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O DESIGN ESPONTÂNEO PERIFÉRICO DE BRASIL E CUBA NA AMÉRICA LATINA
THE PERIPHERAL SPONTANEOUS DESIGN OF BRAZIL AND CUBA IN LATIN AMERICA
PAMELA MARQUES CORRÊA, MARISA COBBE MAASS

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Pamela Cordeiro Marques Corrêa is an Interior Designer with a Master's degree in Design. She is a researcher in the research group Culture Urbanism Resistance Architecture - CURA, at the School of Industrial Design of the State University of Rio de Janeiro, Brazil. She carries out research about peripheral spontaneous design and its social and political issues. marques.pan@gmail.com
http://lattes.cnpq.br/5411991839951854

Marisa Cobbe Maas is an Architect and Urbanist, and a Doctor in Theory, History and Criticism. She teaches at the Graduate Program of the Department of Design at University of Brasilia, Brazil. She works on Design and Architecture with an emphasis on Theory and criticism, Aesthetics, Theory and History of Design, and Design Education. She coordinates the Group Design Education, at the University of Brasilia. marisa.maass@gmail.com
http://lattes.cnpq.br/1114384517661428

Abstract

This article compares, through literature review, the relationship that Cuba and Brazil maintain with their spontaneous peripheral design, that is, with the material production intuitively created by their populations in response to the lack of resources. In a descriptive and explanatory way, we analyze the popularization in Cuban society of what Ernesto Oroza called "technological disobedience": the disrespect for the "aura of indivisibility" of industrial products since the crisis of the 1990s. Next, by comparative method, we contrast this approach with the Brazilian view of the so-called gambiarra, which is a subject to stigmatization by the hegemonic culture, despite being perceived in Brazil as an establishment of national culture. By observing the convergences and divergences between these phenomena, the study shows that it is possible to understand how they relate to the socio-cultural characteristics of the Latin American scenarios from which they emerge. As a result, we infer that the distinct Cuban and Brazilian environments explain the discrepancy in the reception of these manifestations in their respective societies. Finally, we perceive such manifestations as references of design practices from the Global South with the potential to catalyze social changes since they seek emancipation, essentially.

1   Introduction[1]

Much attention has been given by the forefront of national and international design research to contemporary issues such as consumerism, sustainability, and the designer's responsibility as a part of the production process. The anthropologist Arturo Escobar (2018), who dedicates himself to researching the field, has repeatedly announced that design is undergoing a reorientation and that its political nature is increasingly consolidated. This growing concern with the current system and its social and environmental consequences, coupled with a decolonial perspective led mainly by the Global South, are indicators of this situation. Consequently, a field of transnational critical design studies becomes evident, creating space for other ontologies and epistemologies that have been subjugated by the colonial experience to be recognized.

As evidenced by Luciana Ballestrin (2020), the denomination Global South stems from the concept of the Third World, and both comprise a complexity of meanings beyond hierarchical, economic, and geographical classification. Both expressions seek to understand the place of those who have been made subaltern by modern, colonial, and imperialist history. Therefore, the Global South category can be understood as an affirmation of "a subaltern geopolitical identity" and its insertion in a global structure of domination

The process of questioning that seeks to understand the place of Latin America in modernity and its implication in the field of design began to take shape in the second half of the 20th century, when similar debates were already taking place in other areas, such as the Social Sciences. In this context, the designer Gui Bonsiepe stands out as a reference for studies of the social and economic conditions of the Center and the Periphery of the capitalist system. Bonsiepe (2011) points out that in the current globalization of markets, design can become another instrument of domination of hegemonic powers over peripheral countries, depending on the political and economic interests involved.

Furthermore, Bonsiepe (2011) suggests that the demand for new forms of social organization is legitimized after the recent cycle of financial deregulation led by developed countries, and the disastrous environmental and socioeconomic consequences it has generated worldwide. Therefore, it is important to notice the social approaches that emerge in peripheral countries, where income concentration, poverty, and scarcity of resources and productive tools are concrete everyday issues that these populations have historically dealt with. In contrast, in core countries, only now, with the exacerbation of capitalism's contradictions, are these realities beginning to be experienced more broadly. Issues such as scarcity and inequality are no longer just speculative problems that abstractly guide the design process.

Redirecting research and debate in the field to issues that affect the majority of the world's population, concentrated mainly in marginalized and destitute regions of countries with fewer resources, is a possible way out to mitigate the inequality of forces, in which design can act as a protagonist or create ruptures. Within this asymmetric relationship, the core countries, whose shortcomings have already been met, are the clear beneficiaries. In the peripheral contexts, the tired proposition of reproducing their practices without a deep analysis of the historical framework is not only limiting but also yet another exercise of dominance identifiable as part of the problem.

In his seminal work, Design for the real world, Victor Papanek argues that design is a powerful human ability; through it, it is possible to shape the world and oneself. To do so, one must analyze the past and its pertinence to the present, as well as be aware of the consequences of one's actions in a future perspective. He also states that "design is the conscious and intuitive effort to impose meaningful order." (Papanek, 1985, p. 4). Such consciousness entails intellectualization, research, and analysis, whereas intuition refers to impressions, ideas, and thoughts on a conscious, subconscious, or preconscious level. This amplified concept about design resonates with the idea of spontaneous peripheral design,[2] which happens in practices known as gambiarra and technological disobedience (figure 1).

Fig. 1: Examples of technological disobedience in Cuba. Source: Oroza, 2015. Available at https://bit.ly/3pwUuZk. Accessed 23 Oct. 2021.

According to designer Rodrigo Boufleur (2006), the term "gambiarra" can assume several meanings, yet informally it is mainly used to identify the most varied forms of improvisation, such as adaptations, adjustments, repairs, and gadgets, among others. This term, widely used within Brazilian culture, is usually linked to the popular "jeitinho"[3], lending it a pejorative character. In this work, gambiarra (figure 2) is in line with creative expression, intuitive design, and the ability to adapt and subvert the predetermined use of objects of a variety of natures. Gambiarra is, thus, closely related to the idea of technological disobedience, coined by the Cuban designer Ernesto Oroza.

Fig. 2: Example of gambiarra: a beverage cart in Rio de Janeiro, Brazil. Source: Vitor Vogel for Pamela Marques, 2019. Personal collection.

The end of the Union of Soviet Socialist Republics (USSR) in the 1990s deprived Cuba of its greatest ally and the financial and technological support that came with it. The embargo imposed by the United States of America added to this context, pushing the country into a crippling scarcity, known as the "Special Period in Times of Peace". To deal with the situation, Cuba adopted a strategy that may sound unusual in the capitalist part of the West. The lack of access to the consumer market and generalized scarcity have led the population to develop maintenance, hacking, recycling, and re-purposing practices of consumer goods and their components in order to extend their useful life. Other consequences were the use of products in functions for which they were not initially designed and the cannibalization of parts and pieces for reuse in other items or even in the creation of the actual items.

The socialist government started compiling the solutions that had been created to face the daily difficulties and released them in publications such as *El Libro de la Familia* and *Con Nuestros Propios Esfuerzos*, in 1991 and 1992, respectively. The custom, which over time has spread among the Cuban people, of subverting and adapting objects and components, transcending the use that the manufacturers had prescribed and transgressing this "aura of indivisibility" – that is, the perception of products as individual "closed" units – is what Ernesto Oroza (2012) has coined "technological disobedience".

In light of this information, it is possible to draw parallels between Brazilian and Cuban improvised design. On the other hand, the exaltation of agency shown in these customs highlights contrasts between the two scenarios. In Cuba, the community's spontaneous design was to some extent stimulated by the government and the particular context of the island, enhancing its impact on local culture. In Brazil, however, despite recent indications of change in the way it is socially meant, gambiarra is traditionally seen in a derogatory way and develops substantially on the fringes of mainstream avenues.

It stands to reason, then, that gambiarra and technological disobedience can both be considered design practice references from the Global South. Considering the prevailing economic models, the socio-spatial dynamics, and the historical framework pertinent to each scenario, the study of these phenomena can offer a reflection on the cultures in which they arose and on their relationship with the production of artifacts in the face of resource scarcity. Furthermore, it can be possible to provide a perspective on the real potential of the design field in Latin America for social transformation from an emancipatory perspective.

2   Methodology

This qualitative study is based on descriptive research, since it is imperative to detail the aspects that make up each phenomenon, understanding its various dimensions. A bibliographic review was first carried out, both for historical contextualization and for surveying the scientific knowledge around the themes. Next, an explanatory approach was taken. Using the comparative method, it was possible to perceive the constant elements that characterize the similarities and differences between the two social practices studied. According to Antônio Carlos Gil (2002), it is common to associate descriptive research with explanatory research within an established study because, in addition to identifying and detailing the factors that characterize a phenomenon, one can perceive the need to determine the nature and relationship of these elements. The author also points out that explanatory research is the one that "deepens the knowledge of reality the most because it explains the reason, the why of things." (Gil, 2002, p. 42-43, our translation).

Finally, this paper is classified as a case study of two objects: the Brazilian gambiarra and the Cuban technological disobedience. This research modality is regarded "as the most appropriate framework for investigating a contemporary phenomenon within its actual context, where the boundaries between the phenomenon and the context are not clearly perceived." (Yin, 2001 cited by Gil, 2002, p. 54, our translation).

3   A historical perspective of Brazil and Cuba

According to researcher Ynaê Lopes dos Santos (2012), starting in the last decade of the 18th century, the process of urban slavery (urban and political configurations, appropriations of public spaces, and influence on city dynamics by slaves of ethnic closeness) in Rio de Janeiro and Havana, the two major port centers of the Americas that are key to the Iberian Atlantic, enabled the sharing of the title of Atlantic Sisters[4] – largest slave cities[5] in America in the 19th century. In other words, both cities had their economic, political and social functioning dependent on slavery. Assunção and Zeuske (1998, p. 375) point out that this condition "[It] shaped the development of the national Afro-American cultures, the construction of "race"– categories and social hierarchies [...]" in a similar way in both urban spaces.

In an interview for the Afreaka project, anthropologist Ana Stela Cunha confirms that the similarity of Brazil and Cuba is also intensified by the fact that they received a significant number of slaves of the same origin —

the *Bantu*, populations that lived in the southern Ecuadorian portion of Africa — and that "it was precisely the ability of adaptation of these Africans that intensified their influence on the construction of Brazilian and Cuban societies." (Cintra, ca. 2015, our translation). In the introduction text of her book Caboclos Nkisis, Cunha (Caboclos, 2014) adds that even with all the effort made by Cuban and Brazilian national elites to "relegate Afro-Cubans/Brazilians to a plastered and not very dynamic past, through different ways, this significant portion of the population indicates how connected they are to a present that translates into creative and flexible forms of knowledge." Finally, the researcher states that, in analyzing the historical process of slavery in Brazil and Cuba, the only notable distinction between both of the colonies was the time frame of legalized and later prohibited transatlantic trafficking, and the number of slaves that arrived in their ports. Therefore, the weight of urban slavery justifies the cultural conformity of these slave capital cities.

Political and social differences intensified between the two colonies starting from 1808, with the opening of Brazil's ports to world trade. Then, they were accentuated with the Independence of Brazil in 1822 and definitely sharpened both from 1959, with the Cuban Revolution, and in 1991, with the beginning of the "Special Period in Times of Peace" in Cuba – a time of intense shortage of resources due to the US economic embargo and the dismantling of the USSR, which helped supply the island's material needs. Even so, it is clearly possible to identify common habits and cultural manifestations in the contemporary daily life of both countries, as well as the strong presence of similar African-based religious practices. Within this historical context, it is possible to find an affinity between the two Latin American nations based on their experiences with slavery, which provides common ground for the comparative analysis of improvisation practices in urban spaces.

4   Gambiarra and technological disobedience: convergences and divergences

In 2015, Cuban designer Ernesto Oroza visited Recife, the capital city of the state of Pernambuco, Brazil, to promote the exhibition "Technological Disobedience" (figure 3), which displayed part of his research on the solutions developed by the Cuban people to deal with the lack of resources.

Fig. 3: Technological Disobedience Exhibition, at Caixa Cultural Recife, Brazil. Source: Oroza, 2015. Available at http://www.ernestooroza.com/desobediencia-tecnologica-caixa-cultural-recife/. Accessed 23 Oct. 2021.

Over the years, the designer has recorded and collected cases of design solutions developed by his fellow countrymen. These are picturesque examples of recycling, reuse, customization, and repurposing that highlight creativity (in dealing with industrial products. According to Oroza (2012), the habit that the population maintained of opening, repairing, cannibalizing and mixing objects, over time, led Cubans to a paradigm shift in their relationship with these artifacts, developing what he called technological disobedience: the deconstruction of the perception of industrial products as "closed" units and the transcendence of the uses conceived by their manufacturers. During his stay in Recife, Oroza visited local communities (such as Brasília

Teimosa) and, in interviews, reported having come across improvised design solutions very similar to what is found in Cuba:

> I found in Brasília Teimosa the same relationship of people with their objects and housing, recreating them, reinventing them in their own way, just as it happens in Cuba. Technological disobedience belongs to the culture of all Latin America. That is why it is so present in Recife. These are contemporary social practices linked to inequality. (Oroza cited by Portela, 2015, our translation).

The type of solution that Oroza compiles, and that he identified in Recife, is what, In Brazil, is called "gambiarra" (figure 4). As defined by Rodrigo Boufleur,

> Among several related meanings, the term gambiarra has often been used informally to identify forms of improvisation: adaptations, adjustments, fixes, repairs, fittings, splices, patches, whole inventions, gadgets, gizmos. (Boufleur, 2006, no pagination, our translation).

Fig. 4: Example of gambiarra in Recife, Brazil, recorded by Oroza. Source: Oroza, 2015. Available at https://bit.ly/3CnZTWd. Accessed 23 Oct. 2021.

From an economic point of view, Boufleur (2013, p. 13, our translation) relates the capitalist industrial system to the emergence of the "tactic" of gambiarra: "gambiarras represent a parallel production, necessary and complementary to the materiality produced by industry." He notes that the usefulness of things is not only a result of the capitalist mode of production and that gambiarras (figure 5) are tools that allow us to perceive the deficiency, the precariousness, and the provisional nature of the products that surround us.

Fig. 5: A cart made out of a refrigerator with no engine. Gambiarra. Recorded in Brasília Teimosa, Recife, Brazil. Source: Henrique Placido for Pamela Marques, 2019. Personal collection.

Therefore, it is necessary to understand the socioeconomic context that made propitious the emergence of spontaneous inventive improvisation and its consequent stigmatization, as well as the broad meaning of gambiarra in today's society, before analyzing a possible change in the sociocultural perception of the phenomenon. Brazil has proven to be one of the most unequal countries in the world, despite constantly ranking among the largest economies[6]. Darcy Ribeiro (2006) describes the Brazilian social framework as historically stratified and hierarchized, with deep social distances and class antagonism that oppose "an exceedingly exclusive privileged group to the bulk of the population." He traces the origins of such a configuration to the circumstances of the process of national formation as a colony of Portugal:

> The nation-people [...] [arises] from the concentration of a slave labor force, recruited to serve mercantile purposes alien to itself, through such violent processes of production and repression that constituted, in fact, a continued genocide and a ruthless ethnocide. [...] The historically produced social stratification has another characteristic, the rationality that stems from its assembly as a business that privileges and ennobles some, making them masters of life, and subjugates and degrades the remainder, as an object of enrichment for others. This intentional character of the enterprise makes Brazil, even today, less a society than a colonial fiefdom because it does not give the population structure to fulfill its conditions of survival and progress, but to enrich a lordly stratum focused on meeting exogenous demands. (Ribeiro, 2006, p. 20-21, our translation)

In other words, Ribeiro describes an iniquitous country, in which an elite holds the power with an iron fist. In a country with this social framework, it is not surprising that the need Oroza identified as the root of design creativity is widespread.

Unlike in Cuba, however, in Brazil, the need is not shared. Perhaps this is where one begins to understand the difference in perception of both societies regarding their popular design. The formation of the national social framework and the inequality of power it gave rise to, created an ideological superstructure that is quite representative of this configuration. According to Ribeiro (2006), these historical factors

> conditioned the lordly elite to view the people as a mere labor force destined to waste away in productive effort and with no rights other than that of eating while

working, to replenish their productive energies, and that of reproducing to replace the worn-out manpower. Nor could it be otherwise, considering the particular class of employers that was formed by dealing with slaves, regarded as mere things and handled for purely pecuniary purposes, in an attempt to get as much profit as possible out of each piece. (Ribeiro, 2006, p. 195, our translation)

Ribeiro also describes the resulting antagonism:

Social stratification in Brazil thus separates and opposes the rich and the working class from the poor, and all of them from the miserable, more than it usually corresponds to these antagonisms. On this level, class relations become so insurmountable that they obliterate all properly human communication between the mass of the people and the privileged minority, who sees them and ignores them, treats them and mistreats them, exploits them, and deplores them as if this were natural behavior. [...] The privileged ones simply isolate themselves in a barrier of indifference to the plight of the poor, whose abhorrent misery they try to ignore or hide in a kind of social myopia that perpetuates otherness. (Ribeiro, 2006, p. 21, our translation)

This description of Brazilian ruling classes' mentality should be understood in the light of another important fact: in Brazil, the difference in wealth distribution is also reflected in the absolute cultural hegemony of the elite, who control access to the necessary means to guide public debate and influence society's production of meaning. It is under this ideological hegemony of the elite and their practice of inflicting otherness on the underprivileged that the meaning of gambiarra (figure 6) in Brazilian culture occurs: the expression of necessity associated with the subaltern and stigmatized "Other", whose agency outside the standards determined by the dominant class must be suppressed or contained.

Gambiarra is, undoubtedly, a political practice. Such politics can take place not only as activism (or a supporting tool for it) but because the very practice of gambiarra is itself a political statement. In addition, consciously or not, in many moments, gambiarra might negate the capitalist productive logic, fill a gap, a deficiency, a precariousness, reinvent production, glimpse a utopian new world, a revolution, or simply try to heal certain open wounds inflicted by the system, bring comfort or voice to those who have been denied it. Gambiarra is itself a voice, a cry of freedom, of protest, or simply of existence, of the affirmation of innate creativity. (Rosas, 2006, p. 47, our translation).

Fig. 6: Chicken coop built with a supermarket cart, in the Brasília Teimosa neighborhood, Recife, Brazil. Source: Henrique Placido for Pamela Marques, 2019. Personal collection.

The perception of Brazilian design creativity only began to change with the actual material conditions of the country, in a process that significantly altered the power dynamics of society. The recent inclusion of the lower classes into consumers' markets, during the progressive governments of the first decade and a half of the 2000s, has led to an increase in the perception of these groups as economic actors. It is possible that the dismantling of the governments in the following years and the conservative wave that followed have interrupted or begun to reverse this process of awareness. However, this same process has reframed the role of the lower classes when faced with the hegemonic culture and thus changed the status of the meanings produced by these classes. The tendency with this integration, however, has been the vertical assimilation of the new actors, guided by capital, with no questioning of the traditional forms of production or democratization of society's relationship with products.

One of the reflections of the change of level of the poor in the Brazilian internal market during the center-left governments, to the point of protagonism, was their repositing in the face of the business class and the hegemonic culture that it rules. Suddenly, the elite realized the power and creative agency of the lower middle class, and a timid beginning of redemption for the people in the national imaginary could be noted.

The sectors at the forefront of contemporary design research are among those that have noticed all this dynamism and creativity. Initiatives and cultures such as *Maker* and *Do It Yourself* (DIY), focused on universalistic fostering of creativity and productive autonomy, began to take notice of Brazilian popular design and did their part in bringing new meanings to gambiarra. One example is the case of Gambiarra Favela Tech, a project that searches for "gambiologists" who live in Carioca communities. A "Gambiologist", according to digital artist Ricardo Palmieri, "is nothing more than a maker, who uses gambiology techniques to manufacture his ideas." (Solos Culturais, 2015, our translation). The project proposes to stimulate the creative and artistic potential associated with technology. The initiative is an attempt to rescue popular culture, and also a way to value the origin of creative and spontaneous solutions. Other examples are found in the artistic scene, as in the exhibition "A Poesia da Gambiarra", by the artist Emmanuel Nassar; as well as in design, presented in the exhibition "Design da Periferia", by Adélia Borges, and "Design da Favela", by Ricardo Saint Clair.

In this way, it is possible to infer that the different material conditions in Cuba and Brazil, and the cultures and ideologies that resulted from them, explain the discrepant way in which their societies welcome spontaneous design. In Cuba (figure 7), the need and scarcity shared by the whole society led to the official fostering of design creativity and improvisation, bringing about a change in the people's relationship with the production

processes and with the products themselves, making it easier to overcome practical difficulties. In Brazil, the formation process of our stratified social framework led to a scenario of concentration of power, which generated an elitist and segregationist hegemonic culture in which need is always otherness. This resulted in the stigmatization of problem solving when done in a way that is "subversive" to traditional production and consumption relations, limiting the population's design ability.

Fig. 7: Rikimbili, Cuban motorized bicycle. Source: Oroza, 2005. Available at http://www.ernestooroza.com/rikimbili/. Accessed 23 Oct. 2021.

5   Design, technology and society in the current Latin American context

In Latin America, the study of social technologies is constantly advancing, and its conceptualization has come closer to the discussions on social innovation within the scope of design. According to Dagnino (2009, p. 8, our translation), in the view of "Rede de Tecnologias Sociais" [Social Technologies Network], for example, social technology "comprises products, techniques and/or methodologies that can be reapplied, developed in interaction with the community and that represent effective solutions for social transformation". However, it is imperative to highlight that the Latin American social technology proposal is a way of resistance to the imposed and hegemonic capitalist technology, as well as a means of fostering social inclusion.

As stated by Novaes and Dias (2009, p. 21, our translation), since the advent of Appropriate Technology (AT)[7] in 1970s India, one can observe a greater volume of theoretical dedication by some researchers from core countries to investigate the relationships between technology and society, as well as their respective effects. A widespread conclusion was that the conventional technology that is used and elaborated by the private means of production in advanced countries doesn't adapt nor meet the needs of peripheral reality when replicated in developing countries. Dias and Novaes (2009, p. 60, our translation) go deeper into this discussion about the current context, in which the creative economy and/or innovation economy are on the table and receive governmental incentives for their growth. They state that the dynamic of imposition and adoption of technological development practices of the core countries is still normative.

Techniques — elementary procedures of social technology —, according to Milton Santos (2006, p. 16, our translation), are "a set of social and instrumental means, with which man realizes his life, produces, and at the same time, creates the space". They are the main form of man's relationship with nature. Undoubtedly, technique is also a significant element in explaining societies and places, but in isolation, it explains nothing.

The interpretation of reality exclusively from technical means, without considering the social frameworks in which techniques and instruments are developed, is, in fact, even harmful.

For this reason, when discussing the diffusion of ideas or solutions to certain social problems beyond the contexts in which they arose, it is necessary to understand that each space has its specificities that cannot be disregarded. Moreover, these places are inserted in the capitalist logic and submitted to external geopolitical and economic forces. As Dias and Novaes (2009, p. 63, our translation) point out, the transfer, or "replication" of preconceived technologies, or successful social enterprises, hardly occurs without any loss or noise. The most appropriate proposal is likely the "reapplication" of knowledge and methods, taking into account the particularities of each locality and its insertion in the global dynamics.

Another characteristic of technique is to be "universal as a tendency", as stated by Leroi-Gourhan (1945 cited in Santos, 2006, p. 35, our translation). Capitalism was already catalyzing this process even before globalization, establishing the internationalization of techniques as a fact. When Italian researcher Ezio Manzini (2008) suggests to peripheral countries that they start watching some western experiences of sustainable living to stimulate the adoption and adaptation of analogous ideas to their urban context, he demonstrates, once again, the reproduction of colonizer mentality and technological domination. Core countries' reflections and policies provide us with significant contributions. However, it is necessary that we, as Latin American and peripheral countries, become more independent, and increase the amount of research and theory development regarding our situation. Only then will we be able to achieve a closer perception of our reality and needs to formulate solutions that reflect our condition.

Bonsiepe (2011, p. 21, our translation) proposes the adoption of a humanistic stance for the practice of design: "the exercise of design skills to interpret the needs of social groups and develop viable, emancipatory proposals in the form of instrumental artifacts and semiotic artifacts". Its application in the design field may catalyze the process of rupture from the domination of the centers of power over the marginalized — the world's majority within the current system. He also states that it is essential to take a critical stance, for only by doing so will we move from conformist acceptance to real action. The main initiative that can change our condition is in the construction of a collective social conscience, attentive to the material reality, in which designers have the necessary tools to conduct and improve this process of change.

Also according to Bonsiepe (2011), despite the suspicious and depreciative look from part of the dominant class, maintainer of the status quo, it is no longer possible to ignore the social organizations that arise in spaces marked by inequality and social laceration, along with their explicit potentiality in dealing with the shortage of resources and access to consumer goods, essential for survival in an exclusionary system such as capitalism. In these solidary approaches, he believes that the current concept of design will be relativized, further modifying the field's competence in catalyzing the process of social emancipation through design.

6   Final considerations

It is specifically in the urban territory (but not only there), particularly in the capitalist periphery — affected by globalization and its new technologies intentionally imposed by the core countries — that, according to Milton Santos (2006), the "simple global places" and the "complex global places" emerge. Whereas in the former only part of the "vectors of modernity" arrive, in the latter an abundance of several types of vectors and, consequently, a strong socio-spatial and material diversity can be found. It is also in the latter that the excluded create and resist. Difference is generated by scarcity and it becomes "the basis of a creative adaptation to existing reality" (Santos, 2006, p. 218 and 210, our translation). Subversion and improvisation practices in situations of material and tool scarcity – spontaneous peripheral design – in Latin American cities are examples of the production of life for those who, because their ancestors were thrown to their own luck, find themselves in the condition of urban poor, and are examples of resistance and re-existence.

At the beginning of the 21st century, according to Ballestrin (2020), the Global South turned into a potent category of a path towards another future, in opposition to the instituted extractive globalization, as well as a protagonist in the fight for decolonization. Reflecting on the phenomena of gambiarra and technological disobedience and understanding them as design practices from the Global South becomes an attempt to detach from coloniality in its various dimensions and a search for autonomy in the production of life. The framework herein described shows that despite the historical exploitation of Latin America and the constant state of crisis that has been imposed on this region, a creative and transforming potential resides in its people. What is still lacking is knowledge, organization, critical awareness, and the effective and local dissemination of this potential.

Finally, recently Escobar (2020) remarked that decolonial theory in Latin America (with its development in Brazil within the field of architecture and urbanism) has been gaining a spatial imaginary. It is possible to

assume that a significant contribution of the design field to this moment – considering the material conditions, relations of power, and oppressions – is to investigate, in Latin American urban spaces, the materiality produced by the marginalized, direct heirs of the tragic consequences of the colonial project.

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[1] This article stems from the master's thesis entitled "Technological Disobedience and Gambiarra: the peripheral spontaneous design as a path to other futures", defended in July 2019 at the Design Graduate Program of the National University of Brasilia, Brasil.

[2] The definition of spontaneous design by researcher Maria Cecília Loschiavo dos Santos was chosen, along with the term "peripheral", to highlight the macrostructural and microstructural dimensions of capitalist logic: "Santos (2003) developed the theme with a focus on urban social groups and understood 'spontaneous design' as the 'practice of creative resistance, seeking ingenious solutions applicable to solving concrete problems, in a context of severe lack of resources.'" (2003, p. 75, cited by Riul, 2015, p. 64, our translation).

[3] Note of Translator: This is a short for what could be translated as "the Brazilian way", referring to how Brazilian people often find a workaround, an alternative way to achieve their goals, even if not the ideal or correct one.

[4] An expression that the author borrows from Michael Zeuske, present in *Comparing or interlinking? Economic comparisons of early nineteenth-century slave systems in the Americas in historical perspective*.

[5] Slave city differs from "city with slaves" in that its functioning depends essentially on slavery. Explanation by Dr. Ynaê Lopes dos Santos in the program Fala, Doutor, from UNIVESP – Virtual University of the State of Sao Paulo.

[6] When the aforementioned original research was conducted, the data made available by the World Bank pointed to Brazil as the 9th largest GDP in the world (Costas, 2016). The Gini index at approximately 0.500 placed the country among the fifteen most unequal in the world (Dupita, 2017). In 2020, during the Covid-19 pandemic, the country fell to 12th in the world GDP ranking (Alvarenga, 2021). The Gini index, meanwhile, stood at 0.543 in 2019 (Filizzola, 2020).

[7] Still, according to Novaes and Dias (2009), few Latin American intellectuals, among them Amílcar Herrera, have dedicated themselves to research on Appropriate Technology.