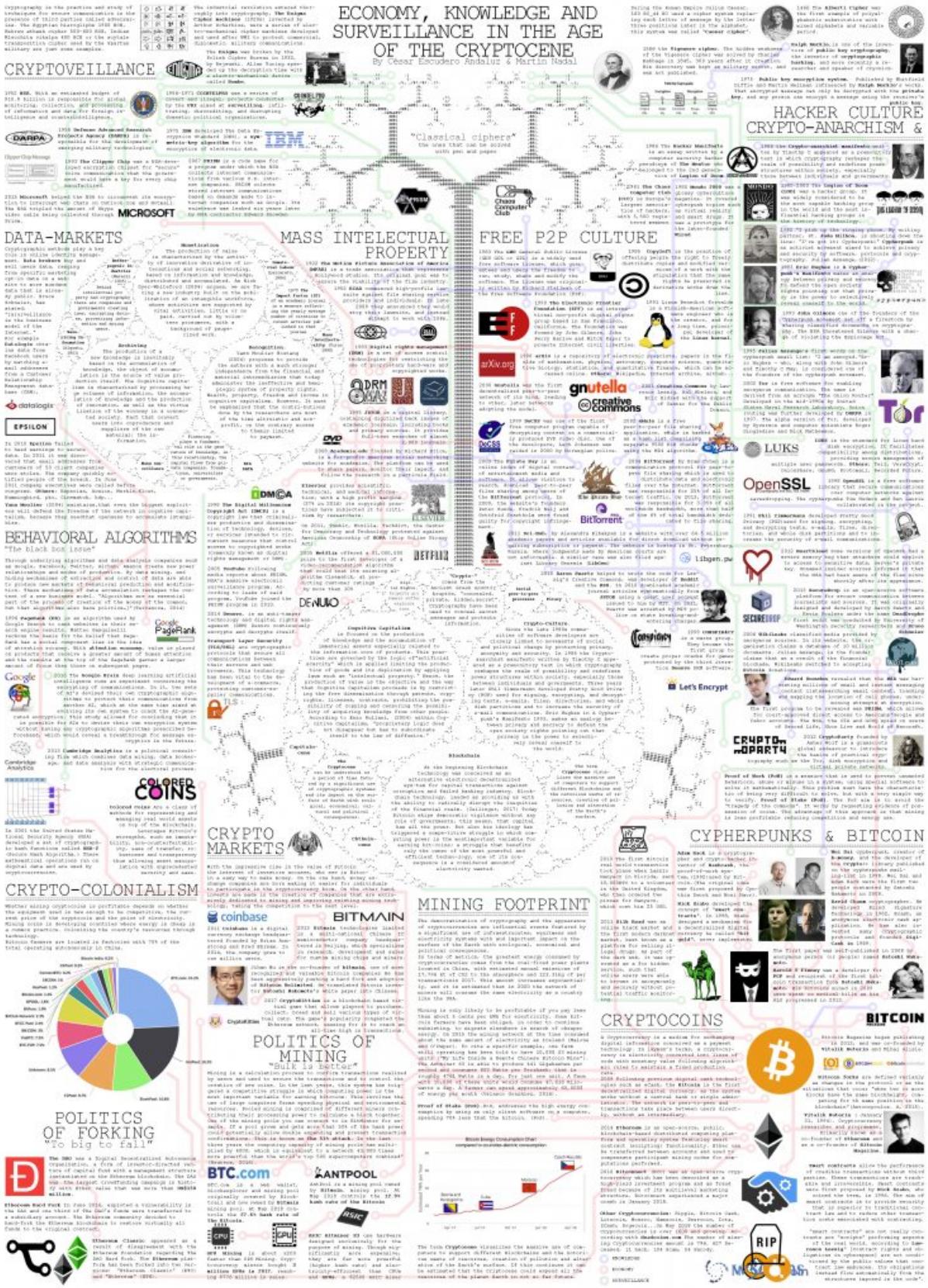
Economy, Knowledge and Surveillance in the Age of the Cryptocene

César Escudero Andaluz & **Martín Nadal**, artist-researchers


ECONOMY, KNOWLEDGE AND SURVEILLANCE IN THE AGE OF THE CRYPTOCENE
By Cèsar Escudero Andaluz & Martin Nadal
CRYPTOVEILLANCE
DATA-MARKETS
MASS INTELECTUAL PROPERTY
FREE P2P CULTURE
HACKER CULTURE CRYPTO-ANARCHISM &
BEHAVIORAL ALGORITHMS
"The black box issue"
CRYPTO MARKETS
CRYPTO-COLONIALISM
MINING FOOTPRINT
CYPHERPUNKS & BITCOIN
CRYPTOCOINS
POLITICS OF MINING
"Bull or bear"
POLITICS OF FORKING
"To big to fail"
"Classical ciphers"
the ones that can be solved with pen and paper
Chaos Computer Club
MICROSOFT
IBM
DARPA
BitTorrent
gnutella
creative commons
OpenSSL
LUKS
Tor
Let's Encrypt
CRYPTO ANARCHY
BITMAIN
coinbase
BTC.com
ANTPOOL
BITCOIN
RIP

DOWNLOAD Diagram_Cryptocene.pdf [7.2MB].

Nowadays, knowledge has been placed at the service of production, describing a new expression of power generated by the accumulation of information in the networked world. This historical context of relations between intellectual property, piracy, consumption goods and homogeneity of money is counterbalanced by cultural movements and communities defending the open society, proposing free access to information and speculating with non-monetary futures.

Cognitive Capitalism

Following the earlier phases of mercantile and industrial capitalism, this phase of capitalism has been named "Cognitive Capitalism". Associated practices are focused on processing huge volumes of information, the accumulation of knowledge and the virtualization of the economy in a connected society.[1] These facts convert users into co-producers and suppliers of the raw material: the information. Moreover, in Cognitive Capitalism the production of value is the objective, and the way that proceeds is by restricting the free dissemination of information through patents, copyrights, licenses, contracts, prohibiting the possibility of copying and censoring the possibility of acquiring knowledge from other people, applied by limiting the production of goods and its duplication and by laws such as "intellectual property."[2]

Open Sources Communities

Consequently, this attempt to privatize the common and to transforms knowledge into goods collides with the incessant non-profit activity of communities of Open Software Developers, researchers and artists. Since the late 1980s[3] these communities are closely linked to movements of social and political change by protecting privacy, anonymity and security. In 1988 the Crypto-anarchist Manifesto written by Timothy C, appeared as a premonitory text in which cryptography reshapes the realm of possibility and redefines power structures within society, especially those between individuals and governments. Three years later Phil Zimmermann developed Pretty Good Privacy (PGP) used for signing, encrypting, and decrypting texts, e-mails, files, directories, and whole disk partitions increasing the security of e-mail communications. Eric Hughes in A Cypherpunk's Manifesto (1993), makes an analogy between privacy and secrecy to defend the open society rights, pointing out that privacy is the power to selectively reveal oneself to the world.[4]

According to Maurizio Lazzarato, "Perhaps for the first time in the history of humanity, artistic work, intellectual work and economic work on the one hand, and consumption goods, appropriation of knowledge and values-beauty, on the other, demand to be regulated by the same ethics." However, behind intellectual property and cryptography there are companies and governments creating laws, encrypting devices, privatizing information and spying on users. This new paradigm directly influences the concept of culture and its modes of production, socialization and appropriation. In agreement with Olivier Blondeau (2004), this

informational capitalism has rejected solutions and embraces the automation of knowledge, destabilizes traditional pay structures, and assures an absolute dominion over immaterial merchandise. As Nick Dyer-Witheford (2004) argues, we are facing a new industry built on the mobilization of an intangible workforce, whose activities are supported by vital activities, with little or no pay, carried out by volunteer prosumers, against a background of pauperized work.

Cryptocene

In 2001 the United States National Security Agency (NSA) developed a set of cryptographic hash functions called SHA-2 (Secure Hash Algorithm.) These mathematical operations run on digital data and are used by some cryptocurrencies. The democratization of cryptography and the appearance of cryptocurrencies are probably the most influential events of what we have called the 'Cryptocene'. The Cryptocene can be understood as a period of time featured by a significant use of cryptographic systems and its impact on the surface of the Earth with ecological, economical and political consequences. The term Cryptocene visualizes the massive use of computers to support different Blockchains and the notorious waste of resources, creation of pollution, and alteration of the Earth's surface.[5] In terms of metrics, the greatest energy consumed by cryptocurrencies comes from the coal-fired power plants located in China, with estimated annual emissions of 17,796 kt of CO2 to the atmosphere and 123.31kg per transaction in 2017. This amount increases exponentially, and it is estimated that in 2020 the network of miners will consume the same electricity as a country like the USA. If this situation continues it can be estimated that the Cryptocene could consume all the resources of the planet Earth in the not so distant future.

Notes

[1] P2pfoundation.net, http://wiki.p2pfoundation.net/Cognitive_Capitalism.

[2] A key point in this struggle to maintain intellectual property, took place in Geneva, in December 1996. This was carried out to reduce the public domain, to reinforce its private appropriation and to break the balance between those who hold intellectual property rights and users. See Olivier Blondeau's Génesis y subversión del capitalismo informacional: Capitalismo cognitivo, propiedad intelectual y creación colectiva (2004).

[3] A further reference is when IBM developed The Data Encryption Standard (DES), a symmetric-key algorithm for the encryption of electronic data. In this moment cryptography focused on new algorithms and computers. It is what is known as "strong cryptography". In 1975, the American cryptographer Whitfield Diffie developed "public-key" cryptography.

[4] A 'cypherpunk' is an activist movement aimed to achieve privacy and security by software, protocols and cryptography. See Julian Assange's Cypherpunks: Freedom and the Future of the Internet (2012).

[5] The term Cryptocene could be conceptualized in the context of the environmental crisis. See Haraway's Anthropocene, Capitalocene, Plantationocene, Chthulucene (2016).

Works cited

Assange, Julian. Cypherpunks: Freedom and the Future of the Internet. New York: OR Books, 2012. Print.

Blondeau, Oliver. "Génesis y subversión del capitalismo informacional." Ed. Traficantes de Sueños. Capitalismo cognitivo, propiedad intelectual y creación colectiva. Madrid: Traficantes de Sueños, 2004, pp. 31-48. Print.

Boutang, Yann Moulier. "Riqueza, propiedad, libertad y renta en el capitalismo cognitivo." Ed. Traficantes de Sueños. Capitalismo cognitivo, propiedad intelectual y creación colectiva. Madrid: Traficantes de Sueños, 2004, pp. 107-128. Print.

Dyer-Witheford, Nick. "Sobre la contestación al capitalismo cognitivo. Composición de clase de la industria de los videojuegos y de los juegos de ordenador." Ed. Traficantes de Sueños. Capitalismo cognitivo, propiedad intelectual y creación colectiva. Madrid: Traficantes de Sueños, 2004, pp. 49-62. Print.

Gloerich, Inte, Geert Lovink, and Patricia de Vries, eds. "Overcoming the blockchain and cybercurrency hype: Introduction to MoneyLab Reader 2." MoneyLab Reader 2: Overcoming the Hype, Amsterdam: Institute of Network Cultures, 2018. Web. http://networkcultures.org/wp-content/uploads/2018/01/MONEYLABREADER2OVERCOMINGTHEHYPE.pdf. Accessed 14 Jun 2018.

Golumbia, David. The Politics of Bitcoin: Software as Right-Wing Extremism. Minneapolis: University of Minnesota Press, 2016. Print.

Haraway, Donna. "Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin." University of California, Santa Cruz, USA, 2016. Web. http://environmentalhumanities.org/arch/vol6/6.7.pdf. Accessed 14 Jun 2018.

Kahn, David. The Codebreakers: A Comprehensive History of Secret Communication from Ancient Times to the Internet, Revised and Updated. New York: Scribner, 1996. Print.

Lazzarato, Maurizio. "Tradición cultural europea y nuevas formas de producción y transmisión del saber." Ed. Traficantes de Sueños. Capitalismo cognitivo, propiedad intelectual y creación colectiva. Madrid: Traficantes de Sueños, 2004, pp. 129-146. Print.

Nadal, Martín & César Escudero Andaluz. “Critical Mining: Blockchain and Bitcoin in Contemporary Art”. Eds. Ruth Catlow, Marc Garrett, Nathan Jones, and Sam Skinner. Artists Re:Thinking the Blockchain. London: Torque Editions & Furtherfield. 2017, pp. 73-84. Print.

O’Dwyer, Rachel. “Does Culture Want to be Free? How Blockchains are Transforming the Economy of Cultural Goods.” Eds. Ruth Catlow, Marc Garrett, Nathan Jones, and Sam Skinner. Artists Re:Thinking the Blockchain. London: Torque Editions & Furtherfield, 2017, pp. 297-308. Print.

P2pfoundation.net. Web. http://wiki.p2pfoundation.net/Cognitive_Capitalism. Accessed 14 Jun 2018. Web.

Rullani, Enzo. “El capitalismo cognitivo: ¿Un déjà-vu?” Ed. Traficantes de Sueños. Capitalismo cognitivo, propiedad intelectual y creación colectiva. Madrid: Traficantes de Sueños, 2004, pp. 99-106. Print.

Zeilinger, Martin. “Everything You’ve Always Wanted to Know About the Blockchain*(*But Were Afraid to Ask Mel Ramsdem)”. Eds. Ruth Catlow, Marc Garrett, Nathan Jones, and Sam Skinner. Artists Re:Thinking the Blockchain. London: Torque Editions & Furtherfield, 2017, pp. 287-296. Print.