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On Gambiarras: technical resignification a la Brazil

1. Introduction

The techno-political manifestations that seek to breach the established order abound in the north or south of the globe. Tactics and strategies (Certeau, 1984) are used by subaltern groups to express their opinions or deviant practices (Becker, 1963). In challenging socio-economic environments such practices can assume a wide variety of forms: for instance, by using the digital as both discourse and practice of subversion to established orders. In this article, we choose a single expression of such subversions to represent one of the ways through which the digital take part in everyday lives.

The practice we discuss in this article is what we call “Gambiarra”: a term applied to a myriad of improvisations, usually material and technical ones as a result of scarcities of all sorts. Gambiarras are normally the technical expression through which people overcome everyday obstacles from the most ordinary ones to the outmost complex environments¹. In order to illustrate usages of Gambiarras in digital humanities realms, we discuss two examples related to digital activism in Brazil: a digital art project and a hackerspace.

Rosas (2006) and Clinio (2011) define Gambiarra as a “do it yourself a la brasileira”, in which the technical limitations are overtaken through creativity in proposing innovative solutions. As a synonym for improvising in a popular culture realm, this is a “inventive process of repossession, adaptation and transformation of available materials in an alternative design form, which allows the creation of improvised solutions for real demands” (Clinio, 2011, p.76, translated).

Widely used in the Brazilian quotidian, the silence of the national and international literature over this practice is striking, bearing in mind that it might not be comprehended in the dominant western context problematics. Gambiarra has a meaning in the daily lives of people that tactically adapt its (digital) apparatuses in order to resist to daily-life problems of all sorts. As such, the paper is supported in two examples: “Gambiarra Favela Tech” and “Hacker Clubs” activities. In the first case, digital apparatuses are used as a way to produce art in Brazilian favelas; in the second case, the institutionalization of hacker activities for education and digital activism is discussed.

¹As an example, the opening of the last 2016 Olympic Games in Brazil was named Gambiarra due to practical issues and shortage of funds to produce the ideal ceremony. As the organizer of the event said “the spirit of Gambiarra is important in Brazil, it’s like we don’t have the means to do but we have to do it” (Globo, 2016).

Theoretically we are inspired by Certeau's (1984) notions of creative consumption, as well as Escobar (1995) and Mignolo (2009) on "south epistemologies" allowing us to frame Gambiarra as an example of political manifestations of the Global South through digital realms. We argue that Gambiarra is likely to happen in challenging environments (technically, socially and economically) and therefore it would represent a characteristic artifact of non-dominant occidental contexts. We aim at contributing theoretically with a plural research of a Gambiarra definition in line with the practice itself: politically plural due to the various interpretations of groups that articulate it. Moreover, the article contributes to the field of Digital Humanities by providing a description of practices emerging from other geographic locations, which reveal the plurality of what means to be a human and use the digital to know the world through its means. As a matter of fact, Gambiarra is both a practice of intervention in the world and an epistemology: a form of knowledge based on technical resignification.

The article follows with a first review of the history of the word "gambiarra" and its relations with other similar terms. Secondly, we discuss conceptual applications of the Global-South perspectives with two illustrative examples. This essay therefore intends to shed light on social practices that bring new dimensions to the act of interacting with the digital in its various forms: established and alternative ones.

2. A review of Gambiarra: bridging the gaps with Bricolage

When speaking of gambiarras it is indispensable to trace back the origins of the word and the context in which it was used. Accordingly to Houaiss (2001), the oldest archive of the word is in the "Diccionario Contemporaneo da Lingua Portuguesa" (1881) by Francisco Júlio Caldas Aulete. The history of the term says that by the end of the 19th century, Brazilian cities started to install gas lighting, which required wires and pipes connected to gas supply. Such installations were called "gambiarras" as a local newspaper in the city of Sao Paulo referred for the first time in 1886. As Bouffleur (2013) says, this newspaper referred to gambiarras in the following manner: "the front area of the theater is lighted by a giant gambiarra", alluding to the electrical light installations. The etymological origin of the term is uncertain, although it is speculated that it has its origins in the word "gambia", which means "leg" as an extension of a body. Symbolically, the word "leg" as an extension would represent an element that is a continuation of a previously established order.

It was because of these origins that the term starts to comprehend a myriad of meanings. Just as culture is dynamic, linguistic elements are as well (Bakhtin, 1981) changing, gaining or losing meanings throughout time. During the 20th century, the term "gambiarra" extrapolates its initial restricted meaning towards electricity in general and improvisations. After the second half of the 20th century, aligned with chaotic urban developments in Brazilian metropolis (Holston, 1989), the word is also used as a synonym for irregular lightning connections and electricity improvisations²: practices

² The tendency to improvise is certainly not exclusive of the geographical regions we address in this paper. As Bouffleur (2013) points out, also in the English language, other expressions are used to describe similar actions. The word "jugaad" for instance, originally indian, is also used as synonym for "improvised solution" just like a Gambiarra. Other examples of the same sort are the "terms Kludge, Jury rig, Workaround, Makeshift and "Quick-and-dirty" (the last one most commonly used in coding language). In Mexico, the term "rascuache", originally from the Nahuatl, is used similarly.

usually associated with informal inhabitations, which are said to be arranged at the margins of the law.

As an example, Brazilian favelas are traditionally a place with high levels of improvisation given the natural conditions of the areas, lack of resources and infrastructure (Bouffleur, 2013). From the 80s onwards, the word is then associated with all sorts of improvisation - not only restricted to electrical light - and negative connotations such as: rough, inconvenient, badly done, precarious, etc. With the development of postmodern thought, gambiarras are also associated with creative inventions to solve problems with available resources. From the years 2000 onwards, gambiarras are also represented in video tutorials about how to create and manipulate certain objects, products, initiatives or actions: all based on “do it yourself” expressions (Bouffleur, 2013) fostered by the possibilities brought by the widely available internet connection in the country.

Brazilian authors like Rosas (2006; 2008), Clinio (2011; 2013) and Bouffleur (2009; 2013) are the ones who theoretically discuss the term “Gambiarra” based on the rationale of improvisation associated with creating new projects, products and actions. One of the first conceptual linkages that gambiarra brings forward is the notion of “bricoleur” based on Levi-Strauss’s (1962) “The Savage Mind”, in which the bricoleur is described as a person who works with hands and uses indirect means to achieve its goals. Even though Levi-Strauss discusses the term in its mythical background related to the frame of a structural anthropology, the French author describes this person similarly to the agent of our gambiarras, while in search for creative solutions to technical and material problems.

The ‘bricoleur’ is adept at performing a large number of diverse tasks; but, unlike the engineer, he does not subordinate each of them to the availability of raw materials and tools conceived and procured for the purpose of the project. His universe of instruments is closed and the rules of his game are always to make do with ‘whatever is at hand’, that is to say with a set of tools and materials which is always finite and is also heterogeneous because what it contains bears no relation to the current project, or indeed to any particular project, but is the contingent result of all the occasions there have been to renew or enrich the stock or to maintain it with the remains of previous constructions or destructions. (Levi-Strauss, 1966, p.17).

Rosas (2006) points out that Levi-Strauss’s differentiation between the “bricoleur” and the “engineer” is essential to understand the gambiarra as a “freewheeling creation that goes beyond user-manuals restrictions, being essentially a practice of bricolage” (Rosas, 2006, p.39, translated). The precariousness of the means, the improvisation, the inventiveness, the dialogue with the surrounding local reality and the community, the possibility of acting sustainably, the flirtation with illegality, the technological recombination in the reuse of a given technology are features that Rosas (2006, p. 37) points out as typical of the Brazilian gambiarra, which, according to him, is also a bricolage practice.

As improvisation sets the tone of what gambiarra means, a second conceptual linkage relates to Michel de Certeau’s (1984) “The Invention of Everyday Life” where everyday life practices are at the core of the discussion. The author suggests that alternative forms of consumption and production can be opposed to established orders. The book, hence, examines the creative “savoir faire” and “savoir vivre” that ordinary people appropriate within the mass culture realm by transforming it into something else: towards other

intentions, subverting the materials and the ideas that had initially designed a product. This applies not only to everyday life objects, but also urban planning, laws and language: all sorts of re-combinations towards a non-given utility. In a way, the unplanned practices discussed by Certeau would also foster the bricolages, therefore allowing bridging the gaps between authors. Both bricolages and gambiarras would then transform the consumption towards a production, showing the application of lexicon that produces something new (Certeau, 1984).

We argue, therefore, that it is possible to conceptually connect gambiarras and bricolages as improvisation practices that make emerge creative initiatives as a result of scarcity: of money and materials, mostly. By doing so, agents (re)signify practices and uses of objects as a political act, or sometimes simply as a result of extreme shortage of resources. Not all symbolic interpretation of practices in this sense is politically-driven, although we defend that even the simplest form of gambiarra would suggest alternative uses to means.

The emergence of Gambiarra as a practice that shapes the lives of people tends to be more common where there is scarcity of resources - typical of Global-South realities - which enforces the practice itself, the creativity with materials, objects and ideas. By framing such practices through these lenses, we propose that Gambiarras conceptually combine the improvisation of techniques with the rationale of a Bricoleur, therefore bridging the gaps between concepts and allowing for future works to develop theoretical-methodological applications to the concept. The interpretation of certain forms of producing knowledge, therefore, can benefit from the usage of a more accurate term.

Gambiarra as bricolage and tactical invention are in our case applicable to what we call epistemologies of the south (Santos, 2014) where our cases emerge. Such context is then developed in the forthcoming item in order to strengthen the argument that gambiarras as a way of producing knowledge and interacting with the material world is a quintessential feature of global-south regions.

3. Global-south perspectives: examples from everyday life

As Mignolo (2011) frames it, Global-South is a fashionable expression which does not refer to solely south nations. It entails geographical an epistemic towards developing nations. While the so-called G-7 nations would be busy with competing for productivity, the other 6.8 billion people would be also very busy but surviving the waves of capitalism in its various manners. As well as the western-eastern division, north-south is made up to comprehend the parts of the world where “developmentalism” struggles to find a path. It is still a better expression than “third-world” or “underdeveloped regions”, notwithstanding its clear restrictions while comprising nations of the geographical north.

More than this, the act of naming is also an epistemic one (Mignolo, 2014) through which power relations and asymmetric encounters appear to change the geopolitical landscape between developed and underdeveloped nations. In our cases, the global-south perspective works merely as a context in which Gambiarras develop. We assume, therefore, that each cultural context produces different sorts of practices (Geertz, 1973). If we understand Gambiarras as practices, logically they also vary accordingly to the

setting they are developed. In order to illustrate such argument, we have chosen two examples from Brazil where gambiarras are widely used both as a manner to cope with lack of resources and as a way to produce knowledge about technicalities. The first example refers to a project in the Favelas³ (Favela Tech, in a central area of Brazil) and the second refers to an institutionalized initiative (a local hacker-space in the north of the country) in the form of a hackerspace organization.

3.1. Gambiarra Favela Tech⁴

Favela Tech was the name of an artistic residence held in July and December 2015 in the Maré Complex, in the northern area of Rio de Janeiro, through a partnership of the Olabi makerspace and the “Favelas Observatory”. The initiative brought together 12 young people from the local community to propose new usages for obsolete materials. Taking as its motto the improvisation and the inventiveness that transform realities, around 40 hours of workshops were provided in order to practice the usage of materials in line with gambiarra rationale: "to take something that is used in a traditional way and to use it in another way, in a way that nobody would imagine" as one of the young participants commented⁵.



Image 1: Screenshot of Favela Tech video

Gambiarra Favela Tech's proposal was anchored in three main aspects: (a) developing environmental awareness, which indicates that better than producing something new and discarding another product in the environment would be to recycle non used products; (b) losing the fear of opening the black boxes, by discovering how technical objects work through a playful manner; and (c) “sevirismo”, a brazilian expression that represents "the science of dealing with what one has," - a term that can be seen as a synonym for gambiarra.

Such project interacts with the history of the word gambiarra as a concrete example of a

³ Favela can be described as a slum or a shanty town where public infrastructure is usually precarious and the architectural landscape seems chaotic.

⁴ Website: <http://www.gambiarrafavelatech.org/>

⁵ The first testimonial of the project summary video, available at: https://www.youtube.com/watch?time_continue=18&v=h54_A5fXk0o

"badly done" improvisation – also typical of favela environments as already mentioned. The improvisations in this case used few resources, trash and unused objects in order to produce works of art that could relate to the favela community. By rearranging materials and giving alternative means to waste, bricolages and gambiarras are put forward as a way to produce art in a scarce context. The success of the project in that local context was, thus, a product of symbolic re-ordering of materials.

3.2. *The hackerspaces: Raul Hacker Clube*

Raul Hacker Clube is “a group of people interested in using, re-using and sharing technology, learning, fun and culture in a collaborative and indiscriminate manner”. Located in the northeast Brazilian coastal area, this hackerspace defines itself as an assemblage of different people managing a non-hierarchical space, without influences of public or private institutions (Martins, 2017). The name honors a well-known Brazilian singer-songwriter born in Bahia, Raul Seixas, whose songs praised, among other themes, the alternative ways of living. Some of the projects carried out by this group are the *Criança Hacker*⁶, series of activities of education free of informatics and basic electronics for children; *Data Laboratory for Citizenship Hacker*, a collaborative space for research, work and discussion on scraping public data for journalistic purposes; among other diverse activities of learning and production of projects in the areas of electronics, free software, open data and hacker culture.

The approach of the hacker culture - of which hackerspaces like Raul are some of the main representatives – has for many years included the idea of a gambiarra such as the creation of a network called “Meta-Reciclagem”⁷: a movement that brings together hackers, students and artists who propose the deconstruction of technology for social transformation, which relates to a gambiarra rationale as an ideological practice of resistance to the dominant order. One of his projects, no longer in activity, was called the “mutirão gambiarra”⁸ (*mutgamb*) and constituted as an “editorial collective that articulates collaborative publications on themes such as creative appropriation of technologies, experimental digital culture and collaborative networks”. The network has helped to popularize the term “gambiology”, a fusion of gambiarra with “ideology” in Portuguese, which can also be interpreted as “science of gambiarra”, a term that shifts the expression out of its pejorative meaning by entailing gambiarra as a localized practice of technological innovation with few resources”.

In hackerspaces, gambiarra is a quintessential form of a “hacker culture”⁹ as if the term would entail the Brazilian form of hacking materials, codes and ideas. As a typical hackerspace suggests, learning is based on collaboration in a “hand-on” *modus operandi*. Teaching, living and working with computers and electronics is an example of hackerspace that can be better understood by framing such practices as gambiarras.

4. **Gambiarra as an object of anthropological investigation in digital humanities**

⁶ Infant Hacker, in English.

⁷ Meta-Recycling, in English.

⁸ Mutirão means a group of people that join efforts towards a specific goal in the form of a task-force. Also described as a “communal work”.

⁹ We support our claims on the notion of “hacker” based on Coleman’s (2015) writings of the term.

Although attributing gambiarra as an expression of global-south nations might be interpreted as an ethnocentric argument - given the stereotypical outlook on the usage of bricolages to cope with restrictions, such as material, economic and social ones for example – these examples help illustrating the ways through which gambiarras are applied in an everyday life of global-south contexts. In a way, the alternative usage of objects that gambiarra entails can be also seen as a displacement from original functions – as Certeau (1984) would argue – which for Mignolo (2000) would work as double critique: of both the West and other traditions from which the critique is launched. Such critique would nevertheless entail a positive affirmation of an alternative ordering of the real. Moreover, as any ordering requires, by actively constructing the world, we construct the concepts that give shape to our reality. It is, therefore, inevitable that technical resignifications are both a product of contextual knowledge and a producer of knowledge¹⁰.

The contingent knowledge that Escobar (2016b) suggest to be part of a cyberculture, however, lacks an empirical dimension or a concrete example of practices that foster the flexible interpretations, so characteristic of the realities discussed by those scholars. Also the author suggests that several ethnographic investigations had been applied to understand the usage of the digital in everyday life – a trend that we reckon as being vital to comprehend the relations between science, culture and technology. Gambiarras enter in this realm as a local practice that foster theoretical-empirical discussions at the margins of orderly western thought. As such, gambiarras can be interpreted as a possible object of anthropological investigation in the field of digital humanities; or in other words, as the object of an inquiry: what does it mean to actively get to know the world and shape it through the alternative usage of resources?

Anthropological investigations of “modernity at large” (Appadurai, 1996) have shown modernity to be de-territorialized, hybridized, contested, uneven and heterogeneous. The “alternative” usages are, therefore, part of such hybridization processes in which modernity meets the peripheries of the world giving rise to new cultural expressions of the digital.

Conclusions

Every technology represents a cultural invention in the sense that it produces a world (Escobar, 2016b). It was our intention to shed light on practices that produce a world and, therefore, entail a form of getting to know the reality through the improvisation. It would be possible to argue that improvisation is not only related to materials and artifacts, but also ideas. We draw on Le Breton (2017) as well to argue that the mind-body division that such assumption would suggest is not feasible in gambiarra terms - solely because even though our examples of gambiarras are technical and material applications of digital humanities, they are a result of ideation and creative improvisation that cannot properly work without planning. As such, we argue that applying gambiarras might evolve into an epistemology, a way of reaching reality through its manipulation.

¹⁰ The debt of these observations with recent developments in the field of *Science and Technology Studies* (STS) is evident, especially in what concerns the focus on strategies that actors undertake towards the solution of daily (conceptual and material) problems.

Gambiarra, therefore, is a combination of practices tailored to solve practical problems of an everyday life. Although not typically restrained to global-south areas, we argue that typically brazilian gambiarras resignify the material usage into new symbolic realms. Even though overcoming the myth of modernity (Escobar, 2004) is not a new argument in itself, the combination of such endeavour with the practices that shape everyday life in global-south regions was also the goal of our essay.

Finally, as means to propose empirical continuations of this essay, the ethnographic and anthropological investigation of gambiarras in all sorts of forms and places is likely to make emerge a myriad of practices from the outskirts of the world, where the digital finds a way to exist despite its possible restrictions – socio-economic ones mostly. By showing the richness of gambiarras, we argue that it is possible to theorize digital humanities as mostly applied to the people that make use of it in its daily applications.

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