The hacker ethic, openness, and sustainability

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Sustainability is a normative concept, building on ideas such as justice, equity and responsibility, and based on human culture and society [14]. Computers and internet and the technologies that are central in our current societal paradigm of informationalism [23] are not value-free neither. They embed normative values and a culture that can be understood both from the historical origins of the technology and the current community around it. But the work looking at computer technology and sustainability has been oriented towards practical applications for solving practical problems, and it has overlooked the more normative and ethical perspectives. The research have focused either at understanding the negative direct impacts of hardware such as energy use of internet and the generation of e-waste [1,2], or at the applications of using the technologies with a sustainability purpose, such as increasing the efficiency of systems and increasing dematerialization or triggering behavioral change [3,4]. Computers and internet are treated either as a system to be understood, or as tools that can be used for some purpose.

The set of values that has been central to the development of the personal computer as we know it is the hacker ethic. Being a hacker, is being someone that "program enthusiastically" and who believe that computing and information sharing is a positive good", and that it is their ethical duty to facilitate access [5]. This is not to be confused with the use of the term in media and popular culture, where it is used mostly connected to cybercriminals, computer experts that steal credit card numbers and break in security systems [6]. The hacker ethic originated at MIT and developed in academia during the second half of the nineteenth century (See Levy's historical account [7] and Raymond's brief history of hackerdom [8]), and it contains a set of values and norm that were embodied in their work [9]:

1. Hands on imperative: Access to computers should be unlimited and total.
2. All information should be free.
3. Mistrust Authority, promote decentralization.

4. Hackers should be judged by their hacking, not by "bogus" criteria such as degrees, age or race.
5. You can create art and beauty on a computer.
6. Computers can change your life (and the world) for the better.

The hacker ethic is present in many of the information technologies we use today, especially internet, which has the hacker ethic values at its core, and the technologies and services around it. Open source software such as Linux, Firefox or Android is used by millions of users and have been demonstrated to be a successful model based on intrinsic motivation [10]. The openness of information for instance in the use of creative commons licenses and open data is also becoming widely accepted. As example the online photo service Flickr hosts now more than 200 million creative common licensed pictures [11]. During the last years there has been a renascence of the term hack, using hack and hacker in the sense of sharing information, tweaking, hands-on change, being used not only to computer related activities, but also to things as personal development, furniture or gardening. These communities may not hack in the traditional perspective, but they share the principles of openness and creativity of the hacker ethic. The hacker ethic as defined by the jargon file [9], its master document, does not only not exclude, but welcomes any kind of non computer activity as part of the hacker community, "An expert or enthusiast of any kind".

Pekka Himmanen, in his book "The hacker ethic" [12], argues that the hacker values represents a different work ethic that challenges the dominant protestant work ethic. Himanen discusses the current dominance of the protestant ethic as defined by Weber [13], tracing its origin to the monastery. In this ethic, work is seen as a duty that must be done for itself, the purpose of the work is not to get something done, but "to humble the worker's soul by making what he is told". Some of the defining characteristics are the emergence of the clock and fixed hours as control, money is the main motive, being busy is a status symbol and playfulness being removed from work. This protestant ethic is now secular and central in the capitalist system. The book defines the hacker work ethic in opposition to the protestant ethic, pointing the origins to the academia. The defining characteristics is having plenty of time (skhole), being able to organize one's time oneself, the main motivation is not money, but passion. Not working for work's sake but for creating something valuable together. For good, for kudos, for fun. This work ethic does not oppose work, as Himanen presents the pre-protestant work ethic that was

leisure-centric, but abandons the duality work/leisure, again focusing the motivation around passion. Openness of information is presented by Himanen as a key concept for the hacker ethic, again connecting the academia as a role model. Other important concepts being freedom of speech, privacy, passion and creativity.

While many of the sustainability problems are practical, such as reducing carbon dioxide emissions or pollution, sustainability in itself is a normative concept based on values. Sustainability is about justice, intergenerational and intragenerational and about how we want society to be for us humans [14]. Sustainability is not only about technological fixes, but it needs a broader change of how we do things, how and why we work, how we deal with knowledge and how we innovate. The hacker ethic provides an alternative work ethic, challenging the status quo, can be an important contribution to sustainability. Openness and a hands-on approach are the main two concepts that can be argued to be the most relevant for sustainability.

Openness of information lays in the core of the hacker ethic. Open source, open knowledge, open data, creative commons, have shown that there are alternatives ways of dealing with information based on creating and improving the commons, based on collaboration, in community. They have challenged the status quo of the existing business models and proven pragmatically also a more efficient way of working. Sustainability and problems such as climate change are the "wickedest" problem we have to deal with [15]. It will require society to collaborate, to create together new knowledge, new ways of doing things, we do not have the time to try to fight each other over trademarks [16]. We need open data about the state of the planet, we need transparency about emissions and the impact of products and industries, we need feedback, we need accountability. We need to export the open licenses to other areas key to a sustainable society, as the people from Architecture for Humanity are doing with architecture [17], as institutions as MIT and Harvard are doing with education [18], as people as Vandana Shiva are advocating for seeds and traditional knowledge [19].

Together with openness, the "Hands-on imperative" is central to the hacker ethic. This points both to the need to bring computers to the people, and to the focus on doing and working hands-on with the systems as a way of learning and demonstrating ideas. The access question is coming from a time where computer resources, even at institutions

like MIT, were scarce, highly regulated and bureaucratic, but it is still relevant to many places and social groups, where the access to technology and connectivity is still lacking. This hacker values of bringing computer to the masses can be seen in projects working to close the digital divide, such as the OLPC [20].

The imperative of working hands-on is still one of the central ones of the hacker ethic, hackers focuses on results over ideas. Do you have a good idea? get your fingers moving and code it. Do you want to defend open source? Shut up and show them the code [21]. Get excited and make things [22], this philosophy is highly visible in hacker communities such as the maker culture, events as hackathons and code fests, but even in the way internet entrepreneurs and companies work.

In the hacker ethic there is also a belief that "computers can change your life (and the world) for the better". This belief is reinforced by the fast transformation achieved by computer technology during the last decades, making computers available to the masses, internet growing exponentially reaching billions of users and becoming a central part of how society communicates and mobile phones becoming the most widespread technological device in history. All these transformations are based on a practical approach, a belief that "the best way to predict the future is to invent it" [24]. This focus in doing things is very relevant to sustainability. We need to change how society works, we need to improve technology, we need to move from talking to doing.

Computers, internet, new technologies can play an important role in moving towards sustainability. I argue that their role goes beyond the technical applications and it is not limited to applications like increased efficiency or better communication. The new way of doing things embodied in the hacker ethic presents a challenge to the status quo. The values of passion and creativity, openness and sharing, the creation of commons, the community oriented thinking, the hand-on approach, should be important values for a sustainable society. We need to keep promoting these values, to keep showing how they can create a better society. We need to open up knowledge, to prototype and iterate towards sustainability. And we need to do it fast.

Acknowledgments

Footnotes

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[17] See: https://www.edx.org/

[18] For a short introduction see the video: Shiva V. Seeds of open source: http://www.youtube.com/watch?v=CfNCCJECpss For more information see for instance: Shiva, V. 2000. Stolen Harvest: The Hijacking of the Global Food Supply, South End Press, Cambridge Massachusetts.

[19] Example of trademark and intellectual propierty slowing sustainability can be found in cradle to cradle: http://www.fastcompany.com/blog/danielle-sacks/ad-verse-effect/william-mcdonough-must-change   and in the urban homesteading trademark controversy: http://sierrapermaculture.com/?p=255 and   https://www.eff.org/cases/petition-cancel-urban-homestead-trademark

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