THE MINOR LANGUAGES OF TECHNOLOGY: FREE SOFTWARE[1], ACCESS AND DIVERSITY IN CYBERSPACE

abstract:

Currently, universal access and cultural and linguistic diversity in content production, are the underlying in Digital Inclusion. If the existence of great interest and numerous efforts and articulations aimed at *Digital Inclusion* is evidence of the central role that technology plays in contemporary life, on the other hand most proposals and actions are superficial, revealing little comprehension of the contemporary sociotechnical processes. This article intends to map the inconsistencies of this perspective, which understands technology only through its relations of property and use, highlighting the importance of something practically inexistent in present discussions: the diversity of technical cultures that allow multiple ways of exploring the potential at stake in the relationship between humans and machines. Free and Open Source Software (FOSS), because of its sociotechnical production and use processes, will be used as a privileged element in this reflection.

opening:

Promoting universal access to information and communication technologies (ICTs) and insuring content production suitable to cultural and linguistic diversity is, currently, the central and incontestable force behind all

[1] *The most famous definition of the term Free Software was made by Richard Stallman, one of the founders of Free Software Foundation [http://www.fsf.org] and of GNU project [http://www.gnu.org]. It says: "free software as freedom, not as free beer". In English there is this ambiguous sense of the term <<free>>, which can mean freedom or free of charge. Because of that, it was invented the term FOSS, which stands for Free and Open Source Software.*

the efforts aiming at Digital Inclusion. The discussions these efforts produce are based on an increase in Internet and computer use, considering the important role these instruments play in the constitution and mediation of contemporary social processes.

It is believed that providing universal access in public locations or through financial aid for personal computers purchases[2] - that is, assimilating sectors of society that today are excluded from a new global relationship made possible by the digital information and communication networks – must be the starting point to overcome the digital divide that excludes people from new forms of value production, labor, communication, education and citizenship brought by the 21th century.

The inexorability of the current process – the inevitable presence and role of computers in contemporary life – is not the only justification for this necessity. Rather than being a negative consequence, an imposition, the motivation is positive: the access policies aim at diffusing all benefits that ICTs promote.

In this article, I would like to show that, if recognizing the central role that technology plays in contemporary life is really a relevant progress in efforts to discuss, comprehend and influence the technoscientific development in favor of public interests, on the other hand, there is great inconsistency in projects that propose access and content diversity. In fact, public policy proposals, social demands and other projects- all of which we can call *Digital Inclusion* - show this inconsistency in the absence of a deeper reflection upon the mode of existence and the social, political and economic processes related

[2] *For example, three contemporary projects: the MIT's one hundred dollars laptop (OLPC) and its suggestive name "One Laptop per Children" [*http://laptop.media.mit.edu*]; and Brazil's 'Pc Conectado' and 'Telecentros' projects [* http://www.idbrasil.gov.br]

to technical objects'[3] - inventing, patenting, developing, launching, distributing, consuming and exploring minor potentialities.

Therefore, I would like to go beyond the traditional scope of discussion dealing with cultural and linguistic diversity and propose that we take into account what I shall call the diversity of technical languages which generate a variety of technical cultures: new methods of use, thinking, appropriating and developing technology.

This article is composed of three parts. In the first part, I highlight the importance of the diversity of technical cultures as the basis for the existence of cultural and linguistic diversity as a whole. While considering this, it will be necessary to reflect upon the relation between culture and technics, in the light of contemporary processes.

In the second part, I present FOSS as a minor language of technology, trying to expose some of its aspects that still lack proper reflection. This lack might be due to the habit of reflecting upon use and property relations, normally creating an automatic association between Free Software and the GNU/Linux operational system, reducing our problematic to a political opposition or to a mere technical alternative to Microsoft Windows. I intend to focus on a different aspect of FOSS, which I consider to be a really innovative field, full of potential: the freedom that *allows multiple interactions and inventions.*

I conclude with a critical analysis of *access policies*, not based on the solutions provided, but on the demands that orient their actions. Usually, the will to promote access comes with a specific way of usage. However, since technical objects do not have only one usage, it is mandatory to assure the

[3] *Computers, softwares and information networks.*

diffusion of multiple uses, resulting from multiple ways of interacting with machines. The relevance of this reflection consists in calling attention to the unintended possibility that, even when aiming to promote the equality of opportunities, we might be helping to spread an excluding and hegemonic technical language.

culture, technics and contemporary technical cultures:

Contemporary culture faces a huge problem: each day, we become more dependent on technical objects to carry out ordinary activities, such as communicating, working, learning and thinking. This technical mediation is not new; what is different is the higher degree of this dependence on technical objects, which ends up reconfiguring basic human activities.

This dependence result of an accelerated evolution of technical objects throughout the 20th century, especially in the last decades – what some authors call the *acceleration of the acceleration of technoscientific progress*[4]. Computers are the icons of this process, especially if we consider that in 1970 there were no personal computers and, nowadays, there are almost a billion computers and computational nodes spread across the world.

The power of these technical objects is overwhelming, potentializing the human activities they mediate in such a way that the disparity between the lifestyles of those who experience this specific human-machine relation and of those who do not reaches alarming levels.

To overcome such a brutal difference, in which a small percentage of the world's population enjoys the benefits of the accelerated technoscientific

[4] *This expression Richard Buckminster-Fuller's, but here is used as a reference to Laymert Garcia dos Santos' [2003] work.*

achievements while the great majority is excluded from this new sociality, many efforts are aimed at spreading the access to new technologies, especially access to computers connected to the Internet. However, this approach reduces the problem to a matter of property – those who have, versus those who do not have. Proposed solutions focus the efforts in to the spreading of ownership, or, more precisely, access [Rifkin, 1997].

We then reach a paradox condition: as a primal force behind development efforts, technical objects are recognized as major actors in this process but, at the same time, only get superficial attention: what matters is access, or lack thereof.

The majority of *Digital Inclusion* efforts simply ignore technoscientific processes production and development, considered as a 'strictly technical' domain and, therefore, the responsibility of experts. These efforts are limited to the elaboration of strategies for the diffusion of technology and of a specific form of human-machine relation, treating technical objects as if they had an intrinsic, well-defined and fixed utility.

Issues such as software patents or the rate in which new products are released in the market are subjects of discussion only when they are a hindrance to access policies. This line of thought is rooted in a logic of a hegemonic technical culture: based on market laws and oriented toward value production, moving at the same speed as advertising campaigns and focusing on valorization of capital. Hence, technological development is treated as if the perspective present in hegemonic technical culture were natural and necessary, intrinsic to technical objects.

The argument here presented tries to show that there is a diversity of ways in which to think, use, develop and appropriate technology. Technical

objects do not have an intrinsic usage related to their functionality. On the contrary, there is a technicity that consists in a capacity to function, or exist, in a specific way, to which we attribute this or that utility. Uses, therefore, exist as virtualities [5].

It is possible to assert that the current technoscientific production model associated with a specific technical culture dominates others. It is the model of profit-oriented production, based upon expert labor and protection of innovation by patents. In this technical culture, there is a clear separation between users and developers, and the majority of choices – political, economical, social and ecological – are made without public debate. If we focus only on the dimension of use and property, we risk overlooking these aspects and reproducing these relations.

On the other hand, the production of knowledge by the FOSS community follows a model that establishes a different set of relationships with knowledge itself and its production processes. These relationships are grounded on the possibility to freely appropriate knowledge as a public commons. Once patents are replaced by alternative copyright licenses which guarantee this freedom, production is not restricted to a segment of society, neither oriented only towards profit.

As such, a technoscientific production model of a different kind is established, creating a different technical culture, open to multiple interactions. Because it does not constitute a counter-hegemonic model, I will call it a *minor* model (after *Gilles Deleuze* and *Félix Guattari)*, using this model

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[5] *To function in a specific way is different than having a intrinsic utility. However, I do not aim to mean that technicity develops itself independently of human interactions and appropriations upon technical objects, but only that these interactions and appropriations cannot fulfill technicity's virtualities. Technical objects hold an indetermination margin (marge d'indétermination) which is the territory of invention, inner process' evolutions and creation of new uses. [Simondon, 1989]*

to designate becoming-minors.

FOSS as a minor language:

The FOSS community model does not constitute an organized political movement, neither does it present a counter-hegemonic proposal. Rather, it defines a way of producing and dealing with technoscientific knowledge very different from those based on restricted access to knowledge and patents[6].

The way computers and the Internet are predominantly used in the present is not the only possible way in which we can use them. It is the result of a process of social, political, cultural and economic dispute. As I have tried to show, this constitutes a technical culture.

What FOSS brings forth are the different processes at stake, which, through a different relationship with the production and distribution of knowledge, make it possible to establish a different kind of relationship between humans and machines.

The technical foundation of FOSS is the free availability of its source code. This allows anyone who has proper knowledge and basic abilities (or anyone simply curious enough) to access the functional structure underlying these kinds of software, differently than what patented software does, not permitting one the possibility to study, nor the right to know what kind of activities such program is performing in her own computers, in a clear disregard for privacy and for the capacity of social networks to follow technical developments. (DELACROIX, 2004).

The social basis of FOSS is the collaboration between networks of programmers that share common interests and work in a cooperative way. Products of such processes are made available at the same time they are

[6] *However, by saying that FOSS does not constitute a political movement, I do not mean to ignore the political unfolding of its potentials and innovations.*

being produced, guarantying visibility to all steps of the process.

Exclusivist and protectionist intellectual property law guarantees copyright to owner of such rights – not necessarily the author – allowing him to profit from the economic use of the artifacts. However, alternative copyright licenses, such as the *GPL* or *Creative Commons*, guarantee reference and respect to authorship, at the same time allowing at the same time the use of copyright artifacts without charge or royalties. Therefore, these licenses ensure the free distribution, use and appropriation of products generated in this cooperative process.

To protect the viability of this arrangement, these licenses demand that any development of a code that is protected by them must be registered and distributed under the same terms, guaranteeing the maintenance of the availability of the source code as well as fostering the ecology of open software. Surreptitiously, they guarantee the growth of the production network and the sustenance of a continuous distribution of knowledge and artifacts (DELANDA, 2001).

If we pay attention to the fundamental difference of FOSS, i.e. the availability of source code, we will see that such operation permits and encourages the user to alter the software and to help building it up, since the production process depends on a network of collaboration. Hence, it mixes traditionally distinct and isolated sections of society: producers and users. By doing so, then, it opens the possibility of integration between social and technical networks.

Under this new production model, software is released as unfinished, meta-stable objects where the release is but a stage of the production process: it is the moment when indetermination, failures, errors and deficiencies are

disclosed so that interested users can take part in development even in ways the original author might never have considered.

This ensures that users, in all levels of technical abilities, can participate in the production process. Less experienced users can report errors, while more advanced users can even produce corrections or innovations. Even when a certain level of stability is reached, the improving and correcting process does not end: other improvements can always be performed, and innovations are always possible.

The essence of this model is the cooperation among producers with the participation of users. This kind of collaborative relationship is completely different from the one established between providers and users of access in the consolidated model of the new economy (RIFKIN,1997). This contrast reflects a different attitude to technical objects, which involves creative learning processes. Once we have unfinished products, not closed packages, provided with user's manual and product support, the act of installing and configuring a program demands an active attitude from the user, establishing an apprenticeship relation based on reciprocal change – a concept which some authors have named *gift economy* (BARBROOK, 2001). FOSS's production and use network creates, therefore, modes of existence that do not transform social relationships into economic ones, mediated by the negotiation of goods and services (RIFKIN, 1997).

Besides, FOSS's production model is based on another notion of technical progress. Whilst the current technoscientific model, aiming at value production, has a notion of progress based on abstraction, mathematical calculation of efficiency and productivity, FOSS´s notion of progress is based on an intuitive progress felt by those who develop and use the instruments

(SIMONDON, 1989: 233).

The creative potential of this different perspective can be felt in the search for different uses, and in the development of projects without commercial potentialities or which instigate only small collectives of people. In Brazil, a possible example is the meta-recycling method of Metareciclagem[7], which consists in recovering computers already discarded as obsolete. This recovering process is possible only because of the GNU/Linux operational system distributions adapted to run in machines with very low calculation and storage capacity.

The diversity of possible interactions is what makes possible, for example, projects aimed at the translation of commercially uninteresting idioms, such as the one carried out by a group of activists in *Santa Catarina*, that translates the *Debian* distribution to *Guarani*, an indigenous idiom[8]. This is also what makes possible that a group of high level coders gathers to develop a window manager project, whose only aim is to achieve maximum technical coherence – a well written, aesthetically pleasing code; intelligent, agile and efficient processes – even if it takes several years to be released[9].

access and its uses:

P*olicies of access*, as I defined civil and governmental efforts aimed at the diffusion of Internet access, reveal themselves thus to be inconsistent due to the absence of a clear public debate about the (inner) reality of technical objects and the processes they aim to diffuse. The ground discussions and

[7] Metareciclagem is not a group, but a network which applies, in many places in Brazil, a methodology which embraces all necessary aspects, from collecting and recycling computers to building telecenters, focusing in creative and autonomous technology appropriation, instead of access. More in: http://www.metareciclagem.org

[8] http://lists.debian.org/debian-l10n-portuguese/2005/08/msg00164.html

[9] http://enlightenment.org

reflections behind these policies start, in fact, from that which should be the end of the process. In other words, the starting point in discussions is the access to working connected computers, with people chatting and writing emails, as if the only thing that mattered was what happens outside the screen. The technical dimension, considered separately from cultural processes – with the serious consequences we saw – remains completely absent from discussion, restricted only to access and use (content production).

Still, it is necessary to be aware of the fact that the access matter is formulated in a very simplistic way, as if access to cyberspace were like going inside a room and instantaneously finding oneself in equal conditions with everybody else. Access to information technologies is not considered from the perspective of its most important dimension: its fluidity, the accelerated flows of information promoted by instantaneous communication [VIRILIO, 1995] and the capacity of creating and processing information. It is not enough to be inside, it is necessary to know how to move and to be able to do it.

The matter of use, in its turn, is reduced to content production, restricting the relationship with technical objects to a matter of mere manipulation. The inventive dimension, the new modalities of individuation and the transformation of perception are totally absent from discussions. It occurs that computers and the information networks intended to be diffused are not inert objects and environments, but objects and environments with which, once in contact – or better, in relation – something in us is transformed.

Therefore, we cannot deal with the matters of universalization of access and linguistic diversity, without paying attention to these arguments. To introduce computers and Internet connectivity worrying only with the respect for the local language is not enough, if we reproduce the dominant model’s

posture and rationale towards technical objects.

It is necessary to assure the existence of mechanisms that guarantee local, creative appropriation of the objects and practices that are to be introduced. It is not a matter of solely allowing each context to redefine the meanings of the technical objects and practices, but of involving each context in the conception processes and in the creation of its own machines and languages.

Concern with the preservation of linguistic diversity is grounded on the recognition of the importance each language has as a unique mechanism for exploring human virtualities. The specificity of FOSS consists precisely in the existence of multiple mechanisms for the exploration of human, machinic and human-machine *virtualities*. In this sense, we could say that FOSS guarantees the diversity of technological languages.

My effort aims to show that if we have worry about the diffusion of only one specific idiom on the content of the Internet, it is also important to guarantee the diffusion of multiple ways of relating to technology. Being this relationship an important part of the process of constitution of our existence and of what we are, restricting ways of developing the potential of this relationship is restricting the wide field of human virtualities. As risky as the existence of a central and hegemonic idiom is to linguistic diversity, the existence of a central and hegemonic technical rationality is risky to technical languages diversity, reducing the possibilities of modalities of individuation and socialities.

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