

## Harnessing the Human Domain in Warfare

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### Introduction

The last 12 years of sustained combat operations between Operation ENDURING FREEDOM and Operation IRAQI FREEDOM have demonstrated the need for considering human factors and their effects on a strategy. In both theatres, the United States and its allies have blended counterinsurgency and counterterrorism approaches, with successes and shortcomings. The common denominators have been people and culture. Anticipating such human factors in war and strategy is nothing new. Clausewitz defines war as “an act of force to compel our enemy to do our will.”<sup>1</sup> War is a battle for influence, sometimes by physical force. The human domain has been and will continue to be a complex yet critical aspect in warfighting. Success in future and uncertain operating environments will be determined by how well we are able to understand, influence, and, in some cases, counter a movement before it escalates to direct combat actions.

As the military reflects back on the Iraqi conflict and begins to draw down from Afghanistan, it is imperative to consider the main lesson of these conflicts—the importance of understanding people. This essay is divided into three sections. First, it will identify an analytical process to understand human interactions better and highlight the concept of centrality. The role of Egyptian women will be used to validate this concept as will the use of social media during the 2011 Arab Spring. Second, the essay will introduce recently developed software programs currently being used in the military that have proven helpful in visualizing the human terrain. Finally, this essay will identify military-specific initiatives that address the human domain. The overall intent is not to provide a solution to dominate within the human domain, but rather describe a framework to understand and influence, in what Rupert Smith coined “war amongst the people.”<sup>2</sup>

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\*Note: The views expressed in this essay are entirely those of the author and do not necessarily reflect the views, policy or position of the United States Government, Department of Defense, United States Special Operations Command, or the Joint Special Operations University.

## **Social Network Analysis**

Social movements develop out of the need to address grievances and occur within a social or familial circle. Social network analysis (SNA) is a useful tool to identify these interactions and assess which actors are most important or influential within a group. Often mistaken for link analysis, both are similar analytical tools but differ in approach.<sup>3</sup> Link analysis, a tool common with military analysts, compares two different actors (people to objects) whereas SNA compares similar actors (people to people) and can provide more qualitative information on their relationships.

## **The Concept of Centrality**

Central actors within a network who possess a higher degree of interaction with other members enjoy many advantages, such as access to information and resources.<sup>4</sup> Subsequently, they become very influential in a network. There are four different types of centrality: *Degree* centrality is how many ties an actor has within a network; *Closeness* centrality is how close an actor is to all the other actors; *Betweenness* centrality indicates the shortest distance between actors or groups; and *Eigenvector* centrality measures the amount of ties to more central actors.

## **Egyptian Women Example**

An example of its utility in determining influence within a social network is the role of Egyptian women in their informal financial system. Historically, women did not hold any positions in the Egyptian government.<sup>5</sup> However, they have always held a tremendous amount of authority within the *Sha'b*, a socioeconomic group of people that “remain tied to indigenous culture, social norms, and patterns of life.”<sup>6</sup> This term is used to describe a lower class of people. Based on this class difference, this group forms a tight bond and develops its own concept, which Dr. Diane Singerman calls the familial ethos.<sup>7</sup> This idea centers on maintaining the integrity of the family with the onus often falling on the women as the males struggle to court, marry, and provide for a spouse due to financial disparity across the country. The networking of women of the *Sha'b* helps close this financial gap by establishing an informal banking system.<sup>8</sup> This system serves two purposes: first, it maintains the integrity of their families; and, second, it adds more central actors to their network. Herein lies the importance of understanding a social network and the influence, or centrality, of women in some cultures. This example also demonstrates that social networks can serve as an informal system of government.

## **Social Media and the Egyptian Revolution**

Social interactions are vital to all humans, with current research suggesting that positive social relationships and interactions can increase life span by up to 50 percent.<sup>9</sup> Social networking tools such as Facebook or Twitter aim to build “social networks or social relations among people with shared interests and/or activities.”<sup>10</sup> Social media fulfills this innate need for interaction in a timely and simple manner, which was vital during events in Egypt in 2011.

In comparing the 100 days taken to overthrow the Shah in the 1979 Iranian Revolution to the 18 days the Egyptian Revolution ousted Hosni Mubarak, the increased speed of the latter was due to social media catalyzing the revolution.<sup>11</sup> Egyptian demographics and social media popularity are two factors that contributed to the speed of the Egyptian revolution. The demography consists of a disproportionate growth in the number of individuals less than 30 years of age as depicted in Figure 2, which is expected to be seen in Egypt over the next several decades.<sup>12</sup> The second factor is the popularity of social media in Egypt within this demographic. Nearly 78 percent of Facebook users were under the age of 30.<sup>13</sup> The combination of these two factors was a recipe for timely mobilization and messaging.

Social grievances have always been part of Egyptian society but social media allowed those grievances to be voiced quickly and to an influential demographic. Jon Alterman provides a great metaphor to explain the speed by which media is used to accelerate a movement.<sup>14</sup> He notes that the four elements needed for a campfire are: a spark which creates a flash; tinder, which turns the spark into a flame; kindling, which grows the flame; and fuel logs, which increase the life of the campfire. In comparison, social media was not the spark of the revolution, but instead acted as both the tinder and kindling to mobilize the high number of Egyptians in Tahir Square. In the end, however, the revolutionaries failed to emplace a structure for enduring change—in essence, they could not provide the logs to fuel sustainment. Just as SNA is not a silver bullet for combating illicit networks, social media is not a means for revolution, but instead a critical component of social interaction that can be exploited to help map out the human terrain.

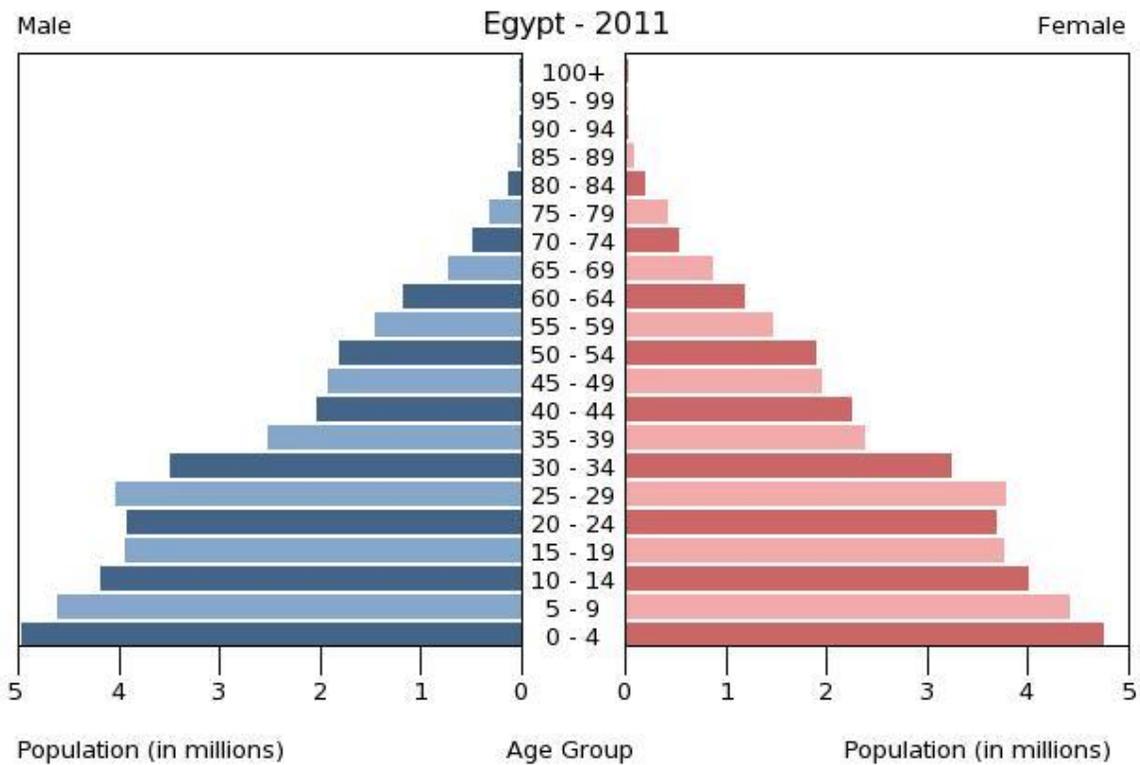


Figure 2. Egypt population pyramid. Source: United States Census Bureau, International Programs, 2011.

### Mapping the Human Terrain

This section will introduce two software tools that have been developed to specifically assist military forces in mapping out the human terrain. Both of these programs were developed at the Common Operational Research Environment (CORE) lab, located at the Naval Postgraduate School (NPS) in Monterey, California. The CORE lab is focused on supporting the education of both U.S. and foreign military officers in information technology that could be used to “understand and analyze network-based adversaries.”<sup>15</sup> It provides a bottom-up approach for military officers to apply information from their parent organizations or countries to conduct real world analyses.<sup>16</sup> Upon completing their coursework, officers return to the field with the means to not only understand or influence the human domain with this emerging technology, but how to operate within it as well.

## **Dynamic Twitter Network Analysis**

Just as a topographic map depicts the terrain in an area of operations, the programs developed at the CORE lab—Dynamic Twitter Network Analysis (DTNA) and Lighthouse—take information that is gleaned from social network mediums and provide a map of the human terrain.<sup>17</sup> As Twitter has become a popular social media application, the CORE lab has begun using the Application Programming Interface (API)<sup>18</sup> to sift through its keywords or phrase and generate a visual network analysis in real time.<sup>19</sup> Subsequently, DTNA can provide the user with sentiment analysis based on the information pulled from the Twitter API. Three units within the Department of Defense are testing this program to better assess sentiment in an unnamed location.<sup>20</sup> If used correctly, this program could prove valuable in thwarting attacks on U.S. interests in a specific region. DTNA can also apply Twitter's hashtags and key phrases to a mapping feature as seen in the following project conducted at the CORE lab.

### **Application of DTNA**

Army Major Seth Lucente, a military intelligence officer and student at the CORE lab, analyzed social media in the Syria conflict.<sup>21</sup> Using DTNA, he pulled information from several social media mediums to identify the Assad regime's movements in combating protests and protecting facilities. The under-resourced rebel force was itself using social media to coordinate movement and provide situational awareness including battle damage assessment. Figure 3<sup>22</sup> provides a snapshot of the information gleaned from Major Lucente's analysis, which depicts locations of bombings in the form of green pins while blue pins show the locations of protests. Syrian government attacks are shown in the form of red pins to include embedded videos of battle damage assessment from Syrian airstrikes. Additional sentiment analysis provided the name of a rebel group that was used to protect these sites in the event of a government collapse. This project proved extremely useful in mapping out the human terrain and took only two months. By comparison, conventional means would have taken longer and required more analysts.



Figure 3. "Syria—11 June 2012." Source: Google Maps.

## Lighthouse

The second software, developed by two students, U.S. Marine Corps Captain Carrick Longley and U.S. Army Special Forces Warrant Officer 3 Chad Machiela, is Lighthouse. This Android-based program collects demographic information and produces a geospatial social network map that depicts links between individuals.<sup>23</sup> Like DTNA, this program has been validated in both humanitarian relief efforts and combat operations.<sup>24</sup> For example, Lighthouse was used in a medical action project by the Marines prior to the start of the 2012 Cobra Gold Exercise in Thailand to determine patient demographics and distance traveled to the medical site.<sup>25</sup> In the future, this information can provide commanders and humanitarian relief experts the ability to measure effectiveness of relief operations and allocate priorities as necessary.

## Application of Lighthouse

In 2010, a Special Forces Operational Detachment Alpha (ODA) team in southern Afghanistan successfully applied the Lighthouse program to their Village Stability Operations (VSO) to help identify tribal alignment.<sup>26</sup> At the time, the ODA was located in the Khakrez district and began collecting data on a few hundred villagers to establish a social network map.<sup>27</sup> Within three weeks, the ODA was able to pinpoint a Taliban sympathizer with high centrality in the village who was unreceptive to plans of marginalizing Taliban influence. Subsequently, the ODA reduced his influence.<sup>28</sup> Like

the Syria project, the program took less time than conventional means, and it provides another example of integrating technology with SNA concepts to generate a non-kinetic targeting.

These examples demonstrate that social media and other information integrated with these programs provide a large pool of widely accessible data that can be used to map the human terrain and assess sentiment in order to apply an appropriate approach to a problem. More importantly, this information can be readily accessible as a means for SOF conducting preparation of the environment.<sup>29</sup> Doing so would inform policy makers and operators on the ground which group is aligned with U.S. interest before setting foot in a country. These programs are limited specifically to areas of the world with reduced bandwidth or where a host nation has blocked internet access. Keeping in mind the fast-moving nature of technology, these tools will be difficult to formalize and will require commanders to understand their value and effectively employ them. Doctrine will also need to catch up and codify the application of these tools and establish a framework within which they might be applied.

### **The Military and the Human Domain**

The Army and Marine Corps have agreed on the definition set forth by United States Special Operations Command (USSOCOM) as “the totality of the physical, cultural, psychological, and social environments that influence human behavior to the extent that the success of any military operation or campaign depends on the application of unique capabilities that are designed to influence, fight, and win in the population-centric conflicts.”<sup>30</sup> This effort to define the human domain was the result of similar experiences of the Army, Marines, and USSOCOM operations in Afghanistan and Iraq. Although these institutions provide three distinct purposes for defense, they share a common operating space—land—and, therefore, people. With this commonality, the two service chiefs and USSOCOM commander collectively signed and published a white paper entitled *Strategic Landpower: Winning the Clash of Wills*, establishing the Strategic Landpower Task Force.<sup>31</sup> This task force will assist in capturing the lessons of last 12 years and provide a DOTMLPF-P<sup>32</sup> framework for building a future force. Of the three members, the Army was the first to introduce the concept of the human domain into doctrine.

### **Army Approach**

Mindful of fiscal constraints and global uncertainty, the Army announced 24 specific concerns it anticipates in 2014.<sup>33</sup> Of those, one relates to doctrine focused on the human domain and another to regional alignment. The first will add a seventh warfighting

function<sup>34</sup> within Army doctrine. To introduce this warfighting function, the Army's Training and Doctrine Command recently published TRADOC Pamphlet 525-8-4 entitled *The U.S. Army Functional Concept for Engagement*. This publication addresses four imperatives of the future Army force: both Army and partnered forces' capabilities will need to be leveraged in future operations; influence in a country or region will require an understanding of human factors by Army forces; the methodology of "by, with and through" will facilitate host nation capabilities; and support to the joint force commander will require Army conventional and special operations forces (SOF) to work in concert with one another.<sup>35</sup>

The second effort is regional alignment. With the exception of the 82d Airborne Division, which will remain as the Global Response Force, divisions will deploy brigades to each geographic combatant commander's (GCC) area of responsibility on a rotational basis. This will provide the means to build partner capacity while simultaneously posture for securing national interests abroad. One challenge is size. Employing a large unit counters strategic guidance of maintaining "small-footprint approaches."<sup>36</sup> More importantly, conventional units do not have the necessary language and cultural skills and are fiscally constrained, making prioritization of training and funding critical for success. Doctrinal changes and growing requisite capabilities will take time; therefore, USSOCOM units are best suited to maintain the lead in the human domain as it relates to warfighting.

### **SOF in the Lead**

U.S. SOF units are deployed in over 75 countries to participate in a wide range of operations, from advising foreign partners to combating violent extremist organizations and other sensitive operations. These units' language capabilities, cultural training, and advanced skills far surpass the capabilities of conventional forces. The U. S. Army Special Forces Command has five active duty Special Forces Groups that are geographically aligned to the GCCs.<sup>37</sup> These operators are provided extensive educational opportunities throughout their career to help ensure their success in core activities and operations relevant to the human terrain, including counterterrorism, foreign internal defense, and unconventional warfare (UW). In essence, UW is counterinsurgency in reverse, and thus is inherently tied to operating with indigenous people. An example is the U.S. involvement in assisting, training, and advising the Afghan Mujahedeen during the Afghan-Soviet War of the 1980s. The degree to which social movements, revolutions, and UW intersect—illustrated in Figure 4—has been captured in SOF curriculum and publications. This understanding underscores SOF's focus on the human domain.

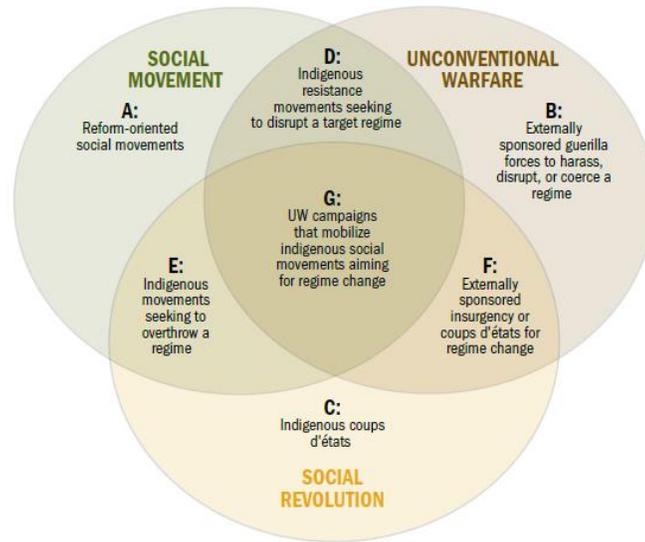


Figure 4. Social Revolution, Social Movement, and Unconventional Warfare. Source: Doowan Lee, “A Social Movement Approach to Unconventional Warfare,” *Special Warfare*, July – September 2013.

## Conclusion

John F. Kennedy’s 1961 inaugural speech provided a glimpse into how warfare changed in the latter part of the 20<sup>th</sup> century. Kennedy described a type of warfare that was, “New in intensity, ancient in its origin—war by guerillas, subversives, insurgents, assassins, war by ambush instead of by combat; by infiltration, instead of aggression, seeking victory by eroding and exhausting the enemy instead of engaging him.”<sup>38</sup> This recognition implied a focus on the human element and continues to resonate today. Social network analysis concepts are a means to understand the complexity of human factors. While the advent of social media is, in military terms, decisive terrain for both insurgent and counterinsurgent, it provides the opportunity for influence. Illicit organizations have taken to this medium to transmit their 12<sup>th</sup> century ideology using 21st century technologies to increase their followers.<sup>39</sup> This essay introduced tools that should be used and incorporated by military planners and interagency organizations alike to counter the spread of this ideology. Although there is no single solution for combating terrorism, the understanding of the human domain and the military’s ability to influence it can prioritize already limited resources as we look toward an uncertain future operating environment.

## Endnotes

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<sup>1</sup> Paret, Peter. "Clausewitz" in *Makers of Modern Strategy: From Machiavelli to the Nuclear Age*, 45. Edited by Peter Paret. Princeton, N.J.: Princeton University Press, 1996.

<sup>2</sup> Smith, Rupert. *The Utility of Force: The Art of War in the Modern World*, 269. New York, NY: Vintage Books, 2005.

<sup>3</sup> Everton, Sean F. *Disrupting Dark Networks*, 6. New York, NY: Cambridge University Press, 2012.

<sup>4</sup> *Ibid.*, 12.

<sup>5</sup> Singerman, Diane. "Where Has All the Power Gone? Women in Politics in Popular Quarters in Cairo," 174, in Fatma Muge Gocek and Shira Balaghi, eds, *Reconstructing Gender in the Middle East*. New York: Columbia University Press, 1994.

<sup>6</sup> *Ibid.*, 174-200.

<sup>7</sup> *Ibid.*, 178.

<sup>8</sup> *Ibid.*, 190.

<sup>9</sup> Holt-Lunstad, Julianne, Timothy B. Smith, and J. B. Layton. "Social Relationships and Mortality Risk: A Meta-analytic Review." *PLOS Medicine* 7, no. 7 (2010):

<http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1000316#s2>

<sup>10</sup> Dubai School of Government. "Facebook Usage: Factors and Analysis." *Arab Social Media Report* 1, no. 2 (JAN 2011): 3.

<sup>11</sup> Alterman, Jon. "The Revolution Will Not Be Tweeted." *The Washington Quarterly* 34, no. 4 (2011): 105.

<sup>12</sup> Laremont, Ricardo R. "Demographics, Economics and Technology: Background to the North African Revolutions." *Journal of the Middle East and Africa* 3, (2012): 10:

<http://www.census.gov/population/international/data/idb/region.php?N=%20Results%20&T=12&A=separate&RT=0&Y=2011&R=-1&C=EG>

<sup>13</sup> Dubai School of Government, "Facebook Usage: Factors and Analysis," 7.

<sup>14</sup> Alterman, "The Revolution Will Not Be Tweeted," 106. This type of metaphor is not unique to Jon Alterman. Mao Tse-tung's book *Chairman Mao Tse-tung on People's War* (1967), also known as "the little red book", uses the phrase "A single spark can start a prairie fire."

<sup>15</sup> The Naval Postgraduate School is an Intermediate Level Education program for military officers to include Special Operations Forces senior Non-Commissioned Officers. For additional information on the CORE program see the Naval Postgraduate School site: <http://www.nps.edu/da/corelab/>

<sup>16</sup> Stewart, Kenneth. "NPS' CORE Lab Rethinks Traditional Intelligence Analysts," 13 September 2012: <http://www.nps.edu/About/News/NPS-CORE-Lab-Rethinks-Traditional-Intelligence-Analysis.html>

<sup>17</sup> *Ibid.*

<sup>18</sup> An API is a set of programming instructions and standards for accessing web-based software. Basically a software company releases its API to the public so that other software developers can design products that are powered by its service. For more information see Dave Roos, *How to Leverage an API for Conferencing*, How Stuff Works, accessed on 20 February 2014:

<http://money.howstuffworks.com/business-communications/how-to-leverage-an-api-for-conferencing1.htm>

<sup>19</sup> Davie, Kerry. "Can the US Military Fight a War with Twitter?" *Computerworld.com*, 8 November 2012: [http://www.computerworld.com/s/article/9233399/Can\\_the\\_US\\_military\\_fight\\_a\\_war\\_with\\_Twitter?taxonomyId=236&pageNumber=1](http://www.computerworld.com/s/article/9233399/Can_the_US_military_fight_a_war_with_Twitter?taxonomyId=236&pageNumber=1)

<sup>20</sup> *Ibid.*

<sup>21</sup> *Ibid.*

<sup>22</sup> Google Map accessed at:

<https://maps.google.com/maps/ms?msa=0&msid=212070240894988529972.0004cdd34638cc2d553e2&hl=en&ie=UTF8&t=h&ll=34.697183,38.479958&spn=4.308843,4.877243&source=embed>

<sup>23</sup> Stewart, "NPS' CORE Lab Rethinks."

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<sup>24</sup> Ibid.

<sup>25</sup> Person, Karen, Staff Sergeant. "U.S. Marines Use "Lighthouse" Application at MEDCAP." III Marine Expeditionary Force Homepage, 8 February 2012:

<http://www.iiimef.marines.mil/News/NewsArticleDisplay/tabid/967/Article/14063/us-marines-use-lighthouse-application-at-medcap.aspx>

<sup>26</sup> Hanlin, Rory. "One Team's Approach to Village Stability Operations." *Small Wars Journal*, 4 September 2011: <http://smallwarsjournal.com/jrnl/art/one-team%E2%80%99s-approach-to-village-stability-operations>

<sup>27</sup> Everton, *Disrupting Dark Networks*, xxvii.

<sup>28</sup> Ibid.

<sup>29</sup> Headquarters, Department of the Army. *ATP 3-05.1, Unconventional Warfare*, 3-1. Washington, D.C: 2013. Preparation of the Environment (PE) is defined in this publication as the umbrella term for activities conducted in foreign countries to shape and prepare an area for potential operations. The skills for these activities resides in USSOCOM.

<sup>30</sup> Roulo, Claudette. "McRaven: Success in Human Domain Fundamental to Special Ops." U.S. Department of Defense, American Foreign Press Service, 5 June 2013.

<http://www.defense.gov/news/newsarticle.aspx?id=120219>

<sup>31</sup> Ibid.

<sup>32</sup> DOTMLPF-P is the DOD acronym that pertains to the eight possible non-material elements involved in solving warfighting capability gaps. The acronym stands for: Doctrine, Organization, Training, Materiel, Leadership, Personnel, Facilities and Policy. For more information see CJCSI 3170.01 Joint Capabilities Integration and Development System.

<sup>33</sup> "24 Issues That Will Shape the Army in 2014." *Army Times*, 2 January 2014. Accessed on 16 January 2014 at: <http://www.armytimes.com/article/20140102/NEWS/301020012/24-issues-will-shape-Army-2014>

<sup>34</sup> Headquarters, Department of the Army. *ADP 3-0, Unified Land Operations*. Washington, D.C.: 2011. A Warfighting Function is defined as "a group of tasks and systems (people, organizations, information, and processes) united by a common purpose that commanders use to accomplish missions."

<sup>35</sup> Headquarters, Department of the Army. *TRADOC Pam 525-8-5, U.S. Army Functional Concept for Engagement*, 6. Fort Eustis, VA: 2014.

<sup>36</sup> Ibid.

<sup>37</sup> Exception to this is U.S. Northern Command (USNORTHCOM). However, USNORTHCOM will establish SOCNORTH in 2015 to serve as its TSOC. For further information see Andrew Feickert's CRS report on US SOF: Background and Issues for Congress, dated September 18, 2013.

<sup>38</sup> The American Presidency Project. "John F. Kennedy: Remarks at West Point to the Graduating Class of the U.S. Military Academy." Accessed at: <http://www.presidency.ucsb.edu/ws/?pid=8695>

<sup>39</sup> Roberts, James Roberts. "Addressing the Zawahirist Outsurgency." *Small Wars Journal*, (3 March 2010). Accessed at: <http://smallwarsjournal.com/jrnl/art/addressing-the-zawahirist-outsurgency>