

## COMPARING NETWORKING STRUCTURE OF COMMERCIAL AND NON-COMMERCIAL BIOHACKING ONLINE-COMMUNITIES

Sipra Bihani, Michael Hartman, Amanda Rosenberg, Florian Sobiegalla

IIT Stuart School of Business, University of Bamberg  
Chicago USA, Bamberg Germany

sbihani@id.iit.edu, michael-wolfgang.hartmann@stud.uni-bamberg.de, arosenberg@id.iit.edu,  
florian.sobiegalla@me.com

### **ABSTRACT**

This paper compares two biohacking groups, Bulletproof Executive and DIYbio and focuses on the social network structures, activities and entry points.

### **INTRODUCTION**

Biohacking is a term that was first used online in December 2008 and now encompasses a wide range of activities and driving motivations (Google Trends). Based on secondary research and an interview with a biohacker, we define biohacking as the amateur practice of biological experimentation for a self-defined purpose using a variety of DIY devices and techniques in a non-traditional setting. This paper is an examination of two networks that have manifested biohacking with distinct approaches and missions and therefore different network structures.

DIYbio was founded in 2008 by Mackenzie Cowell and Jason Bobe with the mission of “establishing a vibrant, productive and safe community of DIY biologists” (DIYbio.org). In 2011, they held two congresses with delegates from North America and Europe to create a framework for the emerging ethics of biohacking.

The Bulletproof Executive (B.E.) is a network lead by Dave Asprey. Asprey has invested \$300,000 into biohacking himself. Through his individual curiosity he has formed a community that respects his word about valid methods of self-improvement and experimentation (Asprey). He connects with other biohacking networks focused on topics such as nutrition and spirituality. The first conference organized by B.E. was held in September 2013, and the B.E. website includes a store that sells products including Bulletproof Coffee and Asprey’s cookbook.

The two groups have very different goals for what they want to accomplish by building the social networks. How do the goals affect the structure, activities, and entry points of the networks? Both groups do many of

the same activities. However, DIYbio is primarily a coolfarmer and aims to draw people who want to create, tinker, and hack in an open source environment (Gloor 2010). B.E., on the other hand, is brokering biohacking-related networks and commercializing products, and therefore is primarily coolhunting (Gloor 2007).

### **COMPARISON OF BIOHACKING GROUPS**

Both B.E. and DIYbio use online social media to share knowledge, expand their network, and meet their respective goals. Both groups have a website, a blog, a Facebook page, and a Twitter account; DIYbio also has a newsletter and Google group while B.E. has multiple Twitter accounts, a YouTube channel, an Instagram account, a Google+ page, and a podcast. Methods used to develop the comparison are social network analysis on biohacking and the two networks with Condor and Gephi, an expert interview with a biohacker, surveys to biohacking groups, Google Trends analysis, and secondary research about biohacking and the two networks.

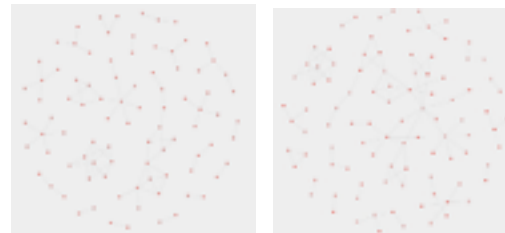


Figure 1 (left) : Twitter fetch for “DIYbio” on Dec 6, 2014; Figure 2 (right): Twitter fetch for “LondonBioHack” on Dec 6, 2014

DIYbio has the mission of democratizing biological research and is for individuals who are biohacking in a more intensive way. As Figure 1 shows, the network has no central node. Rather, the network is composed of regional COINs, which are local chapters around the world. The regional COINs mostly set their own protocols. Figure 2 shows the LondonBioHack, which is a local chapter. Members of the group are connected with one another more so than those tweeting about

DIYbio. The regional COINs often times make hardware or software to be able to hack biology. In this way, the organization is coolfarming with projects such as OpenerPCR (survey, Nov 19, 2014). The umbrella organization, DIYbio, exhibited coolfarming behavior when it outlined ethics for biohacking in 2011.

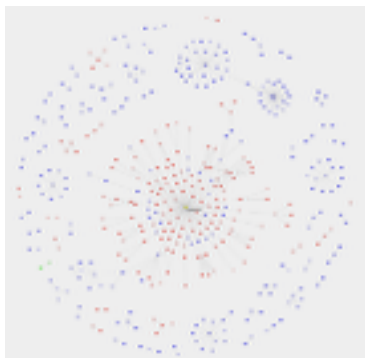


Figure 3: Twitter Fetch for “Bulletproof Coffee” in blue, “Bulletproofexec” in red, “Dave Asprey” in green on Nov. 19, 2014. The central yellow node is Dave Asprey (@bulletproofexec)

B.E. has two twitter accounts: Dave Asprey (@bulletproofexec) and BPNutrition (@BPNutrition.) As Figure 3 shows, Dave Asprey is a central node in the network; BPNutrition is a bridge to other accounts. There are also tweets by accounts that are on the fringe and not connected to either Dave Asprey or BPNutrition. The majority of the non-connected accounts’ tweets are about Bulletproof Coffee. Some of these accounts are connected with one another in networks that are outside of the B.E. COIN. The popular commercial product has spurred attention and interest to form a Collaborative Learning Network (CLN) with members who self-identify as biohackers and members who do not associate as biohackers and are not experimenting on themselves (Gloor, 2010).

Asprey has and is continuing to broker a biohacking network. As sociologist Ronald Burt writes, network brokerage is building connections across different social circles that provide more exposure to variations in opinions and behavior (Raine, 49). Asprey is a coolhunter, who shares the people and topics he finds interesting with others through his social media, such as on his podcast, and the annual conference. The B.E. Conference covered a wide range of topics including electromagnetic, sleep, and oxygen. In an interview with a participant at the B.E. Conference, he said that he felt like it was the first real biohacking conference (personal communication, October 29 2014.) In this way, Asprey brokers different groups and is central in

biohacking because he has built so many bridges between biohacking sub-groups. This brokering enables B.E. to be influential in many types of conversations about biohacking as well as provides channels for commercialized products.

## CONCLUSION

The paper finds the following comparison between the two groups.

	B.E.	DIYbio
Network influence	leader	no leader
COIN structure	one COIN with a CLN	a network of COINs
Network focus	coolhunting	coolfarming
Product type	commercial	open-source

The paper will further explore with whom and how Dave Asprey brokers the network and will also critically examine the effect of commercialization on the B.P. network and how DIYbio has remained open source based.

## REFERENCES

- Asprey, Dave (2014, Dec 2). *Dave Asprey: Founder, the Bulletproof Executive*. Retrieved from: <https://www.linkedin.com/in/asprey>
- DIYbio. (2014, Nov 10). *DIYbio*. Retrieved from: <http://diybio.org>.
- Gloor, P., & Cooper, S. (2007). *Coolhunting: Chasing Down the Next Big Thing*. New York: AMACOM.
- Gloor, P. (2010). *Coolfarming: Turn Your Great Idea into the Next Big Thing*. AMACOM, NY 2010.
- Google Trends. (2014, Dec 6). ‘Bulletproof Coffee’, ‘DIYbio’, ‘Biohacking’ Topics. Retrieved from: <http://www.google.com/trends/explore#q=Bulletproof%20Coffee%2C%20%2Fm%2F05b27dn%2C%20%2Fm%2F0j42w2f&cmpt=q>
- Moschel, Mark. (2014, Nov 10). *The Beginner’s Guide to Biohacking*. Retrieved from: <https://medium.com/better-humans/the-beginners-guide-to-biohacking-5179b9967c16>
- Raine, L & Wellman, B. (2012). *Networked: The New Social Operating System*. Cambridge, MA: MIT Press