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Collaborative Heroism: An Empirical Investigation

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ABSTRACT: Interactive technologies have come to define our culture, and as such, they influence and shape our modes of perception and behavior. This empirical investigation explored the public's perception of the impact of the Internet on heroism via assessment of a sample population through a process of item generation, sampling, and principal component analysis. A robust 5-component structure emerged with consensus among participants including: 1) Collaboration expands heroic potential; 2) Internet technology expands heroic potential; 3) Heroes are motivated to protect and serve; 4) Heroes are responsive to injustice; 5) Concern for others is a required ingredient. The results extend research in collaborative heroism, supporting the basic premises of the theory, suggesting that the tools of the networked society are impacting the social construction of heroism, expanding it such that heroism is evolving to meet the demands of the 21st century.

KEYWORDS: heroism, social change, information technology, networked society, evolution of myth, human rights, social justice, cyberheroism, cloud computing, global citizenship

We are living in an era of unprecedented social change, much of which has been brought on by the advent of information and communication technologies (ICT's) (Davis, 1998; McLuhan, 1964). Although these catalysts have impacted every dimension of human activity (Barabasi, 2003; Christakis & Fowler, 2009), extending human senses (McLuhan, 1964) and with them, our minds (Clark & Chalmers, 1998), their impact on heroism has only recently become the subject of research. At first, we might wonder if it is possible for ICTs to impact something as fundamental as our understanding of heroism, which research often reveals to be linked to the risk of physical danger or harm (Franco, Blau & Zimbardo, 2011; Stenstrom & Curtis, 2012). Although we do not associate the use of our smartphones, tablets, or laptops with such risks, in certain situations, such risks do exist. The foundational link between heroism and ICTs, however, is best found in the work of comparative mythologist, Joseph Campbell (1972, 1992).

Campbell pointed out that technology plays a powerful role in the evolution of myth and cited humanity's trip to the moon as one such catalyst. As a product of myth, heroism is also subject to such evolution. Indeed, research suggests that ICTs, particularly the Internet

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and social media, are impacting our beliefs about the nature of heroism. Three terms coined to reference this area of scholarship include: *cyberheroism*, *Cyberhero archetype*, and *collaborative heroism* (Klisanin, 2012; 2013; 2014; 2015). Cyberheroism refers to the intersection of heroism and online activity; the Cyberhero archetype refers to a specialized form of the Hero archetype, and is used to identify individuals using digital technologies to achieve heroic deeds; collaborative heroism refers to heroism taking place in the situation of cloud computing—it involves collective efforts to accomplish noble goals through actions that take place in the “real” i.e., phenomenal world and “cyber” i.e., online world, often simultaneously (Klisanin, 2012; 2014; 2015).

Scholarship in this area is transdisciplinary, bringing together elements from social psychology, evolutionary systems design, and Integral theory (Klisanin, 2010). As transdisciplinary scholarship, it can be considered one of a number of evolutionary drivers leading to the emergence of “heroism science,” a new discipline that seeks “to craft the most inclusive definition of the science as [possible]” one that “is inclusive, transdisciplinary, and risk-taking” (Allison, 2015, pp. 1, 3).

The current research—an empirical investigation of the public’s perception of heroism in the networked society—aims to extend prior research through exploring the premises of collaborative heroism.

Background

The first empirical investigation exploring the intersection of heroism and digital technologies involved a self-report questionnaire designed to explore the theory of cyberheroism and the Cyberhero archetype. A broad definition of heroism was used that included features traditionally ascribed to heroes as well as features and characteristics ascribed to superheroes (Klisanin, 2012). Traditional features included everything from the willingness to risk one’s life on behalf of others (Franco & Zimbardo, 2006) to “benefiting others and acting selflessly” (Rankin & Eagly, 2008, p. 414); superhero features included universal compassion and access to superpowers such as dual-persona, shape-shifting, and speed (Packer, 2010). Universal compassion and magnanimity (a characteristic ascribed to social heroes, e.g., Martin Luther King, as well as superheroes, e.g., Superman) was hypothesized due to recognition that some individuals were using the Internet to act on behalf of individuals *outside of their specific in-group* (e.g., one’s neighbors, community, or nation).

Theoretically, the archetype was described as embodying a transpersonal sense of identity, described as “involving experiences in which the sense of identity or self extends beyond (trans) the individual or personal to encompass wider aspects of humankind, life, psyche, and cosmos” (Walsh & Vaughan, 1993, p. 3) and a potential embodiment of the “transmodern psyche,” a psychological profile described by O’Hara (1997, p. 5) as a psyche that:

Lives, thinks and acts locally and globally; embraces spiritual yearnings; tolerates ambiguity and difference; . . . [is] empathic with others; [has an] ethics based on right action over fixed principles; assumes personal and social accountability; . . . reasons abstractly and normatively; . . . respects non-rational ways of knowing; collaborates and competes in the service of the whole.

The survey results supported the major premises, i.e., 1) some individuals are motivated to act on behalf of other people, animals, and the environment using the Internet and digital technologies in the peaceful service of achieving humanity’s highest ideals and

aspirations, i.e., world peace, social justice, environmental protection and planetary stewardship; and 2) those individuals have a transpersonal sense of identity. Based on social learning theory (Bandura, 1977; 1996) and research in social persuasion (Bogost, 2007; Fogg, 2002) the pro-social behavior associated with the Cyberhero archetype was predicted to increase in tandem with the growing awareness of the ability to use digital technologies for good through social media (Klisanin, 2012).

In follow-up research using the multiple-case study method to explore the impact of social media initiatives on the social construction of heroism, the previous definition of heroism was refined (Klisanin, 2013; 2015). Concerns about heroism being defined in terms of one's specific in-group were renewed. It was noted that while a suicide bomber could be considered a hero to those in his/her in-group, the same could not be said to hold true at the level of the networked society. To continue conducting research on heroism in the networked society—the level of the collective—a global ethos was required. The “noble goals” ascribed to heroism had to be identified. Two documents considered to have global consensus in relation to human rights, social justice, and environmental protection, were selected. These consensus documents included the Universal Declaration of Human Rights (2016) and the Earth Charter (2016).

The Universal Declaration of Human Rights (UDHR) was:

Drafted by representatives with different legal and cultural backgrounds from all regions of the world [and] was proclaimed by the United Nations General Assembly in Paris on 10 December 1948 . . . as a common standard of achievements for all peoples and all nations. It sets out, for the first time, fundamental human rights to be universally protected. (United Nations, 2016).

The Earth Charter was called for in 1987 by the United Nations World Commission on Environment and Development for the purpose of setting forth fundamental principles for sustainable development.

The Earth Charter . . . involved the most open and participatory consultation process ever conducted in connection with an international document. Thousands of individuals and hundreds of organizations from all regions of the world, different cultures, and diverse sectors of society have participated. The Charter has been shaped by both experts and representatives of grassroots communities. It is a people's treaty that sets forth an important expression of the hopes and aspirations of the emerging global civil society (Earth Charter, 2016).

Having placed these parameters on the definition of heroism in the networked society, examination of the case studies revealed that actions taken through social media initiatives had impacted the real world and had included actions taken to secure human rights and environmental protection. By addressing the Articles of the UDHR and/or Earth Charter, the efforts met the criteria for heroism previously identified (Klisanin, 2013; 2015).

In addition to extending the heroic imagination (Franco & Zimbardo, 2006; Franco, Blau & Zimbardo, 2011) to encompass the global body, the research brought attention to the changing use of digital technologies—specifically, the mobile nature of engagement brought about by the *situation* of cloud computing. The tremendous impact of the situation on human behavior (Zimbardo, 2007), meant the newer situation of cloud computing could not be overlooked. By submersing the individual within an interactive matrix, the cloud was understood to erase clear dividing lines between action in the “cyber” world and the “real”

world—placing the individual in both the phenomenal world and cyberspace at once. This recognition, coupled with research suggesting that online activists were twice as likely to volunteer and participate in events and walks than non-social media cause promoters (Georgetown University’s Center for Social Impact Communication and Ogilvy Public Relations Worldwide, November, 2011), led the researcher to formulate the theory of collaborative heroism. Theory suggests “the data cloud has become a situational factor in our lives submersing individuals within an interactive matrix where clear dividing lines between action in the “cyber” world and the “real” world disappear, changing the way humanity goes about accomplishing noble goals” (Klisanin, 2015). When noble goals are defined in terms of the Articles of the UDHR or the Earth Charter, individuals in this matrix who set out to achieve those goals, are engaging in a new form of heroism, a collaborative form that relies upon the actions of large numbers of individuals (Klisanin, 2013; 2015).

The method of evolutionary systems design was later used to extend research on collaborative heroism through an exploratory investigation of the impact of information and communication technologies on three areas of heroism previously identified by Franco, Blau and Zimbardo (2011) as martial heroism, civil heroism, and social heroism. The study looked at ten dimensions of human activity and found evidence that cloud computing had impacted heroism in the areas identified. For example, martial heroism was found to be impacted by drone warfare, digital surveillance, and counter-cyberterrorism, while civil heroism was impacted by crowd-sourcing initiatives, and social heroism by citizen activism (Klisanin, 2014).

The current study extends research in collaborative heroism, exploring the theory’s major premises through exploring the public’s perception of heroism in the networked society. The premises include:

- 1) Digital technology and the situation of cloud computing has changed our situation, and with it, increased our potential to engage in heroic activity.
- 2) Collaborative heroism involves achieving noble goals such as those described in the Articles of the UDHR and Earth Charter.
- 3) Collaborative heroism involves the actions of large numbers of individuals.
- 4) Actions can be set in motion by the efforts of an individual, a small group of individuals, or through collective decision-making.
- 5) Risk depends upon the situation of the individual.
- 6) Collaborative heroism is associated with a variety of character strengths and virtues, including compassion and perseverance in the face of injustice.
- 7) Collaborative heroism increases individual agency and results in a more engaged citizenry capable of addressing global challenges and promoting a global eco-civilization. (Klisanin, 2014; 2015).

Method

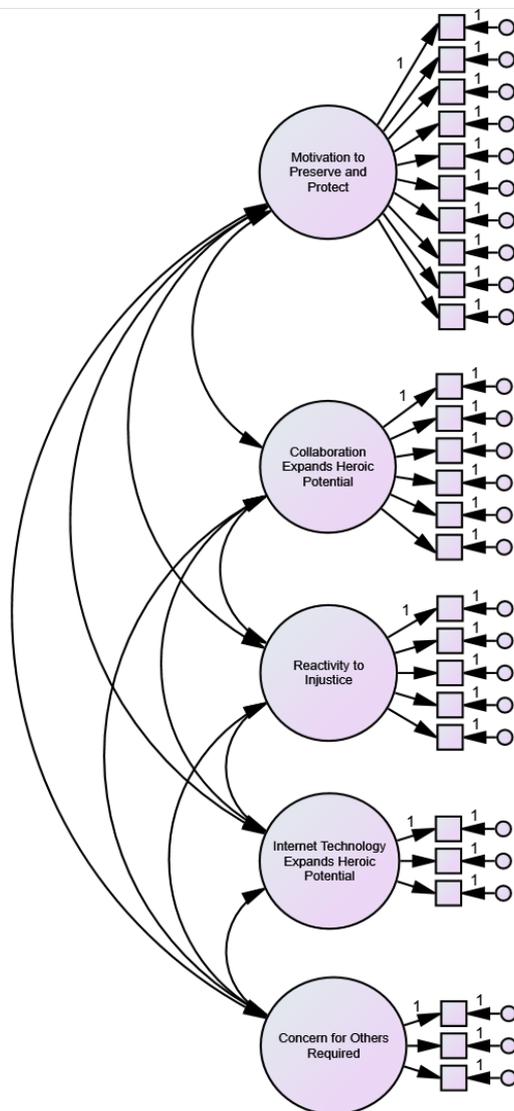
A survey was designed to explore the public’s perception of heroism in the networked society. Survey items were generated, reviewed, modified, reduced, and developed into survey items consisting of statements that the respondents indicated to be more or less true using a 4-point response scale: False, Slightly True, Mostly True, Very True. The survey was hosted through FluidSurveys.com. A link to the survey was shared with colleagues at a variety of organizations and institutions and posted to a variety of social media outlets.

Principal component analysis, a multivariate statistical analysis technique used to analyze the interrelationships among a large number of variables and to explain these variables in terms of a smaller number of variables, i.e., principal components, with a minimum loss of information (Jolliffe, 2002) was then used to analyze the responses. The goal was data reduction to identify the most prominent components of beliefs about heroism, and with particular interest in whether or not a collaborative component was present. Items with distinct loadings of .4 or higher were retained.

Results

Three hundred participants from 25 countries and 37 U.S. States completed the survey, 59.7 % female, 39 % male, and 1.3 % other. For detailed survey results see Table 1. Principle component analysis revealed a robust 5-component structure, based on 5 sets of distinct and tightly inter-related subsets of items. The content areas reflected by the 5 item sets were reviewed and labeled based on their common thread content (see Figure 1).

Figure 1. Participant Consensus



Discussion

Consensus among participants indicated that:

- (1) Collaboration expands heroic potential.
- (2) Internet technology expands heroic potential.
- (3) Heroes are motivated to serve and protect.
- (4) Heroes are responsive to injustice.
- (5) Concern for justice is a required ingredient.

The constellation of related factors empirically support a picture of modern day heroism that is influenced by the Internet and suggests a strong collaborative dimension to contemporary and consensus beliefs about the nature of heroic behavior. Through reviewing the statements in the clusters and examining the percentage of respondents who answered either “mostly true” or “very true,” support for the premises is identified.

Cluster 1: Collaboration expands heroic potential

The results of this cluster strongly support premises 3) Collaborative heroism involves the actions of millions of individuals, and 4) Actions can be set in motion by the efforts of an individual, a small group of individuals, or through collective decision-making. Survey items in this cluster include:

- Combined, 96.3 % of respondents answered “mostly true” or “very true” to the statement: *There are some problems in the world that can only be solved by the collective action of numerous people.*
- Combined, 97.7 % of respondents answered “mostly true” or “very true” to the statement: *Tackling global challenges will require the efforts of many individuals.*
- Combined, 96.0 % of respondents answered “mostly true” or “very true” to the statement: *Collective efforts to do good things benefit from the combined talents of the unique individuals involved.*
- Combined, 82.3 % of respondents answered “mostly true” or “very true” to the statement: *Some acts of heroism can only be completed through coordinated efforts among multiple people.*
- Combined, 94.0 % of respondents answered “mostly true” or “very true” to the statement: *I believe joint efforts can be beneficial in a way that individual efforts cannot.*
- Combined, 93.7 % of respondents answered “mostly true” or “very true” to the statement: *When individuals collaborate they become more than the sum of their parts.*

Cluster 2: Internet technology expands heroic potential

The results of this cluster strongly support premises 1, 2, and 7, i.e., 1) Digital technology and the situation of cloud computing has changed our situation, and with it, increased our potential to engage in heroic activity; 2) Collaborative heroism involves achieving noble goals such as those described in the Articles of the UDHR and Earth Charter; and 7) Collaborative heroism increases individual agency and results in a more engaged citizenry capable of addressing global challenges and promoting a global eco-civilization. Survey items in this cluster include:

- Combined, 78 % of respondents answered “mostly true” or “very true” to the statement: *Internet technology increases my ability to promote social equality/fairness.*
- Combined, 88.7 % of respondents answered “mostly true” or “very true” to the statement: *The Internet greatly enhances the ability of individuals to collaborate.*
- Combined, 71.3 % of respondents answered “mostly true” or “very true” to the statement: *Internet technology increases my ability to advocate for protecting the environment.*

Cluster 3: Heroes are motivated to serve and protect

Individuals indicated that actions such as reducing human suffering, promoting social fairness and universal equal rights, helping people get their basic needs met, protecting the rights of animals, and protecting natural resources, can be heroic endeavors. Each of these are addressed in the Articles of the UDHR, and/or Earth Charter Initiative, thus the results of this cluster support premise 2) Collaborative heroism involves achieving noble goals such as those described in the Articles of the UDHR and Earth Charter; and 7) Collaborative heroism increases individual agency and results in a more engaged citizenry capable of addressing global challenges and promoting a global eco-civilization. Survey items in this cluster include:

- Combined, 85.0 % of respondents answered either “mostly true” or “very true” to the statement: *Helping people get their basic needs met (e.g., food, shelter, ability to work) is a heroic endeavor.*
- Combined, 90.7 % of respondents answered either “mostly true” or “very true” to the statement: *Reducing human suffering can be a heroic endeavor.*
- Combined, 85.7 % of respondents answered either “mostly true” or “very true” to the statement: *Promoting social fairness for all people can be a heroic endeavor.*
- Combined, 85.3 % of respondents answered either “mostly true” or “very true” to the statement: *Promoting universal equal rights for all people can be a heroic endeavor.*
- Combined, 87.7 % of respondents answered either “mostly true” or “very true” to the statement: *Protecting natural resources can be a heroic endeavor.*
- Combined, 83.6 % of respondents answered either “mostly true” or “very true” to the statement: *Protecting the rights of animals can be a heroic endeavor.*
- Combined, 88.7 % of respondents answered either “mostly true” or “very true” to the statement: *Taking action to prevent suffering is a form of heroism.*
- Combined, 64.3 % of respondents answered either “mostly true” or “very true” to the statement: *Some of the actions of everyday people such as donating funds to feed needy children, should be considered heroic actions.*
- Combined, 84.0 % of respondents answered “mostly true” or “very true” to the statement: *People who rescue abused animals have acted heroically.*
- Combined, 87.0 % of respondents answered “mostly true” or “very true” to the statement: *People who participate in search and rescue efforts are engaging in heroic behavior.*

Cluster 4: Heroes are responsive to injustice & Cluster 5: Concern for justice is a required ingredient

Taken together, these two clusters support premises 2 and 6, i.e., 2) Collaborative heroism involves achieving noble goals such as those described in the Articles of the UDHR and Earth Charter; and 6) Collaborative heroism is associated with a variety of character strengths and

virtues, including compassion and perseverance in the face of injustice. Survey items in cluster 4 include:

- Combined, 82.4 % of respondents answered either “mostly true” or “very true” to the statement: *When I see forces threatening social fairness I feel motivated to act against those forces.*
- Combined, 75.3 % of respondents answered either “mostly true” or “very true” to the statement: *When I see forces threatening the environment I feel motivated to act against those forces.*
- Combined, 79.3 % of respondents answered either “mostly true” or “very true” to the statement: *When I see forces threatening animals I feel motivated to act against those forces.*
- Combined, 71.7 % of respondents answered either “mostly true” or “very true” to the statement: *I take large scale threats to social equality personally.*
- Combined, 53.0 % of respondents answered either “mostly true” or “very true” to the statement: *I think the boundary of my identity encompasses all the people of the world.*

Survey items in cluster 5 include:

- Combined, 85.0 % of respondents answered “mostly true” or “very true” to the statement: *Heroic action requires that someone other than the hero benefits from the action.*
- Combined, 86.6 % of respondents answered “mostly true” or “very true” to the statement: *True heroism requires action guided by concern for others.*
- Combined, 96.7 % of respondents answered “mostly true” or “very true” to the statement: *There are many types of heroes in the world.*

Some of the results are similar to earlier findings on the Cyberhero archetype in which participants described the boundary of their identities as “encompass[ing] all the people of the world” (Klisanin, 2012). Further investigation of the identities, characteristics, and traits of individuals engaging in forms of collaborative heroism is warranted, particularly in terms of the “eight great traits” of heroes identified by Allison and Goethals (2011) that include: smart, strong, resilient, selfless, caring, charismatic, reliable, and inspiring.

Conclusion

Interactive technologies have come to define our culture, and as such, they influence and shape our modes of perception and behavior. The research suggests that the tools of the networked society are impacting the social construction of heroism, expanding it such that heroism is evolving to meet the demands of the 21st century. The evidence provides a snapshot of the way the public’s perception of heroism is changing in the digital era. The identified sets of items represent reliable measures and can be used in future research.

Collaborative heroism is best understood as a form of heroism that requires some amount of leadership, i.e., the initial action of the individual or small group that sets the various activities in motion. While the study of such individuals is beyond the scope of the current research, future research may deem these individuals to be heroes in their own right. The merging of these narratives, i.e., the lone hero and the collaborative, is found in the collaborative effort that brought the Ebola epidemic to an end. In 2014, *Time Magazine* named the “Ebola fighters” as “Person of the Year,” (Gibbs, 2014) a designation intended to honor those who voluntarily exposed themselves to the deadly virus—this designation speaks to traditional heroic narratives, while nodding to a collaborative context. Additionally,

widespread consensus suggests their efforts were aided by the action of thousands of volunteers who used crowd source platforms, such as OpenStreetMap, to provide crucial support (Center for Disease Control, 2015).

Meier (2015) has noted that individuals using crowd sourced platforms to engage in disaster response efforts are “digital humanitarians,” providing yet another way to identify individuals using digital technology to accomplish heroic goals. This extension of the humanitarian into cyberspace is another indication of the evolution of mythology in contemporary times. As augmented and virtual reality become increasingly available, the comingling of the cyber world and the real world will become ever more commonplace—this matrix is a new frontier for heroism research. Avenues for its research should expand accordingly.

Table 1. Collaborative Heroism Survey Results

Statements	False	Mostly True	Slightly True	Very True
1. I believe joint efforts can be beneficial in a way that individual efforts cannot.	.7	31.0	5.3	63.0
2. I take large scale threats to social inequality personally.	6.3	38.0	22.0	33.7
3. Heroes tend to gravitate toward one another for collaborative action.	9.3	38.3	36.7	15.7
4. When I see forces threatening social fairness I feel motivated to act against those forces.	2.0	41.4	15.7	41.0
5. When I see forces threatening animals, I feel motivate to act against those forces.	3.0	36.3	17.7	43.0
6. When I see forces threatening the environment, I feel motivated to act against those forces.	2.0	44.0	22.7	31.3
7. I think the boundary of my identity encompasses all the people of the world.	25.0	26.7	22.0	26.3
8. When I take action to benefit others, I feel more meaningfully connected to them.	.7	34.3	6.3	58.7
9. I believe that some people are able to act selflessly because their identity extends far beyond their own skin.	5.0	27.3	13.7	54.0
10. Internet technology increases my ability to promote social equality/fairness.	4.3	37.0	17.7	41.0
11. Internet technology increases my ability to advocate for protecting the environment.	3.3	32.3	25.3	39.0
12. There are many types of heroes in the world.	.7	16.7	2.7	80.0
13. In times of crises the world needs more heroes.	5.0	25.0	9.3	60.7
14. Some activists demonstrate heroic qualities.	4.7	35.0	21.7	38.7
15. Heroes tend to be resourceful in their	7.3	37.0	32.7	23.0

use of technology in heroic acts.				
16. True heroism requires action guided by concern for others.	3.3	25.3	10.0	61.3
17. Without the participation of groups, social change seldom takes place.	2.3	42.0	11.0	44.7
18. When individuals collaborate they become more than the sum of the their parts.	.7	27.0	5.7	66.7
19. Tackling global challenges will require the efforts of many individuals.	.3	16.7	1.3	81.0
20. Heroic action requires that someone other than the hero benefits from the action.	7.0	21.7	6.7	63.3
21. Some acts of heroism can only be completed through coordinated efforts among multiple people.	4.0	32.3	12.7	50.0
22. If a country has an oppressive regime, citizens who speak out/act out against it have acted heroically.	1.7	29.3	9.7	58.0
23. The internet greatly enhances the ability of individuals to collaborate.	.7	28.7	10.0	60.0
24. The heroism of everyday people often goes unrecognized.	.3	29.0	5.7	64.0
25. Some of the actions of everyday people, such as donating funds to feed needy children, should be considered heroic actions.	9.7	33.3	25.7	31.0
26. People who rescue abused animals have acted heroically.	1.3	35.3	14.3	48.7
27. Modern day superheroes in movies/literature tend to incorporate the power of technology into their characters.	3.7	45.0	20.3	30.0
28. People who participate in search and rescue efforts are engaging in heroic behavior.	2.0	28.0	10.3	59.0
29. Taking action to prevent suffering is a form of heroism.	1.7	29.0	9.7	59.7
30. Joining the efforts of numerous people can make problem- solving more likely to succeed.	2.3	40.0	10.7	47.0

31. Groups can be just as heroic or more heroic than individuals.	5.0	34.3	13.3	47.3
32. There are some problems in the world that can only be solved by the collective action of numerous people.	1.3	25.0	2.3	71.3
33. Imagining a heroic act makes it subsequently easier to act out in real life.	12.7	35.3	25.0	27.0
34. Collective efforts to do good things benefit from the combined talents of the unique individuals involved.	1.0	37.0	3.0	59.0
35. In order to justifiably deem an action heroic, one must know how beneficial the act is for a person or group external to the action taker.	28.3	34.3	21.7	15.5
36. Reducing human suffering can be a heroic endeavor.	1.3	25.0	8.0	65.7
37. Promoting social fairness for all people can be a heroic endeavor.	2.7	27.7	11.7	58.0
38. Helping people get their basic needs met (e.g., food, shelter, ability to work) is a heroic endeavor.	2.0	26.7	13.0	58.3
39. Promoting universal equal rights for all people can be a heroic endeavor.	3.3	28.0	11.3	57.3
40. Protecting natural resources can be a heroic endeavor.	2.3	34.7	10.0	53.0
41. Protecting the rights of animals can be a heroic endeavor.	2.7	30.3	13.7	53.3
42. A heroic act can serve the interests of both the actor and others.	3.3	33.7	6.7	56.3

REFERENCES

- Allison, S., & Goethals, G. (2011). *Heroes: What they do and why we need them*. New York City: Oxford University Press.
- Allison, S. T. (2015). The initiation of heroism science. *Heroism Science*, 1, 1-9.
- Bandura, A. (1986). *Social foundations of thought and action : A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: W.H. Freeman.
- Barabasi, A. (2003). *Linked: How everything is connected to everything else and what it means for business, science, and everyday life*. New York: Penguin Group.
- Bogost, I. (2007). *Persuasive games: The expressive power of videogames*. Boston: Massachusetts Institute of Technology.
- Campbell, J. (1972). *Hero with a thousand faces*. Bollingen Series, Novato, CA: New World Library. (Originally published in 1949 by Pantheon Books.)
- Campbell, J. (1993). *Myths to live by*. New York: Penguin Compass.
- Center for Disease Control (2015). Retrieved from <http://blogs.cdc.gov/publichealthmatters/2015/01/mapping-for-ebola-a-collaborative-effort/>
- Christakis N., & Fowler, J. (2009). *Connected: The surprising power of our social networks and how they shape our lives*. New York, NY: Back Bay Books, Little, Brown, & Company.
- Clark, A., & Chalmers, D. (1998). The extended mind. *Analysis*. 58(1),7-19.
- Davis, E. (1998). *Techgnosis: Myth, magic, mysticism in the age of information*. New York: Harmony Books.
- Earth Charter (2016). Retrieved from <http://earthcharter.org/about-eci/faqs/>
- Fogg, B. (2002). *Persuasive technology: Using computers to change what we think and do*. USA: Morgan Kaufmann Publishers.
- Franco, Z. & Zimbardo, P. (2006). The banality of heroism. *Greater Good*. Retrieved from http://greatergood.berkeley.edu/article/item/the_banality_of_heroism/
- Franco, Z., Blau, K., & Zimbardo, P. (2011). Heroism: A conceptual analysis and differentiation between heroic action and altruism. *Review of General Psychology*. 17 (2), 99-113.
- Georgetown University's Center for Social Impact Communication and Ogilvy Public Relations Worldwide (November, 2011). *Dynamics of cause engagement*. Retrieved from <http://www.slideshare.net/georgetowncsic/dynamics-of-cause-engagement-final-report>
- Gibbs, N. (2014). The choice. *Time Magazine*. Retrieved from <http://time.com/time-person-of-the-year-ebola-fighters-choice/>
- Jolliffe, I. (2002). *Principal component analysis, series: Springer series in statistics*, 2nd ed., New York: Springer.

- Klisanin, D. (2011). Is the Internet giving rise to new forms of altruism? *Media Psychology Review* [Online] 3(1).
- Klisanin, D. (2012). The hero and the Internet: Exploring the emergence of the Cyberhero archetype. *Media Psychology Review*. 4(1).
- Klisanin, D. (2013). *Collaborative heroism: Confronting global challenges through social media*. Paper presented at the annual convention of the *American Psychological Association*, Honolulu, HI.
- Klisanin, D. (2014). *Changing global mindsets: convergence & activism*. Paper presented at the annual conference of the *European Meeting on Cybernetics and Systems Science*. Abstract retrieved from <http://emcsr.net/book-of-abstracts/>
- Klisanin, D. (2015). Collaborative heroism: Exploring the impact of social media initiatives. *Media Psychology Review*. [Online] 9(2).
- McLuhan, M. (1964). *Understanding media: The extensions of man*. Boston, MA: MIT Press.
- Meier, P. (2015). *Digital humanitarians: How big data is changing the face of humanitarian response*. Boca Raton, FL: CRC Press.
- O'Hara, M. (1997). Person-centered and experiential therapy in an age of cultural transition. *Brennpunkt*. 75(98), 13-21.
- Packer, S. (2010). *Superheroes and superegos: Analyzing the minds behind the masks*. California: Praeger.
- Rankin, L., & Eagly, A. (2008). Is his heroism hailed and hers hidden? Women, men, and the social construction of heroism. *Psychology of Women Quarterly*, 32, 412-422.
- Stenstrom, D., and Curtis, M. (2012). Heroism and risk of harm. *Psychology, Scientific Research*, 3(12A), 1085-1090. Retrieved from <http://dx.doi.org/10.4236/psych.2012.312A160>
- United Nations (2016). Retrieved from <http://www.un.org/en/universal-declaration-human-rights/index.html>
- Walsh, R., & Vaughan, F. (1993) *Paths beyond ego: The transpersonal vision*. New York: Tarcher/Putnam.
- Zimbardo, P. (2007). *The Lucifer effect: Understanding how good people turn evil*. New York: Random House.

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