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Al Qaeda: Corporate hierarchy or biological entity?



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Abstract

A great deal of study has been devoted to network-centric organizations in society, and terrorism is no exception. This article explores Al Qaeda's organizational structure and tries to deduce its most likely shape based on three choices: hierarchy, network, and chaotic. While there are supporting arguments for all three structures, there is a promising research with regards to viewing Al Qaeda as a dynamic and chaotic organization that has little, if any, formal structure. This may be the most exciting development presented in this paper, and begs to ask the question, "How does one target an entity with independent nodes and no formal structure?"

Since the September 11 attacks, terrorism has been a constant focus of the media and governments around the world. To successfully defeat terrorist organizations, however, it is important to know how they operate. By scrutinizing the leadership, accountability, and decision making processes of organizations like Al Qaeda, it may be possible to fight the organization effectively, as fighting a foe without proper knowledge of the way it operates and works is inefficient and unlikely to succeed. The most pertinent question to fighting Al Qaeda deals with learning about how its structure allows for the flow of authority, accountability, and power between cells and groups within the organization. There are three schools of thought pertaining to the Al Qaeda terrorist structure: hierarchical, network, and dynamic paradigms. Network paradigms currently show the most promise in learning about Al Qaeda's structure due to social network analysis models and the organization's resiliency. However, viewing Al Qaeda as a dynamic system also has merit and warrants more research.

Hierarchical methods of organization are common in legal organizations and allow for

information, accountability, and power to flow vertically, with increasing power and accountability as one climbs the organizational ladder. Poland cites Al Qaeda's ability to organize simultaneous attacks on different locations such as the Pentagon and the World Trade Center during September 11 (105) and Bin Laden's financial support of the entire organization (107) as evidence of a managerial structure influencing cells' goals and targets. The US government, too, supports this view when targeting Osama Bin Laden, Ayman Al-Zawahiri, and other suspected leaders of Al Qaeda, assuming that removing the highest levels of leadership within a top-down organization will automatically make other levels fail.

While there is evidence in support of the hierarchical view, the second, network-centric, paradigm argues such a structure would be impossible after September 11 and the increased offensive against the organization (McAllister 297). There is a wide variety of network types, and according to scientists like Barabási, Al Qaeda resembles a scale-free network, where each node has a different number of connections (223). This type of structure allows for Al Qaeda to develop hubs and nodes with disproportionately large numbers of connections. Such areas of the network are the equivalent of leaders within hierarchical organizations, as they have the ability of passing information and decisions to large parts of the network. Mathematical and social network analysis also shows that individuals with the most connections have the most power within networks (Krebs, "InFlow – Mapping and Measuring Social Networks – Social Cartography").

Regardless of the type, networks act as extremely efficient resource distributors between nodes (Wellman and Berkowitz 445), giving clues as to why the organization has not faltered after authorities have frozen bank accounts and deactivated terrorist cells working for the organization. Networks are resilient and able to respond to external events quickly. This type of structure is what allows Al Qaeda to survive and continue to be a threat even when faced with opposition, such as the removal of major hubs and support centers like those that existed in

Afghanistan. Network studies have shown that to defeat a scale-free network, one must immobilize up to fifteen percent of all hubs within the network (Barabási 118) and states have been unsuccessful in doing so with Al Qaeda.

With such a sparse and fragmented organizational structure, one is forced to ask how Al Qaeda can operate so coherently. Researchers have explained the organization's ability to run so effectively by pointing to Al Qaeda's strict adherence to Islamic extremist ideologues like Sayyid Qutb (Zimmerman 240) as well as its conformance to Islam itself – the constant references to Jihad and strict guidelines for Muslims outlined in its training manual all facilitate the setting of similar goals between cells. Its anti-Western ideals (Halliday 217) are static and unchanging, facilitating the assimilation of new terrorist cells within the rest of the organization. Some argue that Bin Laden is an ideologue (Raufer 396) instead of a conventional leader; rather than giving orders, he acts as a spiritual guide for the organization.

The models of authority and leadership within networks do not work as one would expect in classical hierarchical organizations. More information can be gathered from neural networks; computational tools that have been used for decades in computer science and whose science is more advanced than the study of social networks. Within neural networks, it is possible to have unidirectional flow of information between nodes, and the nodes carrying this information can modify it through the use of mathematical equations (Davallo and Naïm 31). A similar approach can be taking place within Al Qaeda: the ability to allow information to flow one way and to have cells consider certain sources of information more reliable than others can further our understanding of the organization.

A networked organizational structure creates leaders out of those who have the most connections between cells, or who may act as brokers between hubs. As the central figure within Al Qaeda, in terms of ideology and being founder of the organization, it is safe to assume Bin

Laden has a large number of linkages between cells and other hubs. This allows him to have power within the organization, and makes him able to make influential decisions.

However, researchers have theorized that Bin Laden's riches are what fund the organization (Poland 107) and if this is true, it adds an element of hierarchy into the organization, as it makes it dependent on Bin Laden to function. A second rebuttal, that Al Qaeda must have a hierarchy to commit spontaneous attacks, can be dispelled through the use of cliques – groups of nodes with incredibly close and well-developed connections within the network. In such cases, cells are thoroughly interconnected, allowing them to work together without having power over each other or answering to a higher authority. This can lead to intricate plans in much the same way that students can brainstorm and work in study groups to eventually work on projects for school.

Finally, the dynamic paradigm explains Al Qaeda as a dynamic entity whose terrorist cells work autonomously, with few connections, indirectly working together to achieve an overarching goal. This view gets its support from researchers who believe network-centric organizations, while resilient, are not dynamic enough to explain Al Qaeda (Carley 2). Some have compared the organization to a biological entity: “Islamic cells appear like mushrooms after rain. They grow on the same ground. Their roots are mingled underground. All these mushrooms look more or less the same” (Raufer 395). All the cells act autonomously, rarely integrating one another's' actions and not answering to a higher authority, making them resilient and allowing them to mimic evolution through individual responses to external events like military crackdowns, eventually allowing only the most effective cells to survive.

Like in networked organizations, ideology is of the utmost importance for maintaining coherence within dynamic systems. Due to a lack of authority outside cells, the only way cells can act in unison is by following strong ideologies. Dynamic systems take network-centric dependence on Islamic fundamentalism and extremism a step further. Supporters of this view

argue that by acting as an ideologue and focusing on people's religious beliefs, Bin Laden is able to convince those frustrated with the West to vent their fury by creating *their own* cells and starting *personal* Jihads (Raufer 394) that fall in line with Al Qaeda's own goals.

The dynamic paradigm mitigates the effects of what may be the biggest problem in terms of analyzing Al Qaeda using a network-centric view: the lack of transparency and information available about the network. No one can be sure about the strength of connections between nodes or how money is funneled. The dynamic paradigm states that links between cells are not important. Cells influence each other but are ultimately independent, only bound together by common goals and ideologies. The Al Qaeda training manual gives credence to this outlook by outlining how cells must train new recruits by ensuring they, and those training them, do not know each others' identities. This implies that direct connections between people and cells tend to be temporary and surface only when needed. Such a structure is only possible within dynamic systems, as networks tend to retain their connections over time (Carley 2).

Of the three paradigms listed above, the view that Al Qaeda is a network-centric organization bears the most merit both in explaining authority structures within the organization, as well as directing the War on Terror. Hierarchical structural models could have been applicable prior to September 11, but the West's increased fight for the eradication of the organization has forced it to modify and become resilient. Such a hierarchical organization would not be able to survive the removal of millions of dollars from its financial reserves, and political support from regimes like the Taliban. Al Qaeda as a network-centric organization, with power and authority flowing based on one's position within the network, is presently the most credible outlook and holds most promise for winning the War on Terror, as its resiliency and adaptability can explain its survival within the post September 11 world. Ideology plays a crucial role within this network, ensuring that different nodes adhere to standard principles and guidelines.

However, restructuring a transnational organization is difficult, and it is possible that Al Qaeda is still evolving from a previously hierarchical structure into a dynamic one. Doing so would not be a short process, and it may be that the current evidence pointing to a network-centric organization is just a sign of the reorganizational process. A dynamic organizational form would be beneficial to Al Qaeda, as it would render it virtually invincible to conventional counter-terrorist operations currently being employed in the War on Terror. Unfortunately, nonlinear dynamics, complexity, and other sciences exploring dynamic systems within political science and terrorism studies are not developed and more research, both in terms of theoretical science and their applications to terrorism, and in terms of intelligence gathering on Al Qaeda, is required to adequately judge this paradigm.

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