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Thesis Prospectus - In Critique of the Hacker Mythos

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We need to dispel the hacker mythology. All academics turn to Steven Levy's early writing about this Hacker Anarchist Utopia on the ninth floor of an otherwise nondescript MIT edifice. From the beginning, this fictional Utopia (A computer Eden) was in stark contrast to the reality of the institutional political system funded by the advanced defense research wing of the US government, DARPA. The requirements to sign up for time, and the fact that there was only a single computer for the entire group created a totally unanarchic, un-utopian political structure. It takes a massive leap of fiction in order to draw an Anarchist Edenic computer Utopia from this institutional environment. If anything, it was a monastery, complete with presumably celibate monks supplicating to the single sanctuary of the one true machine-god, living a relatively simple life, with the all consuming pursuit of contemplation of, and eventual communion with the machine being the prime motive. The Hacker Ethic was a product of artificial institutional construction. It is not universally applicable outside of those artificial, institutional boundaries, so it was forced to evolve.

The evolution of the Hacker Ethic had more to do with institutional and political factors than purely scientific or even hackerific goals. My intent is to isolate the expression of the Hacker Ethic in the various periods of the Computer Revolution from 1959 - 1991 (ending the historical narrative with the release of Linux 0.1). These periods are divided up into the birth of the culture in MIT, it's ensuing spread to Stanford and other universities during the 60's. Then the 1970s saw the rise of the personal computer, with the Silicon Valley based, Homebrew Computer Club being the proposed Mecca of the microchip. This leads to the Hacker Ethic being transmitted via the BBS community in the 80s and how then it was popularly expressed via the Hacking and Phone Phreaking scenes. And, I want to talk about the highly publicized FBI busts in the late 80s/early 90s. The Hacker Ethic was created by the 60s counterculture, for

the counterculture, and that it spread underground through the BBS systems and finally clashed openly on a larger scale with the dominant culture. The Hacker Ethic can also be characterized as a sort of ideal agent-provocateur, since it was birthed and weaned on the dime of the DoD, intentionally or not.

The story of this culture is intertwined with some key advances in technology. I am going to trace these advances into the total history of human communication technology. From smoke signals, to mountaintop signal fires, to electric wires transmitting binary codes for the telegraph, to the first transatlantic radio transmissions with a spark-gap generator, and onward through networking computer systems. I avoid giving the stories in Levy's journalistic chronicle the genetic emphasis in this story, reframing the first networked computer system (The chess playing prank that I've heard repeated in a dozen different sources) as nothing more than another step along this track of transmitting binary data, whether via smoke signals or electric pulses, as no less but humans using tools to transmit data to other humans. What's really all that revolutionary there? The coevolution of the network of BBS systems alongside the ARPAnet became what we see as the internet today. Most of the cultural norms and values that we see emerge from the Internet were not born on the ARPAnet mainframe systems. They were built in the depths of the telephone network, being used, not for it's designed purpose of sending single voice communications, but instead being used to transmit computer data using MODEMs and hobbyist microcomputer systems.

This paper will trace the evolution of ideas that led to the creation of this Hacker Mythos. I will begin by exploring the mythology of the Golden Age of Hacking. I will critically engage with the texts that all academics, regardless of discipline, agree that define the Hacker Mythos¹. I will also be enaging with the primary source material from these eras to both validate and criticise Levy's mythology, like the Jargon File. There are a wealth of primary source material available

¹ Levy, Stephen. *Hackers, Heroes of the Computer Revolution*. 1984. Print. and Raymond, Eric. S. *The Cathedral and the Bazaar*. O'Reilly. 1999. Print.

on TextFiles.org, an online archival source for files saved from the distributed network of the BBS community. It is expansive. I also have access to archives of material from the zines that were published, 2600 and Phrack. I will not be looking at much from the Internet as we think about it today. The Internet algorithms weren't really ready for the amount of traffic it would need to handle until the last couple years of the 1980 decade.

Every Golden Age ends in a fall from grace. I will also be tracing the codification of the criminal element of hackers to a single document released in 1982 by the Department of Justice, Bureau of Justice Statistics. It outlines exactly what a computer crime is. Amusingly, it heralds the "Dawn of the Age of Aquarius" to usher in the "Age of the Computer". Hackerdom has, by now, eaten from the fruit from the tree of knowledge of good and evil. By the time Linux 0.1 is released from a graduate student in Finland, hackers become public-enemy number one. Highly co-ordinated and even more highly publicized, the FBI busts rings of hackers all over the United States. Other countries see similar crackdowns. The journalistic texts recounting this story defined the culture. This could be characterized as the adolescent stage in the growth of the hacker culture, commonly known as the Hacking and Phreaking scene². I explore a wide selections of texts that look at these new kinds of hackers, phreaks, and crackers, as the hacker spreads from the ivory towers to the streets. There are a dozen books written about the topic that are compiled from literally hundreds of news articles. I will also be looking at popular underground magazines from this era, Phrack, 2600, as well as exploring some popular hacker archives of BBS material. I will also be looking at other primary source material from this era in order to trace the evolution of hackerdom through it's clashes with the dominant culture in America as well as the government's systematic involvement in enforcing and enabling computer security after, if accidentally, creating the culture of free exploration so vaunted from the Golden Age. I also point to Levy's canonical text as the catalyst of this movement, because of

² (Sterling, The Hacker Crackdown, Kevin Mitnick, British Equivalent, Other Hacker texts)

it's 1984 release and the surge in the hacking community at that same time, with the releases of both of the major hacking 'zines in that same year.

Finally, we come to the next major milestone in the development of this culture, with convergent ideational evolution, the GNU project and Linux both come together to form a fully functioning operating system that has been likened as the Operating System equivalent of giving away fully functional M1-A1 Abrams tanks by lining them on the side of the road with the keys in the ignition³. The final part of this evolution is still happening right now. It happening at hacker conferences all over the world, in every country, on every continent, every month, every day in hackerspaces, every time somebody openly commits a patch to the linux kernel, or submits a bug report to Mozilla. There are more projects than I have space to explore in the scope of this project. The important thing about the final part of this evolution is that the core ethic of sharing software⁴, legitimized by the mythology of the Golden Age, is expanding outside of that narrow realm of algorithms and software. Today we have a free and open crowdsourced encyclopedia that's a more expansive collection of human knowledge than any source has ever been, Wikipedia. An Open Source textbook initiative in California just passed, promising free textbooks to students, though they have to pay \$20 for a printed version. The open source hardware projects, such as RFHack, funded by the same DARPA that built the Golden Age. Ethiopian children, who had never before seen a printed word, were hacking OLPC's with no outside guidance. It's not just about sharing software anymore, and it's not just about sharing with the small Utopian group in a constructed environment. The next step in this mythology is about sharing this information with everyone. "There is only one time in the history of each planet when its inhabitants first wire up its innumerable parts to make one large machine...You

³ (In the beginning was the command line, Neal Stephenson, a footnote about the popular automotive metaphor for computer programs might be fun here "You wouldn't download a car, would you?" (I would, if I could.))

⁴ "Information should be free." Levy repeats about five times throughout the first hundred pages.

and I are alive at this moment.”⁵

Some light will sterilize this myth of Hackers as archetypal Tricksters, of Hackers as some kind of cybernetic transhuman übermensch. I argue that this idea of Hackers as we think about them today was created artificially, if not intentionally, by the United States Department of Defense, FBI, and other American institutions in an attempt to protect systems that they could not technologically secure because of their inherent complexity. The knee-jerk reactions to the perceived power of this mythic Hacker left its scars on the American technological landscape. With everyone fearing that their kid might suddenly be breaking into FBI databases and running a cyberspace crime syndicate, the US technical education of its youth was crippled for a generation. With simple curiosity and exploration becoming punishable by mandatory and excessively long prison sentences, many became more fearful than curious about these computational constructs, it's no wonder that the US is legendarily behind the world curve in STEM education. Even still, this mythology captured the imaginations and energy of a large number of intelligent computational minds within and outside of the institutions. It comes with a pre-packaged Golden Age, a codified jargon packaged in a handy ASCII text file, and an institutional Mecca (maybe two if you count Stanford alongside MIT, though Stanford has almost always been second place to the Boston Brownstones) that just so happens to also be a prestigious American University. As with any mythology, the real story is more complicated, more distributed, and a little bit darker.

⁵ Kelly, Kevin

Outline of the Bits and Bobs

The Hacker Mythos - A Diachronic Evolutionary Track

Golden Age

Levy

Jargon File

Whole Earth Catalog

Early Hardware Hackers

Fall from Grace

Middle Earth Metaphors

Mythology of the smart, bored teenager criminal mastermind

Phreakers, Hackers, Mitnick, etc.

Culture of BBS vs (or +) Culture of Internet

[research TBD]

Ubiquitous Internet - What's going on in this thread?

Eternal September - The Great Flood?

WWW++

The Hacker Crackdown

FOSS Movement gets Serious

GNU/Linux

Internet Ubiquity - Ease of access - Ease of Contribution

Computer Revolution as Scientific Revolution - Kuhn

Critical - The myth of Scientific Revolutions

The "progress" conceit.

Cyberspace as Place - Virtual Public Spheres, Roots of the Post-National Constellation - Habermas.

Internet People as the Indigenous culture.