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TRUE NAMES, TRUE NYMS.
THE POWER OF TECHNOLOGY AND THE FUTURE OF IDENTITY

> "There's a truism among science–fiction writers
> that science fiction may look like it's talking about the future
> but really it's just a mirror of the present."
> Vernor Vinge (Yonck, 2008)[1]

Abstract

This essay argues that for cypherpunk activists, the power of technology over individuals and the nature of people's identity provide the points of difference with cyberpunk writers. For the cyberpunks, identities are framed in context, so that an aggressive elite can adopt technology to disempower the mass of citizens. For the cypherpunks, identities are instead autonomous from context; therefore, citizens can use technology for self-empowerment. The paper also deals with the future of identity.

Key words: cyberpunk, cypherpunk, name, pseudonym, identity

Introduction

In the early nineties, a group of cryptography experts, electronic engineers, technology entrepreneurs, and political writers called 'cypherpunks' gave life to ideas like online self-organized communities promoted through the use of encrypted technologies. The 'cypher' part of the word relates to the British spelling of 'cypher.' The 'punk' part of the word comes from the cultural movement of the 1970s, where 'punk' in this context means streetwise, aggressive, and offensive to the establishment. A punk is the result both of reaction to a corrupted establishment and disillusion towards the countercultural utopias. Thus, the cyberpunks aggressively resisted the rise of political and corporate control over the cyberspace through an aggressive use of encrypted technologies.

Scholars have recently begun to take a second look at the cypherpunk activists. A reason why scholars are showing renewed interest in the cypherpunk activists is simply that they are the ideological

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offspring of Bitcoin and other current distributed technologies (Narayanan *et al.*, 2016). In other words, scholars attempt to identify the political and cultural lineage of distributed technologies by looking back at cypherpunks. Work has been recently done on political theory and political philosophy, law, and business in order to identify the potential sources of the utopian scenario described by the cypherpunk activists, in which free individuals communicate and trade through the Internet without interference from controlling government (Assange *et al*., 2012; Beltramini, 2019; Dahlberg, 2017; Greenberg, 2012).

Taking a cue from such recent literature, this article takes a different route and investigates the cypherpunk theory of technological power on individuals: does technology empower or disempower citizens? It investigates these themes by comparing cypherpunk activists' notions of technological power and human nature with the same notions as seen in the work of cyberpunk writers. In the eighties, archetypal cyberpunk author Vernor Vinge envisioned the disempowering effect of technology on ordinary citizens and the consequent dystopian prediction of cyberspace users' tendency to cohabit with surveillance state and to concede their real (true) names. A decade later, cypherpunk activist Timothy C. May departed from this prediction. While he recognized Virge's influence on his thought, May celebrated the liberating force of technology and its empowering effect of ordinary citizens. He saw the coming of encrypted technologies and virtual communities managed by their members' virtual identity (their True Nyms). The implicit theory of human nature in May's vision was that of rational, autonomous, strong individuals who carefully protect their real-world identities (their real names).

Numerous scholars have traced the influence of cyberpunk authors on the development of a technological culture (Roszak, 1986; Turner, 2006). A number of political theorists have also discussed the intellectual sources of inspiration of cypherpunk activists' ideology (Loop, 2016; Borders, 2018). None, however, has extensively analyzed the connection between these two topics. In this essay, attention is focused on the differences between these two topics. In fact, in this article it is argued that for cypherpunk activists, the power of technology over individuals and the nature of people's identity provide the points of difference with cyberpunk writers.

This is a three-part article. The first part focuses on Vernor Vinge's *True Names* while the second part deals with May's project, i.e., Crypto Anarchy. The link between Crypto Anarchy and Bitcoin is also examined. Crypto Anarchy is the theory of social organization embedded into the cryptocurrency Bitcoin. In the third part of this article, a discussion is initiated about May's libertarian conception of human nature and its shortfalls. Source material for this paper includes communications from key individuals, organizations, and other members of the distributed community (including interviews, papers, conference videos, mission statements, wiki, blogs, and forum postings).

True Names

Written by Hugo-winning author Vernor Vinge (b. 1944), the 30,000-word novella *True Names* (1981) introduced the concept of a virtual landscape.[2] The concept would be crystallized by William Gibson (b. 1948) through the term 'cyberspace' (*Neuromance*r, 1984) and later expanded by other science fiction (SF) authors like Bruce Sterling (b. 1954) and Neal Stephenson (b. 1959). Together, these SF writers articulated a dystopian subgenre called 'cyberpunk' that tends to focus on the notion of surveillance state and corporate monitoring. The 'cyber' part of the word relates to cybernetics, that

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[2] Hugo and Nebula awards are the top honors in SF.

is, a reality in which political and industrial powers will be global and controlling through information networks.

Most of the relevant literature on cyberpunk as a SF literary subgenre traditionally focuses on the dystopian character of such a genre (Bell, 2001; Taylor, 1999; Thomas, 2002). It deals with the trajectory that, passing through Ridley Scott's *Blade Runner* (1982) and Gibson's *Neuromancer*, connects Vinge's initial insights on advanced technological and scientific achievements causing dystopian changes in the social order to the current conversation on digital authoritarian states. Cyberpunk authors believed that cyberspace would offer liberal democracies the chance to transform themselves in police states through the development of high levels of social control driven by machine learning algorithms and related technological tools. From the vantage point of the current age of de-globalization, it is easy to recognize in this dystopian subgenre the seeds of the present idea of digital authoritarian states. While the dream of a free, borderless, and global Internet has faded, the reality is filled with domestic governments controlling the Internet in ways that sharply limit individual freedom.

In the eighties, SF authors articulated an Orwellian scenario, in which technology is widely used by the elites to control the masses. They predicted the passive acceptance of oppressive technocratic regimentation by cyberspace users, with the exceptions of hackers, rebels, and other types of dystopian heroes and heroines. Their scenario of technocratic dominance implied totally administered societies in which media and generalized bureaucratization applied intense conformist pressures to tendentially submissive individuals. Thus, the cyberpunk theory of technological power on individuals can be summarized as follows: in the hands of unscrupulous elites, technology disempower masses. Dystopian fiction reflected a society in which the principal social cleavage divides the hidden controller from those who are silently controlled. In turn, this theory of technological power rests on an idea of human nature that is easy to manipulate. Dystopian fiction envisioned specific forms of social organization in great detail because it accepted that individuals are products of the historical conditions in which they live. Thus, in a cyberpunk context, human nature is related to the historical conditions in which it emerged. Human beings depend on circumstances that appear to be natural and immutable but are instead the creation of social orders and of those who control them. Not surprisingly, the anti-heroes and heroines of the cyberpunk genre usually begin their journey after discovering a reality that remains concealed to the masses.

At the very beginning of *True Names*, the narrator tells a story. The story is intentionally vague, not historical; still, it incorporates elements of historical truth: in a primeval time, an Age of Magic, "the prudent sorcerer regarded his own true name as his most valued possession" (p. 241). Unfortunately, the prudent sorcerer's true name was "also the greatest threat to his continued good health" (p. 241), for to know the real name of the sorcerer equates to controlling him. In those days, in fact, when a person knew someone's true name, that person then had power over that someone and/or over his power. Thus, in order to keep their power, sorcerers and sorceresses needed to keep their true name secret. Hence, knowing and therefore speaking aloud a sorcerer's or sorceress's true name could snuff out his/her magical power. All the magic users of the past were referred to by pseudonyms, and many went to great lengths to protect their true name and to eventually kill anyone who knew their original names. The name, the true name, reveals what is hidden, that is, the supernatural component, the spirit, the soul.

In *True Names*, Vinge recognizes that the end of the Age of Magic brought the dual system of naming, that is, the pseudonym, the identifier, and the true name, which manifests the mystery that is hidden in each and every person, to an end. The nature of human being has been deprived of its supernatural component. Accordingly, the original notion that an intrinsic relation exists between the true name and the true nature of somebody has been dismissed. Names do not need to be kept secret because there is no hidden soul within the body to protect. Somebody's name is no longer the sign of

somebody's true nature and the pointer toward such a true nature. The name is simply an identifier, a symbol that establishes the identity of the human being who is bearing it.

This is not the end of the story, though. The time is coming, Vinge states, when the primordial relationship between true name and true nature is somehow re-established. It is the time in which *True Names* begins. In that time, the Age of Cyberspace (although Vinge does not name it this way), the sorcerer has been replaced by the hacker. In that age, the visible side of the human being is now the virtual, the artificial, while the invisible side of the human being is the material, the natural. In a surprising change of perspective, in the Age of Cyberspace what is hidden is no longer the spiritual, the immaterial, but the body; and what is manifested is no longer the body but the digital persona (people's virtual selves). This change of perspective has to do with a dystopian scenario of police state and controlling corporations, where technology is as invasive and dangerous for ordinary citizens. Vinge feared total transparency: by keeping their true name secret, hackers protect themselves from government.

In *True Names*, the government is the hacker-hunter: by learning a fellow hacker's real-world name (i.e., his true name), government associates could take control of the hacker's life and ultimately turn him into the government, or otherwise force him to work against his own interests and on behalf of the government instead. Ultimately, Vinge's point is that to know a hacker's name conveys to the hacker-hunter a kind of power that could be considered analogous to the kind of power exercised by the sorcerer's/sorceress's hunter in the Age of Magic. He recalled in a later interview that while reading Ursula LeGuin's *Earthsea* fantasy stories, he realized how important true names are. Then Vinge argued: "That gave me the notion that if everything had a serial number, knowing the serial number would be power" (Yonck, 2008). Thus, everything, including true names, had a serial number. The names could serve as identifiers, connecting otherwise disparate information within a database. Whoever had access to a true-names database would have power over the people behind those true names.

Here, a distinct view of human nature is in place: the human being is no longer a mix of soul and body but a mix of artificial and natural, a digital persona and its body (and vice versa). The true name is the name of the persona, the material side of the human being; the digital persona (or *avatar*, or 'individual's data shadow,' or *alter ego*, or 'digital individual,' or 'virtual identity') has no name. While in the Age of Magic, the key-relation was between true name and true nature, in the Age of Cyberspace it is that between true name and true life. The sorcerer-hunter was looking for the supernatural forces hidden in the very core of the sorcerer, the hacker-hunter counts on the very life of the hacker. To protect the true name (the real name, the name of the physical persona) is to protect his life from the hacker-hunter's purposes. What remains unchanged is the value of the true name and the prudent management of it. Paraphrasing Vinge's remark, the prudent hacker regards his own true name as his most valued possession. The avatar's pseudonym is left open to investigation and vulnerable because it has no value; the true name of the person is protected, it is where the value is.

True Nyms

In the eighties, electric engineer and techno-political writer Timothy C. May (b. 1951) read the novella *True Names*. In those days, May was an engineer at Intel, in Santa Clara. He had already reached fame in the small yet prestigious community of electronic engineers and scientists in Silicon Valley by solving a complicated problem (the 'alpha particles' problem) affecting the reliability of integrated circuits (May and Woods, 1978; May and Wood, 1979). In his early thirties at that time, May was planning to exercise his stock options at Intel and then retire at 35. His mind was increasingly filled

with questions beyond chips and software: he was interested in the future of the politics in a technological world. He was an avid reader of science fiction (SF), with a preference for dystopian writers like William Gibson, Bruce Sterling, and Orson Scott Card. Vinge's *True Names*, in particular, captured his imagination.

May would later recognize the profound impact of Vinge's *True Names* on his own thought. However, his interpretation of technology was nuanced: on one side, technology is a disempowering force as it transfers power from ordinary citizens to surveillance states, from masses to elites. On the other side, technology is the ultimate empowering remedy, as it provides the way for ordinary citizens to escape surveillance states' control. In the end, it is the latter, i.e., the liberating, unstoppable power of technology to deliver freedom to masses that matters. In the nineties, May extrapolated the basic idea of *True Names*, a group of hackers protecting their real-world names, and scaled it into a political project of social organization. He was the co-founder of the cypherpunk movement, active mostly in the San Francisco (SF) Bay Area. May was one of these visionaries who advocated widespread use of strong cryptography and private-enhancing technologies to achieve privacy in cyberspace. An activist who identifies him/herself with the dystopian assumptions promoted by the cyberpunk genre but adds an unshakable faith in cryptography is called a 'cypherpunk.' May and his colleagues understood the rise of technology as a liberating factor, an opportunity for masses to escape the control exercised by elites. In theirs view, technology would decompose the technocratic order and lead to a level of autonomy unprecedented even by standards of modern democracy. Power to the people would enable them to be free and to build their own social order. May and his colleagues envisioned the rise of encrypted technologies and an online world of virtual communities managed by their members' virtual identities (their True Nyms).

In turn, their theory of technological power rests on an idea of human nature that is ready to be empowered. Cypherpunk activists did not necessarily present to their readers a complete theory of human nature; yet, it is possible to deduct from their writings their perspectives on this matter. They favored a libertarian idea of rational, autonomous, strong individuals as opposed to the dystopian notion of the accommodating and acquiescent individual. More importantly, they were comfortable with a model of absolute individual identity that characterized libertarianism and its notion of individuals' subjectivity. It was thought that if increased sameness and uniformity of society is forced on individuals and prevents them from being free, this would force the individuals to challenge the societal order.

The Problem of Government

In his article "True Nyms and Crypto Anarchy," written in 1996 but published five years later, May frames the profile of the hacker-hunter: the government. However, May does not interpret government as simply a hacker-hunter, but rather as a name-producer. In May's words,

> The controversy over naming and under what circumstances true names can be demanded is likely to rage for decades. Why do we so often accept the notion that governments issue us our names and our identity and that governments must ensure that names are true names? Government like to be involved in identity issue because it gives them additional control (2001a: 42-43)

In May's view, to issue a name equals having control over the person who corresponds to that name. At this point, he reiterates his point by quoting Nietzsche: "the master's right of naming goes so far that it accurate to say that language itself is the expression of the power of the master" (2001a:43). Mays explains that naming is part of a much larger project, i.e., language. He returns to Nietzsche, who claimed that language shapes both knowledge about reality and reality itself, and bounds our thought,

understanding, and behavior within the reality it constructs (2001a:43). People take their language to express truths and the words of our language to be the sound-forms of concepts 'out there in the world.' Yet, in using language to talk about reality, people are deceived by cognition, deceived by their own invention (i.e., cognition). There is no single truth, no concepts independent of language, no one reality outside of people that causes their cognitive activity. With that said, who controls language also controls reality, and subjects (i.e., people) in it. People's reality is the reality as their language presents it to them. By naming, government places people into a reality that is issued and controlled by government. Thus, language is not an expression of truth; on the contrary, who controls language also produces truth.

May recognizes the potentially invading character of a surveillant technological model of governance but believes that by reframing pseudonyms (or nyms) as 'true nyms' he can solve the problem. May explains that, for some hackers in the San Francisco Bay Area, pseudonyms are real names. To put it differently, hackers operate as if their pseudonyms were their true names; this brings May to title his article "True Nyms," a contraction of (pseudo)nyms. In his view, pseudonyms become true nyms as soon as they are forged not by government, but rather by their owners. In his words,

> Digital pseudonyms, the creation of persistent network personas that cannot be forged by others and yet are unlinkable to the 'true names' of their owners, are finding major users in … providing for economic transactions that cannot be blocked by local governments (2001a: 44).

It is evident that, in May's opinion, nyms are not simply a way of concealing somebody's true name, but they are true nyms, that is, digital identities that have their own life and build their own reputation in the cyberspace. In summary, May articulates a complex view of cyberspace as both a means for state surveillance and a vehicle for economic emancipation. This view, at the same time dystopian and utopian, complicates the interpretation of his view of cyberspace. In this context, May reframes pseudonyms (or nyms) as 'true nyms.'

The Remedy: Crypto Anarchy

Already retired from Intel, May wrote a piece entitled "True Nyms and Crypto Anarchy," which was included in a reprint of Vinge's novel (2001). In that piece, May explained the influence of Vinge's hackers, who keep secret their true identities, their true names, on his notion of 'Crypto Anarchy,' a crypto form of social organization. The first presentation of this term was in Mays' 1988 "Manifesto," successively revised and finally published in 1992 (May, 2001b). 'Crypto Anarchy' is a composed expression: the second element, 'anarchy,' stands for absence of a ruler telling other people what to do. In another paper, written in 1994, May established the identity between the Internet and anarchy: "The Net is an Anarchy" (2001b: 69). In his view, the Internet is unruled space, global in size, and unaffected by local governments and central authorities: "No single nation controls the Net, no administrative body sets policy" (2001b: 69). He continued by noting that "anarchy does not mean complete freedom … but it does mean freedom from external coercion" (2001:69). Thus, anarchy does not refer to no-government, but rather to a non-centralized form of government. In such a decentralized form of government, individuals pursue voluntary, uncoerced economic transactions. The first element of the composed expression Crypto Anarchy stands for 'hidden.' Cryptography, in fact, is the art of secret communication. Encryption is the process of encoding a message in such a way that only authorized parties can access it. Encryption has traditionally been reserved only to governments and large corporations. In the period between 1976 and 1978, however, public-key encryption was invented, which gave individuals access to secret communication. Public-key encryption was revolutionary

because it combines the public key, which can be freely distributed, and the private key, which must remain secret. It is their pairing that allows secret communication: in a public-key encryption system, in fact, the public key is used for encryption, while the private or secret key is used for decryption. Ultimately, encryption is about mathematical algorithms, and cryptography technologies are technologies that embody cryptography or encryption.

Digital Identity

A main point of May's article "True Nyms and Crypto Anarchy," is his idea of a digital persona, a digital identity that is an extension of the individual identity into the cyberspace, although it remains separate from the physical persona. In other words, from the subject's perspective, the digital persona is an extension into the online sphere of the same individual identity; from the other subjects' perspective, however, no connection can be established between the digital and the physical personae of the same individual. The separation between the digital persona and the physical persona protects the latter from government's screening and monitoring. The digital identity becomes an identity independent from the physical identity. Of course, a digital identity which does not require authentication, i.e., a digital identity which can be constructed and over which the individual has some level of control, presupposes a certain organization of the Internet. In other words, the ability to create a digital persona and the possibility to use it as a recognized, legitimate identity, presupposes a cyberspace working on non-authenticate digital personae. As a matter of fact, most of "True Nyms and Crypto Anarchy" is a description of a cyber landscape operating on the assumption of non-authenticate digital personae. In his article, in fact, May mentioned anonymous remailers, digital money, electronic commerce, and other tools and institutions of a potential Internet working on the assumption of self-determined, constructed digital identity over which the individual has some degree of control. Of course, government (or a "surveillance state," as May called it) can still profile the digital persona by the summation of any data available about an individual. But such summation does not refer to the individual and his real life, only his digital appearance and behavior.

The implicit assumptions of May's vision of the cyberspace are: first, the cyberspace is a network in which individuals communicate with others, particularly by addressing electronic messages to one another and by exchanging information and trading with other, previously unknown, people. Second, cyberspace is a world in which surveillance, profiling, and monitoring are activities much easier pursued by government than in the real world. For its very nature, the Internet makes trackability inevitable. Internet, in fact, is a data-intensive environment. Third, in such an environment, individuals construct their own digital persona. The digital persona is a construct, i.e., a rich cluster of data: over a period of time, the cumulative effect of these data results in the development of something which approximates a 'personality'. It is a restricted form of personality, however, because it has no connection with the physical persona of the individual or with his life. Nevertheless, the digital persona has its own consistency (which approximates a personality), and its own life, and the pseudonym refers to a digital persona built over time. In short, individuals live two lives with two unrelated and unrelatable names and personalities. Fourth, a form of anarchy is possible in the Internet not simple *per se*, i.e., because the Internet is a network, but more precisely because of the widespread availability of various technologies (such as public key cryptography), and related technologies like anonymous remailers and electronic cash make certain anarchist ideals possible, if not inevitable. Fifth, the pillar of this intellectual construction is an 'active' (contrary to 'passive') digital identity, an identity that is not constructed by others by collecting data on the individual's digital persona, but rather actively built by the individual through the constant operating of his digital persona. Of course, the digital persona is a social agent and, as such, limited by the rules of the digital society (in May's words, 'virtual

communities'): credibility, trade, communication. These are important issues, but they are issues about the emergence of new governance structures within the Internet. They are issues about a self-governing community of individuals adopting pseudonyms to exchange information and trade. They are not issues related to current governance structures and their efforts to establish legal sovereignty and administrative control over the Internet. In other words, as a social agent, the digital persona is limited by the rules of the digital society, but such a digital society should be rather based on Crypto Anarchy, not an authoritative state or a surveillance government. In the same years May was articulating his idea of Crypto Anarchy, John Perry Barlow (a former member of the Grateful Dead and cofounder of the Electronic Frontier Foundation) was proposing his "Declaration of the Independence of Cyberspace," a provocative claim that the traditional nation states have no legitimate authority over cyberspace (Barlow, 2001). This is not May's claim: he never aimed to leave America for a sovereign cyberstate (May, 2016). He rather envisioned a parallel order in which self-governed communities of individuals hidden behind pseudonyms could organize their social and economic life without outside, centralized interference. The same individuals remained citizens of their states as far as their life is concerned. To put it differently, May's vision embodied both the notion that the identities individuals construct online are just as important—indeed, just as real—as the ones that they have constructed in the so-called real world, and the idea that the real world cannot extend its institutions online.

The sixth assumption of May's vision of the cyberspace helps to clarify this last point: digital persona and physical persona, digital identity and body, virtual life and real life, are separated. The individual has his true name, a name referring to his personal identity, which is also his public identity since it is legitimated by the state; the individual also has his true nym, a nym that is not a casual, temporary pseudonym but a name referring to his identity within the cyberspace. The two identities belong to the same individual, and therefore there is something of each identity in both his digital and physical persona. The point is, however, that only the individual knows the two identities belong to the same individual. The government monitors the individual's behavior in the cyberspace and in real life but cannot connect between the two. More importantly, the government can monitor the individual more strictly in the cyberspace because of the nature of it, but government cannot apply this knowledge to control the individual's real life.

In summary, cryptography and active digital identity, an identity that it is actively built and managed, are the key-elements of Crypto Anarchy, a decentralized, non-authoritarian form of social organization. May and other members of the cypherpunk movement believed that cryptography has the potential to undermine the government's concentrations of power and allow individuals to take on substantially more individual responsibility. They looked at individuals as social agents, that is, individuals with the capacity to act independently and to make their own free choices, despite authoritarian structures of surveillance.

The Future of Identity

True Names is about computer hackers who meet regularly in an open-ended on-line game called The Other Plane. The hackers must keep their real-world identities hidden, like sorcerers and sorceresses, both to avoid detection by law enforcement ('the Great Enemy'), and to protect themselves from being hacked or blackmailed by others in the game. To put it differently, these individuals have great power as hackers in the cyberspace, while having little to no power in the real world. Yet, their most valuable treasure is their real-world name. If the government can find out the real name of one of these sorcerers (or sorceresses), then the government can control their real life. May and his fellow

cypherpunks were called hackers, too (Levy, 1984 (1996). Most of them, however, did not hide their real-world identity and did not navigate the Internet with their pseudonyms. May, for example, signed his posts on the cypherpunk electronic mailing list with his true name. Another famous cypherpunk activist, Julian Assange (he joined the group in 1994), used his real-world name since the beginning. However, they were among the firsts not only to understand the power of computer networks but also to paint elaborate scenarios about their effects on individuals. May and his fellow hackers could imagine extensions and elaborations on reality that weren't provable, of course, but that were consistent with the insights from *True Names*. Of course, they anticipated the public spread of cryptographic knowledge, as opposed to it remaining a privilege of governments and companies. And this vision was about to inspire an entire set of ideas — some realistic, some utopian — that would come to shape the 21st century, including Bitcoin, the cryptocurrency.

These hackers also predicted the extension of individual liberty online. Liberty here is understood as self-governance, that is, individuals are able to act and express themselves as they choose with non-interference from governments. May and his fellow cypherpunks expressed a political vision of liberation through technology, so that crypto-technologies in the hands of ordinary people was liberating from state power and enabling the formation of self-regulated communities. To put it differently, in May's opinion, technologies would empower individuals in the cyberspace, that is, in the Internet's decentralized, global, anonymous space. In such as space, individuals would be finally free— free of government and free to exchange information and trade goods, without a third, centralized party. Political scholar Lincoln Dahlberg summarizes the situation this way:

> This partiality toward libertarianism was strong among hackers identifying as cypherpunk and crypto-anarchist, whose ideas had become popular among hackers in the late 1980s, and posited that individual freedom, particularly from state interference, was dependent upon privacy, and that cryptographic technologies would ensure online privacy and thus liberty. Many other liberty-oriented hackers and hacker groups not immediately identifying as cypherpunk and crypto-anarchist also deployed cryptographic techniques to safeguard privacy and thus individual freedom (Dahlberg, 2017).

But these cyberlibertarian hackers did not try to secure liberty for themselves; rather, their practices aimed at securing liberty for everybody. Cyberlibertarian hackers, particularly those influenced by cypherpunk and crypto-anarchism, insisted not only that technology would bring freedom, but also that individuals have a natural propensity for autonomy. Once they are free from regulation and constraints, cyberspace will reach order spontaneously, out of the actions of thousands or millions of individuals who coordinate their actions with others in order to achieve their purposes.

Cypherpunks assimilated from *True Names* the fundamental concept that individuals' true names should be kept hidden (and this is what cryptography is for); they also replaced Vinge's original idea of the small group of hackers playing a virtual game with a grandiose vision of a 'digital frontier' (inspired as they were by their libertarianism). No longer a limited group of hackers, as in *True Names*, but rather everybody, all citizens would be tentatively and proactively involved in creating and managing true nyms, permanent digital identities, on the Internet. It is through their alternative personas that millions of individuals would build free markets, operate self-regulated communities, and enjoy uncensored communication online. May's unbelievably fertile perspective was born out of his adaptation of the ethos of *True Names* to the circumstances of the present. He agreed with Vinge that the time was coming when the sorcerer would have been replaced by the hacker. However, May also identified the hacker with everyone. In the cypherpunk narrative, the prudent individual regards his own name as his most valued possession, just like in *True Names* the prudent hacker regards his own true

name as his most valued possession. The digital pseudonym is left open to investigation because it has no value.

May's vision of millions of individuals navigating the Internet, using true nyms while keeping their true names secret, has not materialized. In 1990, Internet activists John Gilmore, John Perry Barlow, and Mitch Kapor set up the Electronic Frontier Foundation (EFF) in San Francisco, California, with the aim of defending online civil liberties. The EFF was successful in protecting online civil rights like free speech and privacy online as well as limiting the harassment and arrest of freedom-focused hackers who were developing and distributing, or simply publishing the code of, encryption software. Moreover, the cypherpunk's warning about surveillance government overseeing and regulating digital communications proved true after the World Trade Center attacks of September 11, 2001, and subsequent legislation designed to limit privacy and free-speech rights. But the expected spread of cryptographic technologies ensuring online privacy and diffusion of true nyms failed to materialize. Even before that, the lack of interest in cyberlibertarian concerns in online public spheres was evident. In the same decade in which May and other liberty-oriented hackers continued to theorize and actively promote the spread of crypto-technologies enabling the formation of self-organized communities free from state control, the rapid uptake of the Internet by businesses took place.

In his "Manifesto," May envisioned the possibility of total anonymity for all:

> Computer technology is on the verge of providing the ability for individuals and groups to communicate and interact with each other in a totally anonymous manner. Two persons may exchange messages, conduct business, and negotiate electronic contracts without ever knowing the True Name, or legal identity, of the other. Interactions over networks will be untraceable, via extensive re-routing of encrypted packets and tamper-proof boxes which implement cryptographic protocols with nearly perfect assurance against any tampering (May, 2001b, 61).

In writing his manifesto, May used capital letters in honor of his favorite science fiction author. His prediction has proved to be prescient in many respects. In his "Crypto Anarchy and Virtual Communities" paper, May identified electronic money protected by cryptographic technologies as the critical element in the realization of digitally enabled free markets (2001c: 66). In 2009, Bitcoin—the first and by far the most popular of many cryptocurrencies—was released, based on open-source software that facilitated secure, difficult-to-trace, and disintermediated user transactions over time and space. Once it was launched, libertarians across the board, and particularly those identifying as cypherpunk and crypto-anarchist, celebrated Bitcoin as the ultimate cryptographic technology that would ensure online privacy and liberty of trade. They finally saw much more energy put into fostering an all-Bitcoin uncontrolled economy to escape the claws of the establishment than in making Bitcoin compliant with governments' and banks' rules. But Internet users had, a long time ago, already surrendered their True Names to governments and corporations. The current tendency is rather one toward classified mass surveillance programs in North America and globally over unsuspecting citizens, who show little interest in a conversation about national security and individual privacy.

In the first pages of his essay "True Nyms and Crypto Anarchy," May made a carefully drafted assessment:

> The full-blown, immersive virtual reality of 'True Names' may still be far off, but the technologies of cryptography, digital signatures, remailers, message pools, and data havens make many of the most important aspects of 'True Names' realizable today, now, on the Net. Mr. Slippery is already here and, as Vernor [Vinge] predicted, the Feds are already trying to track him down (2001a: 36).

He was right on both sides of the analysis: the immersive reality of *True Names* was still far off (he wrote the paper in 1996), and the Feds (and the other government's agencies and corporate databases)

were actually busy tracking down a real-world Mr. Slippery. But the analysis did not tell the whole story. In fact, Mr. Slippery was not the progenitor of an army of Internet users skilled in, and motivated to, maintaining their real-world name hidden, but rather the specimen of an endangered breed. The libertarian theory of human nature, that is, rational, autonomous, strong individuals who are committed to individualism, fell short in the task of representing the reality of online users. It was not sufficient to refrain governments from imposing on their citizens any particular ideal to ignite in everybody the liberty-right to pursue their own individual happiness in the Internet. The real problem is the individual himself, so vulnerable to the power of science and technology. True names do not need to be kept secret because there is nothing precious to hide beyond the digital persona. The name is simply an identifier, a symbol that establishes the identity of the human being who is bearing it, and apparently individuals are fine with that. They are fine to allow their true names to become part of the systematic use of personal data in the investigation or monitoring not only of online communications among individuals, but also their lives.

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