

# HACKERSPACES: FROM ELECTRICAL TO CULTURAL RESISTANCE

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Hackerspaces are community-driven spaces where people gather to socialize, experiment, learn and develop projects with technology. Over the past four years, these spaces have seen a remarkable growth in number and visibility. In this paper, we examine how the practice of hackerspaces can be understood as a form of cultural resistance by analyzing some views and attitudes towards the economy, education, society and politics.

## Introduction

The purpose of this paper is to contribute to the study of this global movement of spaces and communities around the globe where people create and experiment with technology, known as hackerspaces. It is a phenomenon that in recent years has shown a considerable expansion. Despite that fact, hackerspaces are still largely underresearched.

Our research interest grew out of the field work we've been doing in Audiência Zero. Audiência Zero is a Portuguese cultural organization responsible for a network of spaces of creation and experimentation with technology that in recent years has re-defined itself largely under the influence of the hackerspace model. Our ultimate interest is to investigate the actual and potential impacts of the hackerspace movement in the social, political, economic and cultural spheres.

Mitch Altman, founder of NoiseBridge, once said, in passing, that the future of everything is on the hackerspace. A highly colored statement of course, but the idea that the hackerspace is an innovative and dynamic concept with much to offer to society at large is something that we believe deserves attention.

Hackerspaces are local communities who share a global culture, and are a direct descendant of the hacker culture. Hackers manifest their culture through very specific practices and values. This hackerspace culture is in many ways, as we shall see, contrary to the cultural discourse of dominant political, social and economic structures.

Nevertheless, hackerspaces are not closed organizations, they are in permanent contact with society, always interested in showing what they do and explain why they do it. This form of relationship with the outside world, makes hackerspaces values and practices publicly known. This, in turn, might influence the way other people see, think and behave. This form of cultural resistance is what we are going to address in this paper.

## What is a Hackerspace?

Hackers are the first to point out that there aren't two hackerspaces alike (Schneeweisz 2009). The main reason for this has to do with the fact that hackerspaces are the direct product of the communities that

created them. Regular discussions about the definition of hackerspace have occurred in the community, but there isn't an agreed, compact definition of hackerspace so far (Moilanen 2010).

Nonetheless, we will provide a tentative definition of hackerspace, that we believe will suffice for the purpose of this paper. We will then elaborate a little on the definition in order to adequately explain the main elements.

For us a hackerspace is an open, community-driven space with shared resources, where people with common interests, learn, experiment and develop projects, through an organizational model based on peer-learning, collaboration and knowledge sharing.

A hackerspace needs a physical space for members to meet and work. Here is where the resources are located, where the activities take place. Usually these spaces are rented. The rent and all the operational costs are paid by members fees. Ideally members will have 24/7 access to the space which means that each member has to have a key.

Around the space a community settles and grows. The community is responsible for financing and managing the space and the resources, usually through elected bodies. This community is, in many cases, open, by which we mean: receptive to new members, organize activities in which non-members can participate and build ties with outside people and organizations.

The people who create the community around a hackerspace have common interests, that's why they gather, cooperate and maintain a hackerspace. The interests of these hackers can be quite varied, but fairly typical is the interest in technology, science and art.

Those interests determine the resources available in hackerspaces, but other factors are important too, like money and available space. Examples of shared resources that are commonly found in hackerspaces are: Internet access, electronic equipment, workshop tools and prototyping machines (3D printer, CNC).

The community exists because its members share resources and common interests which usually materialize in experiments and projects, this means hackerspaces are spaces of experimentation and development, not just socialization.

In the community there is a rooted practice of information sharing and collaboration. Members with different levels of knowledge and different backgrounds are available and willing to share what they know with others. This is one of the biggest selling points of hackerspaces, a community of people from various fields, with very good skills and available to help whenever necessary.

So these elements are very relevant to the definition of a hackerspace: space, community, common interests, resources, collaboration, creating, experimenting and sharing. Some of these elements relate to physical resources; other to the activities that occur there; and finally, to the values and practices embodied. This multidimensional reality is one of the reasons that make defining a hackerspace a difficult task. A hackerspace is not just a space for hackers, a hackerspace is the combination of all those elements.

## Hackerspaces and Hacker Culture

It is not uncommon to begin the history of hackerspaces in Germany in 1981 with the founding of Chaos Computer Club by Wau Holland or to try to find ancestors in the U.S. by referencing projects like the New Hack City, the L0pht and others (Schneeweisz 2009). Nonetheless, the first examples of hackerspaces as we now know them, were founded in the mid 90's in Germany, and these were the c-base in Berlin and C4 in Cologne.

These spaces, according to Nick Farr (2009), took a decisive step, they opened up to society, and started an open relationship that proved "...Hackers could be perfectly open about their work, organize officially, gain recognition from the government and respect from the public by living and applying the Hacker ethic in their efforts."

The novelty of spaces like C-base, C4 and the spaces they inspired, is their relationship with society at large and the public visibility and dissemination of hacker culture, which is, ultimately, the importance of the hackerspace (Farr 2009).

Hacker culture dates back to the fifties and sixties and over the decades has been evolving through different generations. Steven Levy (2010) in his book *Hackers: Heroes of the Computer Revolution* gives a detailed account of the birth of the hacker culture and its history. Levy is most famous for his formulation of the hacker ethic, a particularly important piece of hacker culture.

This hacker ethic among other aspects was based on freedom, access and circulation of information and knowledge, distrust of authority, promotion of decentralization and the belief that computers can create a better world (Levy 2010).

The recent history of hackerspaces has a pivotal development around 2007. In this year, dozens of American hackers made a visit to some German and Austrian hackerspaces, with the purpose of importing the hackerspace model to the U.S. This expedition resulted, ultimately, in the founding of some famous hackerspaces, including NoiseBridge (San Francisco), HacDC (Washington), NYC Resistor (New York) and to what Nick Farr (2009) calls the third wave of hackerspaces.

After that, the number of hackerspaces grew quickly and consistently considering the numbers available on hackerspaces.org, which is the most complete information source there is about the phenomenon. In the beginning of 2007 there were something like 30 to 40 hackerspaces, today, as of this writing, July 2011, there are 480 active hackerspaces all over the world, with special incidence in Europe and the USA (Hackerspaces.org 2011).

## Cultural Resistance

The most common conception of resistance in social theory is the emancipatory opposition to domination (Hoy 2005, 2). The word by itself can mean exactly the opposite too, it can mean, the resistance of domination to emancipatory efforts. In this sense resistance is just an opposition of a force to another (Hoy 2005, 2).

In the context of this paper we are using resistance in the first sense, the most common one, in the sense of opposition to domination. Furthermore, the resistance we address here is what can be called

cultural resistance and has been described by Stephen Duncombe (2002, 5) as “culture that is used, consciously or unconsciously, effectively or not, to resist and/or change the dominant political, economic and/or social structure.”

The issues we are about to describe and discuss, are examples of the way hackerspaces and, the hacker culture they represent, resist the dominant political, economic and social structure. Despite the fact of claiming political agnosticism (Schneeweisz 2009), hackerspaces influence the cultural discourse, by creating living spaces with a shared culture that is at odds with the dominant models. This act can be seen as a political act.

Cultural resistance, as Ducombe (2002, 6) remembers, can be thought of as political resistance, since cultural resistance is mainly a rewriting of a cultural discourse, “a shared set of symbols and meanings, that we all abide by”, which some argue is essentially what politics is.

In this section we will present some examples of shared values and common practices in the hacker-space movement. With this we'll try to show what exactly is this hackerspace culture and in what way it resists the dominant structures.

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## COMMUNITY

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As discussed previously, community is inherent in the concept of hackerspace. For us, as well as other authors (Moilanen 2010), hackerspaces act as a third space, a space that people go to as a place between home (first place) and work (second place). These third places serve to satisfy essential needs of socialization that are felt strongly and increasingly in contemporary societies (Oldenburg 1999).

This aspect of hackerspaces is one of the possible explanations for the success and expansion of the concept worldwide. Hackerspaces are like sanctuaries in a society that is losing the community reference. The importance of community is widely recognized in reports made by members of hackerspaces. Mitch Altman, for example, said, quoted by Dylan Tweney (2009), “in our society there's a real dearth of community (...) [at hackerspaces], people get a little taste of that community and they just want more.”

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## GIFT ECONOMY

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Underlying the concept of hackerspace we also have the concept of sharing. Sharing space, sharing tools, but most important knowledge, information and time. If we analyze the behavior of members in hackerspaces we see that there is a culture of sharing that underpins all the activity and goes beyond the members themselves, opening up to visitors and the outside world.

In hackerspaces skilled members share with the newcomers their knowledge so that they can pass the knowledge onto others, and so forth. This is done without any warranty or agreement that the person that helps will in the future be helped in return. This, however, does not paralyze the free exchange in hackerspaces. This economy works because there is confidence that others will do the right thing when the time comes.

Hackerspaces are an example of a gift economy, an economy where several goods and services, namely information, knowledge and time are transferred without an explicit specification about future rewards. This contrasts with both market and barter economies.

This gift giving practice goes beyond the immediate community, is how they relate to the world. Due to this, hackerspaces are especially found off open source and creative commons. What is not surprising since they are all gift economies and derive from the same culture.

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## MAKER SOCIETY

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We live in a consumer society where the need to buy new things is all around us. Companies carefully plan ways to encourage consumers to buy new products, even when the old ones are still fully functional, in what became known as planned obsolescence. Consumption patterns are increasingly part of the way people perceive themselves (Featherstone 2007).

But not so much in hackerspaces. Karin Kosina (2009) of Metalab, one of the most well-know European hackerspaces, says that Hackerspaces are saying to the world “Stop being a consumer! Start to be a creator!”

D.I.Y. (do-it-yourself) culture is deeply rooted in hackerspaces. Why buy something when you can make it? But many times the motivation to make something is not financial. As Karin Kosina (2009) states “there is an incredible joy in building something with your own hands, of saying, 'I made this', and unfortunately most people in our society today have forgotten it, have never had it, and we want to give this back to the world”. To make something instead of buying it gives the creator a sense of accomplishment, increased confidence and power.

At the same time open source digital fabrication projects, such as the RepRap or the Makerbot (born in NYC Resistor, and extremely popular in hackerspaces), which allow people to print real plastic objects based on designs they can make on a computer, changes the relationship between production and consumption.

To re-use old hardware is common in hackerspaces too. Hackerspaces receive and seek computers, controllers, synthesizers, electronic equipment, among other things, which individuals, businesses and universities no longer use. When the equipment is still functional, it can be used for their initial function, when they are impossible to fix, they are dismantled and become a source of raw material for new projects.

To re-use and re-purpose is crucial to have a working knowledge, it's necessary to understand how something really works. This need to know, this insatiable curiosity is crucial in defining what a hacker is, as Bre Pettis, founder of NYC Resistor, puts it, “...we break things to understand how they work, share whatever we've learned and make stuff with whatever we can find.” (Schneeweisz 2009).

It's necessary to keep in mind that hackers work primarily with technology, and that technology is one of the more important motors behind human development. About this, Jens Ohlig, famous for the Design Patterns for Hackerspaces, says "is a very radical thing to take technology and use it in a way that is utterly non-economic (...) take the thing that may shape our future out of the economic sphere and control it" (Schneeweisz 2009).

This perspective of re-use, of production for self consumption, of being aware of the importance of controlling the technologies that shape our future does not fit well with the capitalist system, and companies would like to keep people in the state of eternal and passive consumption. Their profits depend on it. That's why they create restrictions, such as seals, to prevent products from being opened, studied and improved. And hackers just hate that.

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## EDUCATION

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This is a field where hackerspaces are especially seen as innovative and as potential contributors to the discussion of future improvements. With the traditional model of education under attack, for not being able to teach what's necessary to succeed in the modern world, hackerspaces with their informal structure seem at least a good complement.

There are several ways people learn in hackerspaces, like workshops, lectures and presentations, but also by collaborating with each other and researching.

Hackerspaces present a learning model that is based on peer-learning and in project-based learning. Members of hackerspaces learn from each other in a horizontal format, where today one teaches and tomorrow one learns.

Also in hackerspaces people learn by doing, usually in a context of a project they want to do. This approach has a specific advantage because one does not only learn something, but learns how to learn.

To be in a place where knowledge is valued, where knowledge is applied, where people feel good about learning, sharing, collaborating, researching and making things is the most decisive factor in creating the right atmosphere for personal development.

With these examples, and more could be presented, what we tried to do was to show the contribution made by hackerspaces to the cultural discourse. These are just some of the issues and we can see that they apply to many fields.

There is a way of seeing the modern world that resists the dominant models. Many people are unaware of these alternative ways of thinking and doing. In hackerspaces there is a critical view of the economy, society, education, among other things.

We can say that, essentially, there is a understanding of what is to be human in the contemporary world. The hackers themselves are aware of this, Karin Kosina (2009) puts it this way "Hackerspaces are physical places for people to get together and tinker with technology, to learn new skills, to share their knowledge, to explore new ways of living together as a society. This is what being human is ultimately all about, creating knowledge and sharing knowledge."

This is what we consider to be an attempt to rewrite the cultural discourse through practice, through a living example.

## Conclusion

Hacker culture is alive and well in hackerspaces. We know that many aspects of this culture are not new. The novelty, here, is that hackerspaces are expanding the influence of this culture through open and public spaces that are not cut from mainstream culture. And they keep growing all around us.

We have seen that the values and practices of hackerspaces show that their members have, in a more or less conscious way, critical insights into the functioning of society, economy and education. This vision is not expressed through participation in political parties or movements but rather by creating spaces where this vision can be realized.

These spaces are not closed structures, hidden, constructed to perpetuate the purity of their values. They are, on the contrary, open structures in contact and constant dialogue with society. This makes the values and practices of hackerspaces known and available to society, showing that there are still alternatives to the dominant cultural discourse.

This is the way that hackerspaces resist. The extent to which this form of cultural resistance is more effective than political activism is something that can be put into question. The way we may judge their effect is through engaging topics like the future of education, intellectual property rights, consumer society, new forms of political participation. These are questions in which the experience of hackerspaces can be used to shed a different light on the subject. But for that to happen further research on hackerspaces has to be done.

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