

The collaborative turn: Challenges and limits on the construction of a common plan and on *autonomía* in design

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ABSTRACT

This article deals with the challenges and limits of co-design, the possibility of adopting new forms of research and the difficulty of giving up design methods for other ways of seeing the world. If the assumptions that we use as a starting point, such as the actual idea concerning design, the creative process, and how to do things, are tied to dominant standards in terms of discourse and logic that are detached from the communities with which we have been able to co-research, such as ideas concerning productivity, development, market, and science, how can we offer our assistance in co-design? Taking the epistemological approach of postcolonial studies and the concept of the subaltern as a starting point, we dialogue with the immense challenge proposed by Arturo Escobar of thinking about *autonomía*. Based on the cartography as a path for design, we devised a common plan with our co-researchers – indigenous and maroon craftsmen and women, from the Maranhão Lowlands region – and in this paper, we recount experiences in correspondence, in dialogue with Tim Ingold. We present characteristics and contradictions, challenges and limits that are the result of an exercise that makes us reflect on the epistemological and conceptual pitfalls that we construct – and of which we also fall prey – when speaking about co-design, without calling into question what we call design, development, and other naturalised categories that are part of a designer's work.

Keywords: co-design, cartography, correspondence, *autonomía*.

Introduction

Thinking about co-design experiences in sociocultural contexts, in which economic, social and political discrepancies between the *stakeholders* of the process are immense, requires urgency in thinking about new forms of collaboration and involvement in actions, since there is an intrinsic process of submission to a prevailing order, a hierarchy of knowledge that condition practices and discourses within the scope of design.

This discussion is placed within the scope of studies on the subaltern, a category set into motion by Gayatri Spivak (2010) to speak about the limits on constructing narratives with or based on minorities around the planet. Since we are all imprisoned in a dominant epistemology, and even when opportunities are created for subalterns to place themselves in the position "to speak", it is not possible, since we are subject to the epistemological limits that place us, with very little mobility, in specific social positions.

This means that even when we are open to collaborative processes, it is a great challenge to think about *autonomía* – in Escobar's terms (2016) – as a localised process, based on specific paces for making oneself near to or away from traditional practices, and the freedom to create new practices as tactics to maintain a dynamic equilibrium – if the very assumptions that we use as a starting point, such as the very idea of design is tied to dominant standards in terms of discourses and logic detached from indigenous and maroon communities with which we have been able to co-research, insomuch as committed to the ideas of productivity, development, market and science.

The path taken in this research is the scope of the "Knowledge Sifting [Ciranda de Saberes]" project¹ (Noronha *et al.*, 2017b), in which we had the opportunity to bring into contact several handicraft-producing groups to exchange knowledge about their practices; as designers, we took on a mediation role in these processes, in accordance with the application notice of the Maranhão State's Funding Foundation, entitled "Social Technologies". It is based on the understanding that we need to cover and dialogue with the

¹ Project officially entitled *Exchange of native practices and knowledge production among handicraft groups from the Maranhão Lowlands and Alcântara - MA*, received support from FAPEMA [Foundation for the Funding of Research and Scientific and Technological Development of Maranhão] through the Social Technologies application notice. It was conceived and implemented by NIDA - Innovation, Design and Anthropology Research Unit at the Universidade Federal do Maranhão between November 2015 and October 2017.

demands of a research funding institution – representing the current *status quo* in science and knowledge production – and the demands of our co-researchers, craftsmen and craftswomen from the Maranhão Lowlands region.

This has been the dispute in the discourse taken on by postcolonial intellectuals, including Escobar (2016), Mignolo (2005), Spivack (2010), Said (2007), among others, who dialogue especially with Foucauldian reflections (2010, 1987) about order and discourse dispersion, epistemological limits on the representation of the other and relations of knowledge and power, which are keys to possible freedom of discourse for subalterns. However, these authors acknowledge constraints in these reflections, which are referred to by Walter Mignolo as *coloniality of knowledge* (2005, p. 71), involving a series of standardisations and a way of producing knowledge, based on Eurocentrism. Often, in the field of research, we have found ourselves trapped in these constraints, having difficulty breaking away from our own notion of design and from its *outcomes*, in favour of other forms of knowledge and their construction.

We also bring the idea of *collaborative turn* in reference to the discussions in both fields – design and anthropology – that make visible the frictions when different subjects start making things together, dealing with these challenges and limits of co-design, with the possibility of adopting new forms of research and with our difficulty in giving up design methods for other ways of seeing the world. The author who guides us on this path is Tim Ingold, a British anthropologist who directs us to the practice of correspondence as a way of being alive and in relationship with the environment in which we take part. He speaks to us about *response-ability* (Ingold, 2018, p. 5) as an ability to respond to what the others offers to us, who in turn take a stance in response to our own movements in the world. By taking action into consideration to the people with whom we live our lives in the world – which for Ingold characterises the very process of education – we would be capable of relearning through new responses and new movements, according to other ways of thinking and doing things. Ana Amélia², a dishware maker from Mirinzal, aged 79, told us this:

*My mother went about teaching me how it was done. It was like that; the pots were made like this. This phase of our learning all comes from the mind, from mental reasoning. You cannot do anything if reasoning is not good. In that way, I learned from her over time... We only made pots, basins and pans, then I started to make platters, to make bowls, to make frying pans... **Now with this selling here, I had to invent other pieces, I change things a little. I get by** (emphasis added).*

We shall think about this here. This is a text constructed on dialectical movement between the theory presented here and practice in the field. In this way, there is no exclu-

sively theoretical or exclusively empirical chapter. This text, as a form of correspondence between co-researchers, features dialogue and tension, the creation of a common plan, as the cartographic approach guides us, refraining from a traditional writing structure³.

Thus, we shall define cartography as both a methodological approach and a way of giving shape to such dialogues and tensions. As we are going to delve deeper a little further on, here cartography is a project philosophy, which places on the same level the different forms of seeing the world in general and the different relationship that artisans have with their materials, in a specific way.

The other important characteristic of cartography is to bring together all these approaches in the same plan, dealing with complexity as a raw material. In practice, this text is an example of cartographic writing: theoretical reflections are woven together with the reflections of the author and the words of the co-researchers, over the course of the items.

Devising a common plan, in the face of difference

In this item we present the main analytical categories that allow us to think about the designer's shift from the role of finisher to that of mediator and promoter of cultural processes. In this movement, it is up to us to recognise the skills of our others as organic designers, that is, to identify design practice as a skill of living beings, not just those who are capable of formal thought. Designing in this way means accepting the epistemological diversity and the *autonomía* of the various worlds placed in correspondence, based on the encounter.

The traditional knowledge that we deal with deviates from the Cartesian paradigm that has segregated the complex forms of knowledge and our objective is to show how research through design needs to advance in its methodologies to contemplate forms of knowledge without mutilating them, going beyond the processes of simplification that lead to the disconnection of knowledge fields (Morin, 2015).

The proposal of devising a common plan, based on cartography as a design method/philosophy, opens the door to thinking about what is shared and what differs, and is a key point to reflect on subalterns and *autonomía* in design activity, the main objective of this article.

The collaborative turn

In the text, "Design research and the new learning", Richard Buchanan (2001) presents an overview of design research and a trend towards the shift from clinical and applied research – with the generation of products specifically (interpreting products broadly – products themselves, graphic design, service design, and any other form of result of the design process) to basic research, which he considers a systematic speculation about the nature of design,

² Ana Amélia, a craftswoman, in conversation with Raquel Noronha, in December 2016, in Alcântara, MA.

³ The postmodern Anthropology paradigm, to which I am affiliated, recognises writing as texture, composed of tangled threads that intertwine and overlap, and views writing itself as an object of research, which is explicit in pioneering reflections of Clifford and Marcus (1986) in the celebrated book, *Writing culture*, among others (Crapanzano, 1991; Clifford, 1997, 2008; Foucault, 1987).

associated with his theory, which underlies all other design activities, the core of the epistemological construction of a field of knowledge.

This change in the focus of design research is both the cause and the consequence of the shifting focus of designers from the target activities of design to the need to act as a process mediator, which Manzini (2015) points out to us as design practice. At the core of this change in design practice, which is not a phenomenon like less than forty years ago – since Papanek and his classic book *Design for a real world* (1971), environmental issues, the needs of populations at risk and developing countries (then called the Third World) were already objects of concern for design – are people involved in the design processes. Previously “users,” the social actors for whom we design take on the role of co-designers (Halse *et al.*, 2010), now sharing design activity with designers-mediators. Diffuse designers (Manzini, 2015) or organic designers (Noronha, 2017) are labels for such social actors who take active roles in the process of creating solutions for and giving meanings to the problems of their own existence in the world, without having specialised training in design. They are people who get involved in the activity of discussing and seeking alternatives to meeting specific needs, future desires, and thus, engage in active citizenship through collaboration (Manzini, 2015; Halse *et al.*, 2010).

As such, according to Buchanan (2001), thinking about the epistemological bases of design – a field of knowledge delegated to the subaltern standing of “science of doing”, according to the author, in light of the “sciences of thinking” – requires reflection about the very work of designers – designing. We believe that the greatest challenge for co-design is to resolve the hierarchies and homogenisations brought about by the very idea of science, built up from multiple subdivisions up to the imprisonment of knowledge in specific fields of knowledge.

To support this premise, we draw upon the approaches to the complexity of thinking, which, according to Morin (2015), reject the mutilating, reductive, single-dimensional, and ultimately blinding consequences of a simplification that is considered to be a reflection of what is real in actuality. The author also warns that the attempt to make what is complex simple is the wrong way to try to control nature and dominate reality, which, in this way, suffers from the disintegration of its complexity.

In the field of design, Cardoso (2012) states that recognising the complexity of the world we live in involves understanding that all parts are interconnected, such that each individual action combines efforts with the actions of others, forming movements that lie “beyond the individual capacity of any of its component parts” (Cardoso, 2012, p. 42). It is not a purely individual activity that is isolated from everything, but rather one with implications collectively. Designing in this scenario, therefore, requires a holistic approach.

In this regard, the greatest challenge of co-design is to recognise the multiplicity of overlapping worlds, territorialities, and symbolic systems that promote the healthy existence

and the dynamic equilibrium of communities, in a specific way, and of peoples and nations, more broadly speaking. As such, Escobar directs us to the concept of *autonomía*, which furthers this possibility of the imagination of futures, with special attention towards the territory in question, its customs, way of life, expectations and technologies. Escobar characterizes the territory as the space for maintaining

a relational form of existence, involving relations between people themselves, with the Earth and with the supernatural world, forms of production, knowledge and plant and livestock farming practices, healing practices, etc., which do not assume the pre-existence of separate, distinct entities (Escobar, 2016, p. 198).

Assuming the possibility of other relations with the materials, as indicated by Escobar (2016) and Ingold (2011), means establishing more neutral forms in the relationship between humans and non-humans, establishing the process of correspondence, as observed in the words of the artisan Zé Dico⁴:

And another thing, clay to work with earthenware, to work with materials, we don't get it there in the middle of the field because there the clay is no good. It is only any good like this, in the bend of the river. [...] To make earthenware, you have to use this different clay, you know? You have to clean the clay very well, see what clay you are going to remove, avoid removing it with lots of roots, let it dry up a little, to make it softer, right? As you know, you have to let it die a little, in order to be able to start working with it...

This “collaborative turn” that we observed in several areas of the contemporary epistemological production of design shows the path for the construction of collectivity as a way of reconnecting knowledge shred into pieces by Cartesianism. In the craftsman's words, we observe this vision of *autonomía* and also the criticism that Escobar makes on development, as the separation of human beings from nature and from the understanding that only financial access guarantees it:

I believe that the development of this community, locality, state or country tells a lot about how progress comes to us. What are we, as citizens, workers, contributing to build up the economy in the region? Is there development only when money comes in, when everyone can pay his or her bills and consume more and more? I understand that it goes beyond that ... And as to my quality of life, my well being, that of my family and of the group with which I live, is that also linked to this development? I believe that developing is related to evolving ... but I do not only look to the financial side, I also look to the matter of feeling happy with our achievements in our daily lives, our abilities, our professional development.⁵

⁴ Zé Dico, a craftsman, in conversation with Raquel Noronha, in December 2016, in Alcântara (MA).

⁵ Joelma, a craftswoman, in conversation with Márcio Lima, researcher of NIDA-PPGDG-UFMA, in October 2016.

Maturity, good living and collective well-being are important categories for establishing *autonomía* in a system, marking out the idea of futurity as one of the factors that would lead us to a transition. The craftswoman's awareness about the need to reconnect all spheres of life and to associate this completeness with development leads us to Escobar's reflection on Maturana and Varela (1973 in Escobar, 2016, p. 194) with regard to *autopoiesis*, directing us to the cover of the piece in which the authors call the category into question: the image of *uroboros*, the representation of the snake swallowing its tail to illustrate symbolically this dynamic equilibrium and self-regulation implicated in the concept.

Although this approach is considered by Escobar himself as a partial solution – since he considers total *autonomía* to be a utopia – the author's reflection, the craftswoman's reflection and this author's argument show paths that can be taken toward the “disentanglement of design and its unsustainable and defuturing modernist practices” (Escobar, 2016, p. 192).

Cartography of differences

In this scenario in which a rupture is created in the modern design hierarchy, being the prerogative that knowledge must be reconciled based on territory and with collective participation, we have some elements that constitute what Escobar names as *diseño autónomo*. To give voice to subalterns, we need design practice that is consistent with the polyphony resulting from what we termed *collaborative turn*.

As a contribution to this discussion, I have included some reflections on cartography as a design philosophy with regard to the construction of the common plan. For Escóssia and Passos (2013), the common plan is a cross-sectional construction, which seeks to break away from the verticality that hierarchises differences and from horizontality, which homogenises them, seeming to bring agreement and the idea of common wisdom, of community. With this perspective, towards what they claim as transversality, the common is sought, which, according to the authors:

In the context of cartography, when we indicate that the common is produced by mainstreaming achieved by participation, inclusion and translation practices, we affirm the paradox of the inseparability of common and heterogeneity ideas. We are therefore led to the unstable boundary between what is in common and what differs; between what connects the different subjects and objects involved in the research process and what, in this connection, causes tension; between what guides knowledge and what immerses it in experience (Escóssia and Passos, 2013, p. 267).

In dialogue with complex thinking, we observe that cartography features ways of investigating that favour unconventional systems of knowledge construction, which go beyond the Cartesian system, which fragments forms of knowledge into subjects, in order to control reality. In this way, the multiple layers of meanings can become evident and be seen; they do not need to be

translated or interpreted by a hierarchically more suitable actor, allowing the collective practice of designing among those who are different.

Spivak defines a subaltern as someone who cannot be heard, who “occupies the lowest strata of society constituted by the specific modes of market exclusion, political and legal representation, and the possibility of becoming full members in the dominant social stratum” (Spivak, 2010, p. 74). For the author, the task of the postcolonial intellectual must be to create spaces through which the subject can speak, in order to be heard. In her view, no one can speak for a subaltern, without running the risk of creating a representation based on hegemonic terms, by which the very way of doing science is guided, thereby obeying a dominant order of discourse.

This is perhaps the main issue in so-called postcolonial studies, according to which the actual ideas of west and east, north and south, of *autonomía* and representation are put in doubt. Edward Said (2007 [1978]), in his book, *Orientalism*, reflects on what is constructed – in the West – about what the Orient is. The difference is constructed based on a hegemonic view of the difference, that is, difference is constructed based on a previous hierarchy in the very terms of the analysis. Orientalism, according to the author, is a style of Western domination over the East, an institution authorised to engage in practices of discourse, expertly manipulated by Western (specifically European) culture, which establishes the West based on the existence of the *other*, the Orient (Said, 2007, p. 29).

This approach serves as an inspiration to dialogue with the category of *pluriverse*, brought into play by Escobar (2016), as antagonistic to the universe, which dialogues with the construction of other paradigms, based on different worldviews, which in our opinion would fall under the design paradigm to which we refer in order to design. In this way, the very category of “design paradigm” needs to be called into question, since, based on the common plan, perhaps what we understand as designing is not named in this same way, based on the views of the worlds that make up the pluriverse with which we correspond.

In the field, we left out the questions of “how do you create?” or “what are you inspired by?” or “how do you design?”, for the simple “how do you do it?”. In this research, by following leads from the method of cartography, we followed the epistemological fault line within the very notion of methodology – *metá-hódos* (path-objective) is assumed as *hódos-metá* (objective-path). According to the authors,

This reversal consists of leap of faith as to the experimentation of thought – a method not to be applied, but to be experienced and adopted as an attitude. This does not involve putting aside rigour, but rather it is given a new meaning. The rigour of the method, its precision, is closer to the movements of life or living patterns [...] Precision is not interpreted as accuracy, but as a commitment and interest, as involvement in reality, as intervention (Passos et al., 2014, p. 10-11).

Thus, adopting cartography means accepting the subjectivities of all those involved in the matter. Traditionally recognised as the science on the creation of maps, its

definition has been broadened beyond territorial maps, its initial origins, to psychological, emotional and, why not say it, methodological maps. As we saw previously, devising a common plan means the co-existence of multiple points of view about doing.

Observing what the modern design project consists of, it is considered by Escobar (2016, p. 222) as the greatest obstacle to achieving *autonomía*, due to being based on a logical and prescriptive sequence, guided by stages and prerogatives, established in a diagnosis phase. The establishment of objectives along a course of action, as proposed by cartography, is a way of suspending an important variable – perhaps the most important in the Western view – the market. If it is to meet market demands, according to which design has acted as a bastion of Western capitalism, with the aim of producing for consumption and for development, how can one think about designing without an objective specified *a priori*? How can one think about doing, instead of thinking about the design?

In this way, by placing different world views and aspirations side by side, without it being required to start the process with pre-determined prerogatives, it is possible to arrive at ways of doing and designing that consider the dynamic opening and closing of worlds that self-regulate and, due to their nature, are ready to dialogue in a full and complex way, that is, with *autonomía*. In the next item we will reflect on correspondence experiences when designing with craftsmen and craftswomen, negotiating the establishment of a common plan and recognising the complexity of the different skills of our *expert designers*.

Recognising the other's skills

In anthropology, the informants, the subjects of the research, are traditionally called natives. Whether they are people residing in distant places or the subject of conducted research is right next door, it was always important to differentiate who researches from who is researched. In this item, we present some situations experienced in the field that call into question the state of modern design. In design, famous is the position of the designer referred to by Wright Mills (2009 [1954]) in his essay, "Man in the middle: the designer", which the American sociologist characterises as central, from which creative power emanates, as well as the possibility of construction of other realities, based on the vision of this professional: we live in second-hand worlds, according to the author. This "power", which determines where, when and what is produced and consumed is gradually deconstructed over the course of this item, which triggers a theoretical discussion in correspondence to the cartographic path.

Being in the field, doing research on design through anthropology, dialoguing with two epistemological approaches that seem opposed – in the sense that design seeks an applied result and anthropology consolidates its practice into a theoretical result – means reflecting on the limits and the scope of our skills as process drivers, when assuming ourselves to be expert designers in contact with

diffuse designers (Manzini, 2015). According to the author, we all possess the ability to design, moulded by specialised knowledge in the former case, and forged by everyday practice, in the latter. Assuming this prerogative means considering ourselves as natives too, thereby giving up the leading role of researcher or designer. And it also means us being the *others* out of those people with whom we are willing to co-design. We must give others freedom so that we can be questioned, analysed and discussed, thereby placing ourselves – tactically – in a position to mediate the exchange of knowledge among handicraft communities.

In this item, we adopt the ideas and relations between strategy and tactics, as put forward by Carl DiSalvo (2009). The former concerns structures of power, applied institutionally and prescriptively to shape practices and customs, referencing the work of De Certeau, *The Practice of Everyday Life*. In contrast, "tactics are means developed by people to circumvent or negotiate strategies towards their own objectives and desires" (De Certeau in DiSalvo, 2009, p. 52). In this way, our course of action does not fail to be supported by its institutional nature of creating based on a design methodology – although in broad terms and marked by the proposal of being non-prescriptive – but aims for a form that enables improvisation, adherence to the drivers of the co-researchers, in the sense of devising a common plan, through attention and interest, as guided by Ingold (2018).

In this way, we also work on the tactical side; in the next subitems we will discuss practical, theoretical and methodological experiences of this construction of the common plan, bringing narratives about being in the field and doing things together.

Characterising the field and co-researchers

The field of research in which we operated is a vast region comprising about twenty thousand square kilometres, covering twenty municipalities affected by intense rainfall and drought as part of the Amazonian climate, spending about six months with flooded fields, known as the Maranhão Lowlands. In this environment, with these climatic conditions and great shortage of materials, we worked in seven municipalities, as per the cartography shown in Figure 1.

In the image, linked by the purple spots, we have the villages where we engaged in "sifting for knowledge". We called these meetings Clay Sifting and Guarimã⁶ Sifting, emphasising the materials with which they work. We co-researched with about seventy artisans. We worked over the period of two years, weaving fibres, kneading clay, and corresponding to the needs and the wishes of each one. If they are our *others*, our natives, we also had to place ourselves in this role, in order to be their *others*. And we were made up of twelve undergraduates, four master's students and four faculty members from the Maranhão Federal University design course.

As we said in the introduction, this research consisted of the exchange of empirical knowledge about traditional knowledge and practices of this region, but this was not possible to define *a priori*, as required by the funding ap-

⁶ Ischnosiphon arouma.

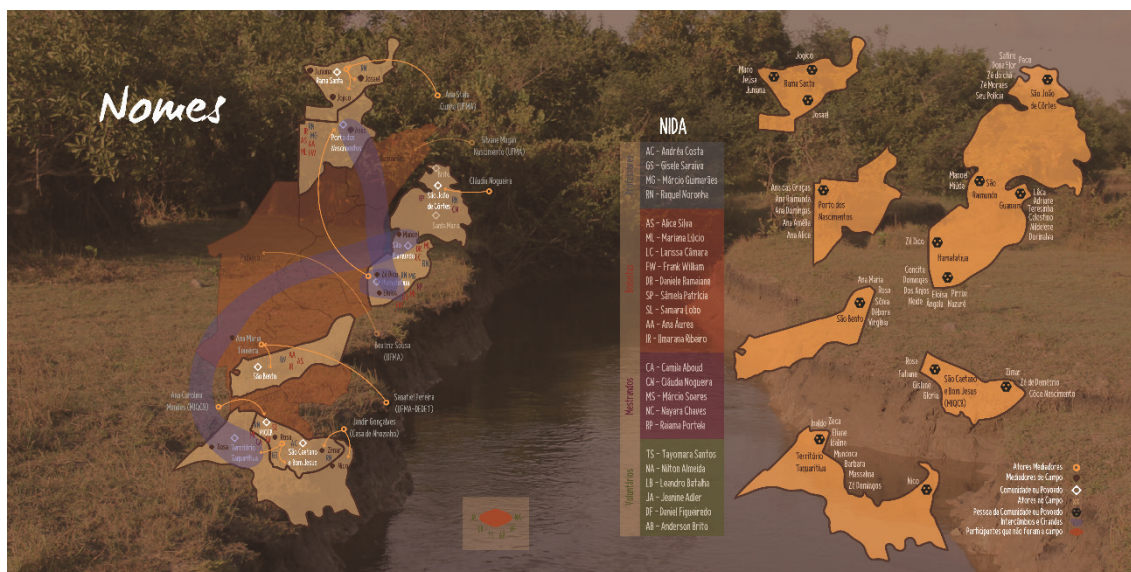


Figure 1. Cartography of names and places.

Source: Noronha et al. (2017b, p. 20-21).

plication notice. It took a complex justification – based on a research method that is not very common and poorly exploited in the field of design, cartography – for us to formulate, *scientifically*, the justification that the specification of the “target group” of the project would be a result, since there was no previous mapping of the entire region. This was an inversion of the very way of involving a design in the process of applying for public funding. As the research progressed, as we shall see below, the co-researchers devised themselves, with the establishment of bonds of attention and trust, based on *response-ability*, our mutual ability to give responses to each other.

Creating trust and attention

The cartographic method (Noronha et al., 2017a), which we put forward with contributions from geography, social sciences, philosophy, psychology, involves the devising of a common plan, as we saw in the previous item and thus, establishing bonds of trust. Many artisans who we did not know, accepted getting in our car, even being in short time in each other's company, to spend a few days in another community, which they also did not know, just driven by the desire to know more about their own knowing-doing.

This willingness means trust that was built up in a very short space of time in some places and more slowly in others. This inclination to correspond to what we proposed, could either happen or not, for the construction of a common plan. It was stated in our project that we would do this, but how could we guarantee that the artisans who we were yet to meet would accept the proposal to exchange knowledge with other groups?

Following the cartographic leads and the practices of correspondence, we created tactics so that we could devise

the common plan. The directing of attention, in the process of devising what was common, was the first tactic used. Previous publications, the film about earthware knowing-doing in Itamatatua, which we produced in 2013/2014 and the use of handicrafts were the initial tools that helped us to present the project in groups we did not know. Materiality, as a record of what has already been done, inspired trust in many groups. The visual, material evidence, as well as the raw material that they use to devise their projects, places us on the same level – people who do things. Our “designing skill” was put to the test on many occasions. In this testimonial below, the design idea is compared with manual work:

I have it like this in my memory and I spend my time doing, you know. And I spend my time doing every day. I'm forty-five, the entire time working with clay. You don't have that kind of experience, right? Both here in my head and in my hands, working with my hands... Because at times, you're a professional, but you don't get your hands wet to do it. You have studied, you have the design in mind, in your head: ok, do it like that ... but you don't have that ability to reach out with your hands and do it...⁷

Zé Dico is a craftsman who works with clay and learned this knowing-doing from his father. The whole time that we followed his work, he made a point of differentiating himself from us, due to his ability with clay and what he calls design: an idea that is in one's mind. The *intelligent hand*, as Richard Sennet (2009) tells us about craftsmanship, connects what is in the mind with the material.

This experience helped us to reflect on the pluriverse that means designing. For us, it is an action that begins

⁷ Zé Dico, a craftsman, in conversation with Raquel Noronha, in December 2016, in Alcântara, MA.

today and progresses towards the future. For Zé Dico, it is something that comes from the past and is materialised in the present. This is an initial synthesis regarding *autonomía*: the valuing of the present time.

Another important issue here debated is about the clue of trust. Considered by Passos and Escossia as an important step to construct the common plan, the way we found to actually get in touch with our co-research was showing them that we could respond to their knowledge. Changing our knowing-doing with them, we arrived to a common place – marked by differences – but a plan where everyone have their own experience, what will be better explained in next item.

Producing based on foresight

In the field it was possible to observe how there is a common thread that combines creativity and imagination, associated with the practical experience of knowing and doing. This association, what is transmitted orally and reaffirmed by hand, is what characterises craftsmanship. The characteristic of *foresight* – in the words of Ingold (2012, p. 6) – this movement of seeing forward, which characterises designing, is what makes the imagination process possible. When designers reach communities, they already find a way to produce based on this foresight of the result, of what is expected by the *other*. However, for Ingold, these forms of foresight – the designer's and the artisan's – differ as follows:

This is work [of the artisan] that calls for both skilled vision and manual dexterity. It also calls for foresight. But this is foresight of a very different kind from that which the argument from design attributes to the designer. It lies not in the cogitation that literally comes before sight but in the very activity of seeing forward, not in preconception but in what the sociologist Richard Sennett, in his study of the work of the craftsman, calls anticipation: being 'always one step ahead of the material'. [...] This is a matter not of predetermining the final forms of things and all the steps needed to get there, but of opening up a path and improvising a passage. To foresee, in this sense, is to see into the future, not to project a future state of affairs in the present; it is to look where you are going, not to fix an end-point (Ingold, 2012, p. 6).

Thus, another lead about the design idea arises from reflections in the field, which make us research subjects. Weaving relationships corresponding to almost ninety different wishes became the main goal of the maps that we devised over these two years of work. If to correspond is to walk side by side and follow flows of materials as Ingold states (Ingold, 2011), to look and be looked at, to do and to let the other do, how can there be the possibility of doing in the *correct form*, or rather, how can one establish a *correct-way-of-designing*?

This point must be resolved, as Escobar (2016) discusses regarding the prescriptive way of designing in the modern approach. Following each other, co-designers could find specific ways of knowing and doing, beyond the unsustainable top-down methodologies.

Deconstructing established categories

Another adopted tactic is the deconstruction of what the actual application notice requested of us: talking about social technologies. Among the craftsmen and craftswomen with whom we devised these maps, only one woman pronounced the word social technology. And what does that mean? That there are no social technologies in the Maranhão Lowlands region? No, much to the contrary. We heard many other words characterising the process that is called social technology: *oral learning, from the elderly; an idea I had while practising; to get to know clay, we must test it, smell it; I plan and think about what I need to create; I dream about the images that I am going to shape; I see the images that I am going to shape in the mildew on the wall; I learned everything I know from my father; I learned by myself, by doing; my head commands my hand.*

According to Maciel and Fernandes, working with the concept of social technology implies working with social transformation and a sense of social inclusion, improving living conditions, meeting social needs, social and environmental sustainability, innovation, the ability to meet specific social needs, organising and systematising technology, dialogue between different forms of (academic and popular) knowledge, accessibility and appropriation of technologies, dissemination and educational work, encouraging active citizenship and democratic processes, the search for collective solutions, among others, which are supported by the values of social justice, democracy and human rights (Maciel and Fernandes, 2010, p. 9).

Thinking about the very term, "social technologies", is enough to provoke restlessness: knowledge, understanding derived from a craft, which is the etymological basis (Cunha, 2009) of the word, *technology*; it already includes – *a priori* – a conception of "social". This classification of types of technologies, differentiating and specifying what is not created based on scientific methodologies, but which come into being based on putting knowledge into practice, on continued doing, creates hierarchies favouring what Mignolo (2005) named as coloniality of knowledge. It is only possible to construct knowledge based on a single epistemological reference, the one to which we are bound, colonised by: the western scientific paradigm. What does not fit into this scope must be qualified as social so that it can be admitted as another form of science.

Regarding these issues of knowledge hierarchies, in addition to the postcolonial studies, Latour (2008), Marcus and Rabinow (2008), and Cunha (2009) are inspirations when thinking about these strategies for limiting the institutions that govern the terms according to which what is termed as technology is simply formed. The experience of knowledge sifting meetings brought to the surface localised practices, different forms of knowledge construction, based on the relationship between all the actors involved in the research, what Ingold calls *storied knowledge*, – knowledge that is the way it is because it underlies lived experiences that make it so, this way and not otherwise (Ingold, 2011, p. 168). This knowledge locality brings us face to face with specific practices involving echoes, ties and dialogues when put in contact, with encounters between

artisans from different localities, but who work with the same materials.

Corresponding to materials

"Now we are sisters through guarimã" was an affirmation by a craftswoman from the Gamella indigenous community to a craftswoman from São Raimundo, both working with guarimã fibre in basketwork. The material acts as a bond, creating meshworks of knowledge, even if the way of handling it is different: the indigenous people undertake "cleaning" (removing the fibre from the cane stalk) with their feet, while the artisans from São Raimundo clean guarimã with their mouths. The consequences of these two ways of doing are different, with respect to the loss of teeth, cuts to the feet or to the lips, to postural issues, giving rise to specific back pains (Figure 2).

The form of weaving guarimã abides by fairly objective mathematics, as concerns the making of the tapiti, a kind of bag that has the function of kneading cassava dough, by twisting it, cassava being one of the basics of local food. In São Raimundo, yarns are made up of four fibres for each one and, for the Gamella, three fibres for each one. This count gives rise to tighter weaving and a larger tapiti in the first group, and a looser, smaller tapiti in the second. This means a greater or lesser use of raw materials. Currently, among the Gamella, there are no longer any reserves of the raw material, since indigenous territory has been occupied by farmers, who removed the native vegetation to give way for grazing. The environmental impact caused by this expropriation affects guarimã groves, which no longer exist in the region. Tactics for continued existence of knowing-doing are created, although they give rise to other types of impacts, as we observed in the production of tapitis, which are currently made of plastic, with sealing strips from reused boxes (Figure 3).

In a conversation with the Gamella community, we evaluated the impact of the change in materials, and the

issue of food security was stated as a challenge, since plastic eventually dries out and leaves residues in the cassava dough. What is the solution? Recreating areas of guarimã groves, which requires time and public investment. In addition, to access such resources, it is necessary to hold title to the land, which they do not officially possess. Territorial disputes in the region have triggered violent conflicts, which had repercussions nationally in 2017, hampering access to natural resources by the Gamella. The political issue presented can be thought of in light of the *autopoiesis* category, when new practices are introduced into a community to safeguard other more important ones, although new ones break with tradition in some way, by "changing tradition traditionally", as Escobar indicates (2016, p. 197).

In our conversation about this process of change in materials, one of the leaders of the recovery process, as they call the reconquering of their traditional land, reflected on how this change has negative impacts on their "image" as indigenous people, since it may show that they do not engage in traditional basketwork. The use of plastic may imply distancing from traditional practices, even though it is a practical solution to the absence of guarimã in the vicinity of the territory.

This episode concerning tapiti materials demonstrates to us the instigation of a world view that pigeonholes indigenous peoples in closed discourses about the very idea of being indigenous, having to fulfil requirements of a material nature – using guarimã in craftsmanship, making headdresses, living in huts – not as forms of a reconnection with their lands, but so as to satisfy requirements regarding land and identity recognition that the Brazilian state imposes, a subject that has been examined in depth on other occasions (Noronha *et al.*, 2017a; Noronha, 2017; Noronha, 2015).

This example from what we discovered in the field shows how we are tied down and how we hold captive our



Figure 2. Guarimã Sifting cartography.

Source: Noronha *et al.* (2017b, p. 96-97).



Figure 3. Tapitis made of guarimã and tapitis made of plastic.

Source: author's archive.



others in ideas such as sustainability, for example. In light of what we understand as something sustainable, working with plastic can seem to be a huge contradiction, but if we observe the use of plastic as a tactic to maintain the knowing-doing of craftsmanship, we can relativise the environmental impact through the cultural and symbolic impact. These negotiations lead to the culture staying alive, with updating and self-regulation. Dichotomies such as right and wrong, sustainable and unsustainable need to be blurred, and thought of in a complex way, thereby mapping the discourses and practices that constitute the points of view involved in the issue.

Provisional observations

By researching the calling of design into question, adopting the strategy of devising a common plan, with cartographies, we ourselves – as designers – take on the role of natives in our research. This is not something new in the field of anthropology: reflexive research that calls into question the researcher's place in the research itself indicates paths to be followed. And one of them is the process of becoming familiar with what is different and shunning what is familiar. This process opens doors to calling into question our initial analytical categories, our theoretical assumptions and places us in contact with the assumptions of others.

We recognise in our cartographic path the building of a common plan with the various strategies of discourse that play a role in correspondence based on dialogues about the knowing and doing of designers and artisans. Based on this mapping, we brought into play a series of tactics that seek dialogue based on the references of others, different from those established *a priori*, in our strategies for action. The table below summarises the challenges of thinking about the construction of storied knowledge, each based on the lines weaved along the life of each co-researcher in the field, triggering the analytical categories and the tactics devised in the field to think about *autonomía* in collaborative practices (Figure 4).

Regarding the challenge of devising a common plan, Ingold (2018) argues in his most recent book that the practice of correspondence is based on a process of attention towards the world, in which people devote themselves to

responding to what interests them, thus building up the environment based on what is the product of attention. Regarding the process of creating this variation collectively – what determines environments of common interests, thinking about the construction of an educational community – the author reflects:

the educational community is held together through variation, not by similarity. It is a community – not just a living together, but literally a giving together (from com-, "together, plus – munus, 'gift') – in which everyone has something to give precisely because they have nothing in common (Ingold, 2018, p. 6).

What we have to give, our difference, what we do not have in common, as the author points out, is what establishes the basis of the cartographic plan. The common plan does not mean neutral ground, but an arena in which differences are formed with balancing forces, in which these different sorts of storied knowledge are negotiated and thus the terms for their own creation are established. Based on this premise, we launched ourselves into the field, willing to deal with differences.

Based on this strategy – recovering DiSalvo's category – it was possible to put in motion the tactics of directing attention, which establishes the perception of the different form of *foresight* – that of the designer and the craftsman – which lead us to adopt at least two ways of designing: based on imagination of the future or by tracking materials, in their process of transformation. Following materials in their flows leads us to dialogue with the category of correspondence – key for us to create *autopoiesis*, as a form of self-regulation in relation to the various worlds that we access by following the flow of materials, as our co-researchers proposed to us.

What came to us after two years of exchanging knowledge and creative practices is that the very basis of what we were looking for was built upon an epistemological reference that imposed limits on the discourse of our others, at least not in their terms, but in ours. And this has as causes the way the project was devised; the very terms of the application notice to which it was submitted; what we found in the field with the people with whom we built relationships; with the tools we used/devise to mediate

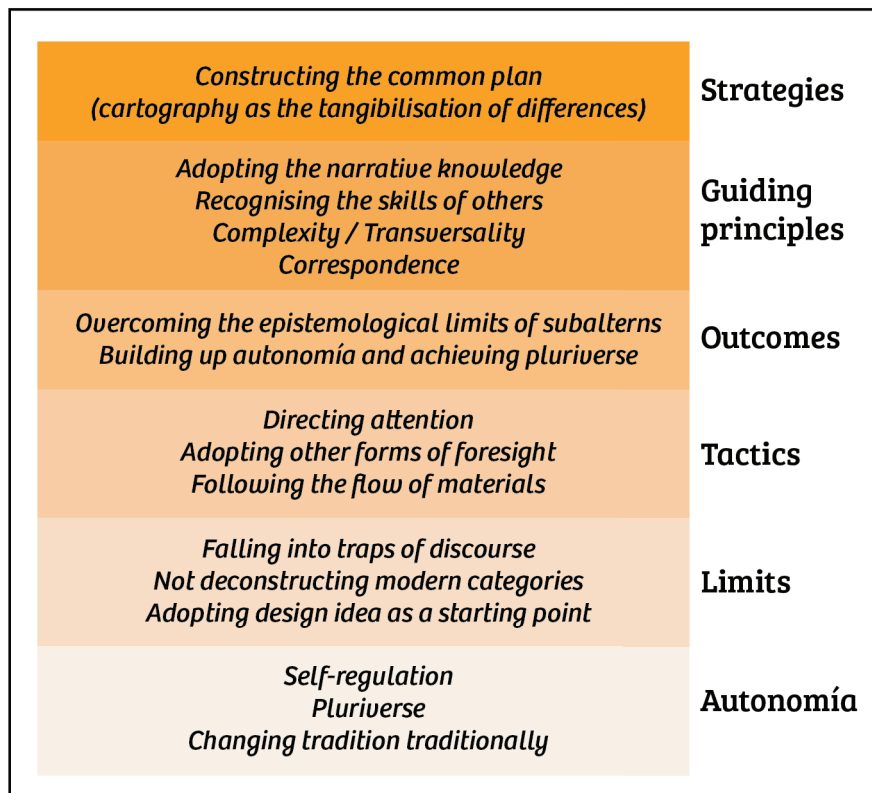


Figure 4. Collaborative turn towards *autonomía*.

processes and, lastly, with the form we choose to give visibility to cartographies: two-dimensional maps organised as a book.

Co-researching means the enlargement of the starting points and the incorporation of terms previously not incorporated in design practice, with the calling into question of the research and design itself. Thinking about autonomous design is to incorporate tactics and strategies that are devised in correspondence, based on mutual interest. The temporality in which this construction of the common plan takes place is a great challenge to the way that Western science envisages the conducting of a project, its technical accountability and the – stratified – form of dissemination of its results as the only means of communicating what has been done.

Acknowledgments

To FAPEMA for funding this research project and enabling this results; to craftspeople that took part in our invitation to make things together, as well all Nida-UFMA's researchers and students, who are always engaged in these *siftings*. Thanks a lot to Caroline Gatt, Tim Ingold and Zoy Anastassakis for the shared ideas and to the editors of this issue for the accuracy and care with the text.

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Submitted on December 15, 2017.

Accepted on May 19, 2018.