motivational factors behind their actions. Rather, they are *post hoc* justifications, employing religious rhetoric in order to rationalize and support political actions. These actions may be viewed within an evolutionary framework that may explain their actions more than the arguably erroneous assumption that their religion made them do it.

For instance, Al-Qaeda's main demands revolve around a number of themes. These themes being that the United States and its allies must withdraw their presence from Muslim countries (particularly the Arabian Peninsula) and the United States and its allies must cease their military operations in these countries, presumably so that Al-Qaeda may reinstate a caliphate that they would doubtlessly lead. Coming from an evolutionary framework, one can view this situation as an in-group (Al-Qaeda) fighting an out-group (the United States being the embodiment of this group) in order to procure land or shelter and resources. While this statement is an *extremely* simplified reframing of the situation, this foundation allows us to work within a natural framework and look more precisely at the situation.

The concept of *jāhiliyya* serves two purposes for the groups at hand. First, it defines an intended risk of action, or inaction, that societies could fall into a dark age without the guidance of Allah. Second, it also serves to delineate those who are

⁵ Weber (1930) has even noted the Protestant nature of such socio-political systems, a claim that has been critically supported with direct reference to a cross cultural comparison with "Islamic culture" by Lincoln (2006).

not identified as the in-group of the *umma*. Al-Qaeda has created a clear distinction of in-group and out-group and the risks associated with belonging to both groups. Furthermore, by denoting rival Islamic traditions as outside of the *umma*, they define which group sufficiently fills the niche of Allah's true followers (Sivian 1989; Rabasa et al. 2006; Rabasa 2007).

The *umma* also delineates a fictive kin-group. While, the group does not serve as a *unit* of selection in and of itself⁶, evolutionary theory does posit that sacrifices can be made in order to preserve a group that one belongs in (Hamilton 1964; Atran 2003, 2006). Hamilton, in his seminal paper entitled "The genetical evolution of social behavior", supported the notion that self-sacrifice for one's kin can be rationalized in light of the tenants of evolutionary genetics, even if the sacrifice is fatal. While still rare in many forms of warfare, suicide bombers are a phenomenon closely associated with Al-Qaeda's operations throughout the world (Atran 2006).

Such fatal missions, also known as "martyrdom operations", have increased as a tactic among Islamic extremist resistance movements since the early 1980s (Atran 2004; 2006). These actions are highly controversial, misunderstood, and seemingly irrational (possibly related to the claim that they are religiously motivated). Clinical psychologists stated that those who carried out these operations suffered from one or many psychopathologies (Crenshaw 2000; Atran 2003; Post 2005). These claims continue to be perpetuated by the media to this day (Atran 2003; Post 2005; also See Somerville 2011). However, recent empirical work has shown that the people who carry out these operations are not only mentally typical, but have above average socio-economic status and educational background (Atran 2003).

How then is one to interpret this data? In light of evolutionary psychology, it is quite possible that these actions are rationalized using mental mechanisms informed by environmental contexts rather than inspired by religion or psychopathology. Such an approach also filters attempts at invoking out-dated psychological paradigms such as Freud or Erikson (Arrina – Arigo 2005) and allows for researchers to understand subtle subconscious variables.

One approach that allows for variables of context, resource allocation, territory, and individual perspective is behavioral economics. Where previous economic models of religious behavior have been powerful tools for understanding (Stark – Bainbridge 1987, 1996; Stark – Finke 2000; Iannacone – Berman 2006) and modelling human religiosity (Bainbridge 2006; Iannacone – Makowsky 2007), these approaches are fundamentally flawed because they assume rational choice as the basis of human decision making. However, while many of the propositions of these endeavours are useful approximations, they can be further updated through understanding the modern science of cognition, notably the heuristics and biases program and prospect theory (Kahneman, Slovic – Tversky, 1982; Gilovich, Griffin, – Kahneman 2002; Kahneman – Tversky 2000; Ariely 2010). If such an approach took into account the appropriate statistical data, cognitive constraints and proclivities, and environmental factors, it would provide a bottom up approach to statistically predicting behaviors rather than just modelling the data without regard to the mental mechanisms causing the actions of interest.

⁶ The group as a unit of selection is supported by some, however it does not seem to have the appropriate fecundity and thus the gene is left as the only appropriate unit of selection at this time. See Martin 2008 and Wilson 2002.

Prospect theory posits an asymmetrical relationship between decisions that could result in a potential gain or a potential loss. A multitude of studies have shown that when given different choices humans display risk aversion, even at the expense of rationality; however, this decision making process can be predictable irrational (Ariely 2010). This violates the assumption that humans make decisions based on rational thought processes (whether conscious or unconscious). In an effort to understand why an individual would rebel against the status quo, Masters (2004) employed prospect theory rather than rational choice theory to show that the understanding of one's current situation as worse than a "normal past" (Berejikan 1992) can motivate action against a status quo. This research was qualified with interviews of people living in Palestine and Northern Ireland; areas which both currently have active dissident terrorist organizations fighting over territory. Masters (2004) also noted that while the understanding of the status quo was important to these individuals and that their identity was consistently linked to their respective fictive kin groups, territory was an imperative variable in the construction of their identity. Similar interpretations have been offered by Scott Atran (2006) when questioning the rationality of suicide terrorism.

By adopting an updated cognitive model for human decision making, one of the most complex and controversial subjects among scholars of religion becomes more transparent and even quantifiable. This also allows for further progression by employing evolutionary imperatives known since Darwin as explanatory variables in human action. This is not to say that the previous rational actor theories of scholars such as Stark and Bainbridge are useless. On the contrary, Bainbridge has shown the power of their theoretical model to describe and simulate sociological level trends using multi-agent artificial intelligence programs. However, if the approach to terrorist groups and their constituents is intended to explain rather than describe, it must be based off of causal variables rather than *post hoc* statistical models.⁷ By employing what we already know, we have a very weak simulation of what has already happened. However, by isolating the variables that have given rise to specific behaviors and understanding the mechanistic workings of the cognitive processes and their interaction with their environment a more predictive model can be constructed.

Conclusion: Bringing it together

Pascal Boyer has stated that research programmes should concentrate on those issues that are socially pressing (Boyer Unpublished Manuscript). There are very few issues that are more prevalent in the social sphere of the western world than terrorism. Here, an overview of some of Al-Qaeda's major ideological tenants have been outlined and it has been defended that it is more fruitful to look at these religious justifications not as motivational factors but *post hoc* rationalizations

⁷ In a top-down model of agent interaction, if any variable in a simulated model changes in the real world, than the model will be inherently flawed because it can only operate with the descriptive rules that have been discerned. However if the model is based off of a bottom up causal relationship between dynamic variables, than changes in the simulated "environment" would be statistically closer to the behavior likely to be instantiated in the environment. This calls for the programming of emergent behaviors among multi-agent systems similar to those noted by Wolfram (2002) and others involved in complex and chaotic systems theory.

using religiously and culturally laden terms. In order to look at the causal factors of human decisions, even the decisions of those who are engaged in what has been called a “holy war” by both sides (Lincoln 2006), we have to look at the human mind—the originator of human decision making.

When viewed in a scientific-rather than metaphysical-light, the brain/mind evolved as a biological organ in order to negotiate environmental problems through evolutionary history. While the human environment has changed significantly with the advent of modern technologies, we still exist in a biosphere with similar selective pressures such as reproduction and survival by means of resource allocation and predation avoidance. Admittedly, cultural systems are complex and our mind has invented systems and technologies that seem far beyond the scope of biological survival but the inventions of our modern era are largely the production of our evolved minds and function to solve social matters in our environment. From this perspective, when analysing the human phenomena of religious behavior, it is important to keep in mind both the individual psychology admired by William James (2008) as well as man’s social nature, noted by Emile Durkheim (1915). Many may note that a study interested in groups and individuals faces a mereological⁸ problem. However, the concept of “evoked culture” (Cosmides – Tooby 1992) allows for the mind to work within an environment taking into account both the material environment such as territory and resources as well as the social environment from a psychological perspective.

In the contemporary Middle East, most countries participate in the exportation of oil to the United States and Europe. The parties involved have been in mutual cooperation more often than not and are willing to use force to control their resources. Even in the “Arab Spring” currently occurring in the Middle East, where people are demonstrating with such force that they have toppled regimes in at least four countries, states such as Saudi Arabia, Bahrain, and Libya (all oil based economies) are willing to counter popular revolutions in order to maintain the flow of resources as they see fit in and out of the countries. The control of oil, the most valuable resource in the global economy, is central to Al-Qaeda’s ideology (World Islamic Front 1998) and if Al-Qaeda or its affiliates were to control this resource, it would represent a gain for the group, by not trying to take control of the resource, it represents a failure of the *umma* to achieve the previous glory of the Caliphate. It was previously shown that the in-group (*umma*) is invoking the previous glory of Islamic political control by referencing the caliphate (Hellmich 2005) in order to show that the *umma* is currently less powerful that it was and less powerful that it could be if the status quo is to be challenged. Furthermore, this debate is framed in light of territorial markers important to the Sunni groups (i.e. the oil-rich nations of the Arabian Peninsula) rather than the territorial disputes of paramount importance to Shi’a groups (most notably the Israeli occupation of Palestine).

Not only are the contexts at hand age-old evolutionary struggles between groups, the agents perpetuating this *jihad*, being primarily male, also fall in line with evolutionary expectations. While there has been extensive work done on male violence from a sociological perspective, primatologists such as Wrangham

⁸ Mereology is the study of the relationship between constituent parts and the entities they construct.

– Peterson (1996) have consistently shown that our closest evolutionary relatives band together in small *ad hoc* groups in order to raid those groups in close competition resulting in male dominated warfare. This shows that the evolutionary pressures may have changed in physical form, but the navigation of our environment, however novel, still relies on evolutionary patterns that are engrained upon us through natural selection.

Previous researchers have also noted many similar patterns amongst human groups in reference to actions and religion. For example, in their seminal text on the cognitive foundations of religious action Lawson and McCauley (1993) outlined a theoretical model with which any ritual act can be analysed. What makes these actions unique is the content of their actions as provided by the general religious schema (i.e. ideology, culture, theology, etc.). The line of research presented here has presented some of the most prominent aspects of the schema in operation for Al-Qaeda and its affiliate groups. Moving forward, the types of religious actions and their dynamics within their respective social structures must be catalogued and analysed under a similar lens⁹, without which a fully embodied understanding of the evolutionary and socio-cognitive mechanisms at play will not be sufficiently explained.

Works Cited

- Ariely, D.** 2010. Predictably irrational: The hidden forces that shape our decisions. New York: Harper Perennial.
- Aronson, E.** 2008. *The Social Animal* (10th Edition). New York: Worth Publishers.
- Atran, S.** 2002. In gods we trust: the evolutionary landscape of religion. Oxford New York: Oxford University Press.
- Atran, S.** 2003. "Genesis of suicide terrorism". *Science*, 299(1534). Available to online access at: <www.sciencemag.org>; [Accessed on April 23, 2011].
- Atran, S.** 2004. "Suicide Terrorism Database, 2004." Available to online access at: <http://www.sitemaker.umich.edu/satran/files/suicide_terrorism_database_2004.xls>; [Accessed on April 23, 2011].
- Atran, S.** 2006. "The moral logic and growth of suicide terrorism". *The Washington Quarterly*, 29(2), 127–147.
- Atran, S.** 2010. Talking to the enemy : faith, brotherhood, and the (un)making of terrorists. New York, NY: Ecco Press.
- Bainbridge, W.** 2006. God from the machine : Artificial intelligence models of religious cognition. Lanham, MD: AltaMira Press.
- Baker, P. – Cooper, H. – Mazzetti, M.** 2011. "Obama Says Bin Laden Killed in Operation Inside Pakistan". *New York Times*, p. A1. Available to online access at: <http://www.nytimes.com/2011/05/02/world/asia/osama-bin-laden-is-killed.html?hp?src=ISMR_AP_LI_LST_FB#>; [Accessed on May 1, 2011].
- Bergeson, A. J.** 2008. "Sayyid Qutb in historical context". In Bergesen, A.J. (Ed.) *The Sayyid Qutb Reader*. New York: Routledge.
- Berejikian, J.** 1992. "Revolutionary collective action and the agent-structure problem". *American Political Science Review*, 86, 647–657.
- Bonney, R.** 2004. *Jihād: From Qur'an to bin Lāden*. New York: Palgrave Macmillan.
- Boyer, P.** 2001. Religion explained : The evolutionary origins of religious thought. New York: Basic Books.

⁹ Social structure being a dynamic property of a group with different pros and cons depending on size, necessity, and context. (See *Brafman – Beckstrom 2006*)

- Boyer, P.** (Unpublished Manuscript). "Ten problems in search of a research programme: Towards integrated naturalistic explanations of human culture". *Draft version 3*.
- Brafman, O. – Beckstrom, R.A.** 2006. *The starfish and the spider: The unstoppable power of leaderless organizations*. New York: Portfolio.
- Buss, D. – Haselton, M.G. – Shakelford, T.K. – Bleske, A.L. – Wakefield, J.C.** 1998. "Adaptations, exaptations, and spandrels". *American Psychologist*, 53(5), 533–548.
- Cosmides, L. – Tooby, J.** 1992. "Cognitive adaptations for social exchange". In Barkow, J., Cosmides, L – Tooby, J. (Eds.). *The Adapted Mind: Evolutionary Psychology and the Generation of Culture*. New York: Oxford University Press.
- Crenshaw, M.** 2000. "The psychology of terrorism: An agenda for the 21st century". *Political Psychology*, 21(2), 405–420.
- Dennett, D.** 2007. *Breaking the spell: Religion as a natural phenomenon*. New York: Penguin Books.
- Durkheim, E.** 1915. *The elementary forms of the religious life*. J.W. Swain (translator). New York and London: Macmillan Publishing Co., Inc.
- Gilovich, T. – Griffin, D. – Kahneman, D.** 2002. *Heuristics and biases: The psychology of intuitive judgement*. Cambridge, U.K. New York: Cambridge University Press.
- Hamilton, W.D.** 1964. "The genetical evolution of social behavior". *Journal of Theoretical Biology*, 7, 1–52.
- Hellmich, C.** 2005. "Al-Qaeda: Terrorists, hypocrites, fundamentalists? The view from within." *Third World Quarterly*, 26(1), 39–54.
- Hobbs, J. J.** 2005. "The Geographical Dimensions of Al-Qa'ida Rhetoric". *Geographical Review*, 95(3), 301–327.
- Iannaccone, L. – Berman, E.** 2006. "Religious extremism: The good, the bad, and the deadly." *Public Choice*, 128(1), 109–129.
- Iannaccone, L. – Makowsky, M. D.** 2007. "Accidental Atheists? Agent-Based Explanations for the Persistence of Religious Regionalism." *Journal for the Scientific Study of Religion*, 46(1), 1–16.
- James, W.** 2008. *The varieties of religious experience: A study in human nature*. United States: Megalodon Entertainment.
- Juergensmeyer, M.** 2000. *Terror in the Mind of God: The Global Rise of Religious Violence*. London: University of California Press.
- Kahneman, D. – Slovic, P., – Tversky, A.** 1982. *Judgment under uncertainty: Heuristics and biases*. Cambridge New York: Cambridge University Press.
- Kahneman, D. – Tversky, A.** 2000. *Choices, values, and frames*. New York Cambridge, UK: Russell Sage Foundation Cambridge University Press.
- Lawson, E. T.** 1993. *Rethinking religion: Connecting cognition and culture*. Cambridge, England and New York: Cambridge University Press.
- Layish, A.** 1987. "Saudi Arabian Legal Reform as a Mechanism to Moderate Wahhābī Doctrine." *Journal of the American Oriental Society*, 107(2), 279–292.
- Lewis-Williams, D.** 2004. *The mind in the cave: Consciousness and the origins of art*. London: Thames – Hudson.
- Lincoln, B.** 2006. *Holy terrors: Thinking about religion after September 11*. Chicago: University of Chicago Press.
- Martin, L.** 2008. "Can religion really evolve? (And what is it anyway?)". In Bulbulia, J. – Sosis, R. (eds.), *The Evolution of Religion: Studies, Theories, and Critiques*. Collins Foundation Press: Santa Margarita, California. 375–381.
- Masters, D.** 2004. "Support and Non-support for Nationalist Rebellion: A Prospect Theory Approach". *Political Psychology*, 25(5), 703–726.
- Paden, W. E.** 2009. "Connecting with evolutionary models: New patterns in comparative religion?". In Braun, W. – McCutcheon, R. (eds.) *Introducing Religion: Essays in Honor of J. Z. Smith*. London: Equinox Publishing Ltd.

- Pape, R. A.** 2003. "The strategic logic of suicide terrorism". *The American Political Science Review*, 97(3), 343–361.
- Post, J. M.** 2005. "When Hatred Is Bred in the Bone: Psycho-Cultural Foundations of Contemporary Terrorism". *Political Psychology*, 26(4), 615–636.
- Rabasa, A.** 2007. "History of Al-Qaeda". Lecture given at the International Spy Museum. February 13, 2007.
- Rabasa, A. – Chalk, P. – Cragin, K. – Daly, S. A. – Gregg, H. S. – Karasik, T. W. – O'Brien, K. A. – Rosenau, W.** 2006. *Beyond Al-Qaeda Part 1 The Global Jihadist Movement*. RAND Corporation document prepared for the United States Air Force. Available to online access at: <<http://www.rand.org>>; [Accessed on May 1, 2011].
- Shepard, W. E.** 2003. "Sayyid Qutb's Doctrine of 'Jāhiliyya'". *International Journal of Middle East Studies*, 35(4), 521–545.
- Sivan, E.** 1989. "Sunni Radicalism in the Middle East and the Iranian Revolution". *International Journal of Middle East Studies*, 21(1), 1–30.
- Smith, J. Z.** 1988. *Imagining religion: From Babylon to Jonestown*. Chicago and London: The University of Chicago Press.
- Sommerville, Q.** 2011. "Afghan pilot kills eight Nato soldiers at Kabul airport". In *BBC News*. Available to online access on: <<http://www.bbc.co.uk/news/world-south-asia-13206560>>; [Accessed on April 27, 2011].
- Sperber, D. – Hirschfeld, L. A.** 2004. "The cognitive foundations of cultural stability and diversity". *TRENDS in Cognitive Sciences*, 8(1), 40–47.
- Stark, R. – Bainbridge, W. S.** 1987. *A theory of religion*. New Brunswick, N.J: Rutgers University Press (1996 edition).
- Stark, R. – Bainbridge, W.S.** 1996. *Religion, deviance, and social control*. New York: Routledge.
- Stark, R. – Finke, R.** 2000. *Acts of faith : explaining the human side of religion*. Berkeley: University of California Press.
- Tamimi, A.** 2009. "The Islamic Debate over Self-inflicted Martyrdom". In Al-Rasheed, M. – Shterin, M. (eds.), *Dying for Faith*. London: I. B. Tauris.
- Todd, P.M. – Gigerenzer, G.** 2007. "Mechanisms of ecological validity: Heuristics and environments that make us smart". In Dunbar, R.I.M. – Barrett, L. (eds.) *The Oxford handbook of evolutionary psychology*. Oxford: Oxford University Press. Chapter 15 p. 197–210.
- Tooby, J. – Cosmides, L.** 2005. "Conceptual foundations of evolutionary psychology". In Buss, D. M. (ed.), *The Handbook of Evolutionary Psychology*. 5–67.
- Tremlin, T.** 2010. *Minds and gods: The cognitive foundations of religion*. Oxford: Oxford University Press.
- Weber, M.** 1930. *The Protestant ethic and the spirit of capitalism*. Chicago, Ill. and London: Fitzroy Dearborn. 2001 edition translated and edited by Stephen Kalberg.
- Wilson, D.** 2002. *Darwin's cathedral: Evolution, religion, and the nature of society*. Chicago: University of Chicago Press.
- Wrangham, R. – D. Peterson.** 1996. *Demonic Males: Apes and the Origins of Human Violence*. London: Bloomsbury Publishing Plc.
- Wolfram, S.** 2002. *A new kind of science*. Champaign, IL: Wolfram Media.
- Wrangham, R. – Peterson, D.** 1996. *Demonic Males: Apes and the Origins of Human Violence*. London: Bloomsbury Publishing Plc.
- World Islamic Front.** 1998. "Jihad Against Jews and Crusaders." *Statement*, 23 February.