

Thought under construction: Excursus on the possible methodological machinations of Sérgio Ferro to guide Production Studies in Architecture, Design and Labour

Pensamento em construção: Excurso sobre as possíveis maquinações metodológicas de Sérgio Ferro para orientar Estudos de Produção em Arquitetura, Projeto e Trabalho

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Abstract

The written work of Brazilian professor, architect, and painter Sérgio Ferro has been increasingly visited, studied, and commented on, not only in Brazil and France – the country in which he went into exile, when he left Brazil in the early 1970s, due to the civil-military dictatorship that befell the country in that period – as well as in other parts of the world. The attention devoted to Ferro's theoretical work seems to derive from the way he approaches his objects and gives them a critical and theoretical treatment, particularly instructed by Political Economy, Hegelian Logic, and Marxian dialectical materialism. Taking as a starting point the material bases of his production, both in architecture and in the plastic arts, his fields of historical and research and theoretical reflection advance through fields previously hitherto unexplored, putting well-established and widely consolidated concepts on trial. This work tests some conjectures about the author's methodological strategies, seeking to establish references for the institution of a new field of studies in Architecture, Design, and Work, which we are calling Production Studies.

Resumo

A obra escrita do professor, arquiteto e pintor brasileiro Sérgio Ferro tem sido cada vez mais visitada, estudada e comentada, não só no Brasil e na França – país em que se exilou, ao deixar o Brasil no início dos anos 1970, em virtude da ditadura civil-militar que se abateu sobre o país naquele período – como também em outras partes do mundo. A atenção dedicada à obra teórica de Ferro parece decorrer da forma como ele aborda seus objetos e lhes dá um tratamento crítico e teórico, particularmente instruída pela Economia Política, pela Lógica hegeliana e pelo materialismo dialético marxiano. Tomando como ponto de partida as bases materiais de sua produção, tanto da arquitetura como das artes plásticas, seus campos de investigação e reflexão histórica e teórica avançam por campos até então insondados, recolocando em julgamento concepções já consagradas e largamente consolidadas. Este trabalho ensaia algumas conjecturas sobre as estratégias metodológicas do autor, buscando estabelecer referências para a instituição de um novo campo de estudos em Arquitetura, Projeto e Trabalho, que estamos denominando *Production Studies*.

Thought under construction: Excursus on the possible methodological machinations of Sérgio Ferro to guide Production Studies in Architecture, Design and Labour

In November 2014, at an academic event at the University of Newcastle (UK) – the Industries of Architecture Conference – IoA – an audience of about 50 people applauded the reading of “Dessin/Chantier – an Introduction”¹ – a very condensed version of the main ideas of “O Canteiro e o Desenho”, a text of the architect, professor, and painter Sérgio Ferro, published in Brazil between 1974 and 1976². Sérgio was invited to the opening conference, but due to a health problem, he was unable to attend the meeting. Thus, Katie Lloyd Thomas, one of the organizers of the event, read the text while the images of the original in Portuguese were projected, closed by a well-known photo of the author. I record here, not only as a testimony, but as the impression that there was an unprecedented attention to the theoretical reflections, on British soil, of a Brazilian architectural theorist who was not always properly recognized or understood in his native land.

At the beginning of October 2020, as a result of that 2014 event and countless transnational academic articulations, we started an undertaking that has been planned for at least six years: it is about promoting the translation and dissemination of Sérgio Ferro's theoretical work in English. An author of a very singular, provocative and very strict critical approach to architecture, reasonably known in our country (but little understood, as we have already said), Sérgio Ferro's work is, for the most part, only published in Portuguese. Something in Portuguese and French and a small part exclusively in French. However, apart from some recent initiatives, already resulting from the effort to set up the project “*Translating Ferro / Transforming Knowledges of Architecture, Design and Labour for the New Field of Production Studies [TF/TK]*” (as presented, in this publication, by my colleague Katie Lloyd Thomas – the same one who read “*Dessin/Chantier – an Introduction*” at the ope-

ning of the IoA, in 2014), there are practically nonexistent versions of his texts in English.

The proposal, however, is not restricted to the translation and publication of Ferro's texts and the promotion of some reading and discussion meetings with academic colleagues who speak English. The idea is also to identify, select and articulate studies, texts, or reports of practices that, in a certain way, dialogue with the assumptions that guided (and guide) the formulations of Sérgio Ferro (and Grupo Arquitetura Nova, of which he was one of the members), as he himself insists on sharing³). In addition, TF/TK also proposes the production of studies and reports of specific practices, initially distributed among Associated Researchers, guided by approaches aligned with Sérgio's work. This is what we are calling Production Studies + Production Practices. The idea is to outline a new field of studies (and to recognize practices) that feed on Ferro's methodological strategies.

But, what would Production Studies be? What is peculiar about the way Sérgio Ferro takes his objects and how he builds his thoughts about them? What is the methodological differential that characterizes this true 'reflection construction site' in Architecture proposed by Sérgio before the concepts and his disconcerting movements?

What I am essaying here is a still very imprecise approach to an answer to these questions, ready for debate and contradiction, the result of a dialogue with the author, more or less interested in establishing some possible alternatives for this inquiry. More than that, these conjectures intend to help in the preparation of some guidelines to adjust the focus in this formulation still very diffuse – the Production Studies.

I

Since his teaching days at the Faculty of Architecture and Urbanism of the University of São Paulo (FAUUSP) and beginning his professional activity (something still reconcilable in those times), Sérgio Ferro has systematically produced a theoreti-

¹Published in LLOYD THOMAS, K.; AMHOF, T.; BEECH, N. Industries of Architecture. London: Routledge, 2015.

²The complete edition, published by Projeto Editores Associados, is from 1979. Before it, the text had already been published in two parts, in the philosophy magazine *Almanaque: Cadernos de Literatura e Ensaio* (published by Editora Brasiliense and which had professor Bento Prado Jr as a member of its Editorial Board), under the title “*A forma da arquitetura e o desenho da mercadoria*”, in 1976. See presentation note on “*O Canteiro e o desenho*” in *Arquitetura e Trabalho Livre* (FERRO, 2006 p.105).

³Regarding the group, its members – in addition to Sérgio Ferro, also Rodrigo Lefèvre and Flávio Império – and about the folds and unfolding of their performance, see, among other works, that of Ana Paula Koury, “*Grupo Arquitetura Nova: Flávio Império, Rodrigo Lefèvre, Sérgio Ferro*”, published in 2003; and that of Pedro Fiori Arantes, “*Arquitetura Nova: Sérgio Ferro, Flávio Império e Rodrigo Lefèvre, de Artigas aos mutirões*”, from 2002.

cal, reflective (almost obsessive - work himself) dominated by a “mantra”), much of it related to the relationship between the construction site and the drawing, the logics of production of the “architectural object” as a *good*, the history of architecture and art as cultural manifestations related to the dynamics of production of the goods, the potential of *free work*, etc. He assumes, for his approach to the history of architecture, that it is not only possible but necessary to understand it from within the construction and make its history go through the lens of political ⁴economy so that we can understand how it promotes and operates the *overdetermination* mechanisms established by the way of production and reproduction of life. This is the only way, according to Ferro, to understand how architecture, as a productive instance immersed in the world of material reproduction (and not in an ethereal 'reality' of purely theoretical formulation and bearing an alleged 'own rationality'), plays a fundamental role in the mechanics of reproduction of value and accumulation, through its radical capacity to exploit labor and extract huge masses of surplus value, both absolute and relative.

The argument is well known: because the construction is a special manufacture, which entails an expressive and extensive application of intensive labor, it allows the capture of high rates of surplus value, transferred in a preliminary way to other economic segments, especially those without the possibility of *labor* intensive agency – this is the only activity capable of producing value⁵.

In addition, the construction site is a special production structure, different from the factory due to a condition inherent to its particularities: as already pointed out by Benjamin Coriat, in civil construction the production line is the one that moves to create the product that is born immovable – unlike the factory, where the product is

on the production line⁶. This stems from a series of implications – which we do not need to go into here: the overdetermination of land ownership in the production process in civil construction, the limits of strict industrialization in this economic sector⁷, the susceptibility to the dynamics and oscillations of the labor market for agency and application of labor, etc. But when we look at the construction site as the main productive moment of any and all architecture, it seems clear to us how externally determined its development is in the course of history and how much it disappears as a productive reality when the finished work is imposed – and it seems this is precisely Ferro's resource for understanding the movements of design and the construction site: history as a *process in process*. This is my **first conjecture** as to its possible methodological machinations.

Factual history undoubtedly offers us the possibility of referring to events in time and space, allowing for more in-depth analyzes, beyond the ground of their apparent manifestations. However, what articulates such events? Would it be possible to reference some inherent and internal rationality to the facts if the material of its manifestations is found in the underworld of the kingdom of appearances – what makes this rationality irritatingly transparent?

II

First of all, Sérgio's research is not limited to the *History of Architecture*, in its strict sense. In addition to laying the foundations for speculative thinking in Hegelian dialectics, as well as in historical materialism and in the critique of Political Economy constructed by Marx, Sérgio also summons the history of art, technique, and construction to combine the material dimensions of the production of the architectural object to its inquiry as a product of Culture. Not only that, the author also articulates strategic approaches to formal logic in Philosophy (such as the *abduction*

⁴“We believe that it is from the analysis of construction, in its entirety, within the political economy and, then, from the architecture within construction, that we will be able to correctly understand this activity of ours: drawing, designing” (FERRO, 2010 p.13).

⁵To understand this process – which for me has always been very nebulous until – I suggest reading Lucia Zanin Shimbo's doctoral thesis, “*Habitação social, habitação de mercado: a confluência entre Estado, empresas construtoras e capital financeiro*”, of 2010. In it, the author reveals to us how the financialization processes and the game in the capital market are supported in the control and production mechanisms at the housing construction site in that period, transferring such masses of surplus value to the spheres of speculation and capital reproduction in the form of fabulous negotiations in the capital market and real estate portfolios – all of this thanks to a public housing provision program, “*Minha Casa, Minha Vida*” (SHIMBO, 2010).

⁶Bernard Kündig can say that, due to the fact that we are forced to use land as a support for use value, it is the work process itself, and in its entirety, that “circulates” and must adapt to a different support, unlike other industries where the product circulates between the work stations of a stable and previously planned work” (CORIAT, 1983 p.3).

⁷That is, industrialized manufacturing of its products, considering mechanization and/or intensive automation of operations and processes. *Dymaxion House* (1946) by Richard Buckminster Fuller, for example, would require another structure of land ownership in order to become viable: a proposal for a highly industrialized, light, and transportable construction, but which would require a distribution framework of the location quite different from the current one (see <https://blogs.uoregon.edu/dymaxionhouse/a-house-is-a-machine-for-living-in/>).

exercise, from Peirce's semiotics, for example, to account for the analysis of the Medici Chapel in Florence – see FERRO, 2016⁸), from Structural Anthropology (such as the reference to Lévi Strauss's “*type zero form*”, to enunciate “the priority reason of drawing” at the time of production – see FERRO, 2006 p.109), of Sociology and Political Science (to analyze the housing production in Brazil – *ibid*, p. 61-101) etc. But it is in the material of History, properly speaking, where he searches carefully the references for his reflections. He himself, once commenting on the preparation of “*Concrete as Weapon*” (FERRO, 2018), said he had faced the reading of “a 600-page brick on the history of anarchism in France” to use a single paragraph of it.

At first glance, it seems certain that Sérgio Ferro achieved an original way of reconciling the narratives of Architecture historiography with the most critical approaches to Political Economy. As Harvey says on Marx facing the classic tradition of Political Economy, when looking for his “gaps and contradictions” he was able to have “what we now call deconstruction” of his arguments, providing him with the elements for his radical criticism (HARVEY, 2013 p.15). I think that Sérgio sets forth on a similar operation, in a second order: he looks for “gaps and contradictions” in the classic narratives produced by Architecture historiography and, from the perspective of Political Economy, he turns this historiography inside out, rewriting it from the bottom up, from the point of “view of the construction site”.

In classes held at FAUUSP, in April 2004 and compiled in the volume “*A história da arquitetura vista do canteiro*” (published in 2010), Sérgio manages to reestablish the separation between design and construction and the emergence of a kind of

ancestral form of the profession already in the process of resurgence of cities, between the 9th and 11th centuries in central Europe – and not in the Italian Renaissance, as traditional historiography does, establishing the figure of Brunelleschi as the patron of the trade, largely because of Vasari's admiration.

Medieval corporations, which were used in the construction of cathedrals, walls, and castles, acted to contribute to carry large amounts of value to the rising urban centers. As Ferro says, quoting Le Goff, these structures were not objectively built on the grounds of a purely economic function, but they certainly worked as an “engine of primitive capital accumulation”. The wealth brought to the cities circulated by paying for materials and workers, who “ate, dressed, consumed local production, thus forming an urban market”. Such a process, promoting cities economically, ended up undermining the motivations that led kings, nobles, and bishops to invest in those structures: intra-urban trade, foreign trade, and urban business become more attractive as an economic activity, relegating cathedrals to second plane, dooming them to their typical unfinished nature. Thus, labor relations begin to change, especially around the end of the century. XII. Henri Pirenne, in his “*História Social e Econômica da Idade Média*” is valuable in describing these changes: with the predominance of business, corporations are subject to commercial and investment structures that are exogenous to them, providing a new format for manufacturing organization through commercial corporations (PIRENNE, [1933] 1968, particularly p.49, 184 and ss).

Sérgio Ferro mentions the case of Strasbourg and the construction of its cathedral as an example: the city “became a kind of Republic and the negotiations ended up becoming more complex. A council directed the works [of the cathedral] and, in order to reach a consensus, to draw beforehand, to make models, to predict started to be a requirement. Thus, the figure of the intermediary appears, which designs the design-contract” (FERRO, 2010 p.16). Sérgio calls him “protoarchitect” and mentions the figure of *Master Erwin of Steinbach*, responsible for transmitting the orders of the contractors to the masters of the corporations, as a kind of ancestor to the profession – later transformed by Goethe and the neo-Gothic movement as the “great hero of Gothic architecture.” From then on, this separation between the one who designs it and those who build it will only go deeper. He does not place Brunelleschi (and his cunning in controlling construction site work at the San-

⁸In this work, translated from the French in 2015 and published in 2016, Sérgio promotes a reconstruction of the entire context around the design and construction of the Medici Chapel, in the Basilica of San Lorenzo, in Florence, undertaken by Michelangelo and his ‘workers’. From this effort to reconstruct a very peculiar time and space – using observation, general history and art, elements of sculpture, material science, literature, etc. – Sérgio allows himself to recompose the sorting of the order and the answer given by Michelangelo: the constrained work of the architect, registered in the adornments and negations of the orders of the false support of decorative elements, in permanent tension with the free work of the sculptor, who allows himself laugh there at his contractors, mock their figures and allow himself to leave pieces of the work without finishing. The recomposition of this context that allows a type of logical inference, even if as an estimate – which I have indicated here as *abduction* – it is an operation attributed to Peirce, which José Ferrater Mora calls “reasonable conjecture”: “the mental processes, both of discovery and of justification or explanation are inferential. This means that there may be reasons for inferences (which are themselves ‘reasons’), even when propositions are formulated or conclusions are reached apparently by mere ‘conjecture’ or ‘intuition’” (MORA, 2004 p. 11-12).

ta Maria del Fiori) as the inaugural matrix of the profession and this separation, but he does place him as an important reference in this process:

“Thus, since the time of our patron saint (almost all architectural stories mention Brunelleschi as the first prototype of our profession), drawing has become a weapon in the class struggle. He started quietly leaving the construction site, from which he was for a moment. Soon, enthusiastic about the vision of the whole that he made possible and with the charms of his graphic freedom, he moved away from the technical requirements of the work and the materials it, however, commands” (FERRO, 2010, p.19).

It is in this way that, brushing “history against the grain” (BENJAMIN apud CONTIER, 2010 p.104), Sérgio manages to demonstrate, as in this example, that the “architect and separate design were constituted at the same time, and one is the product of the other: they are interdependent” (FERRO, 2010 p.14). And it is this interdependence that characterizes and exposes the contradiction between design and construction site – and not a paralyzing *opposition*, which would interrupt History as a *process* and *Reason in motion* (this is Hegel, we will return to this question later).

In a way, the methodological approach promoted by Sérgio Ferro sponsors this unveiling of contradictions. It does not happen mechanically, but it has always been problematized and problematizing itself. This means that, at first, it does not follow a pre-defined scheme, but self-builds in the process of its constitution. In a way, it is as if, poking at it, history itself reveals what underlies it as a structure. Something perhaps like what Marx proposes in the afterword to the second edition of “*Das Kapital*”, when establishing the difference between research method and exposure mode:

“Without a doubt, one must distinguish the exposure mode according to its form, from the investigation mode. The investigation has to take hold of the material [Stoff] in its details, analyze its different forms of development and trace its internal nexus. Only after this work has been completed can the real movement be properly exposed. If this is done successfully, and if the life of the matter is now reflected ideally, the observer may have the impression of being faced with an a priori construction [that is, a timeless form of thought]” (MARX, 2013 [afterword of the second edition of “*Das Kapital*”, from 1873] p.90 - the addendum is mine).

So, I come to my **second conjecture**, derived from the first one: to take History as a process, in motion, we need to take “the material in its details” and “trace its in-

ternal nexus”, not in search of what we see, what it seems to be, but in search of its most intimate *contradictions*.

III

We know, through testimonies by Sérgio Ferro himself, how much Hegelian *Logic* and the conception of *dialectic* that is peculiar to him support his investigative endeavors.

Hegel, according to Marcuse⁹, established as the first task of his *Logic* to define *speculative thinking* as the “first exposure” of his dialectical method (MARCUSE, 2004 [1941] p.52): before “the authority of facts”, Reason has to have mistrust as the norm. Opposed to common sense, the world of perceptions, of finite entities, “ruled by the principle of identity and opposition”, thought needs to be attentive. Ultimately, this opposition is one that arranges, in opposite fields, *Reason* (*Vernunft*) and *Understanding* (*Verstand*): an operation that underlies all of Hegel's philosophical architecture and that puts into judgment the innate trajectory initiated by Descartes some hundreds of years earlier, as well as the English empiricism of Locke and Hume's class and Kant's “critical idealism”, as he calls it in his *Prolegomena* (KANT, [1783] 1988 p.64).

“Speculative thinking compares the apparent or given shape of things to their potentialities, thus distinguishing, in things, the essence of the accidental state of existence. Such a result is not achieved through a process of mystical intuition, but through a method of conceptual knowledge that examines the process by which each form came to be what it is. Speculative thinking does not conceive of 'the material and intellectual world' as a totality of fixed and stable relations, but 'as a becoming, and its being as a product and a production'.” (MARCUSE, 2004 [1941] p.51)

Speculative thinking seeks to remove the veil from the “inside of things” and not be carried away by the phenomenal appearance, by the appearance of what it appears to be. The example that Sérgio offers us of this operation deals precisely with

⁹I use the work “*Razão e Revolução – Hegel e o advento da teoria social*” (2004 [1941]), by Herbert Marcuse, as an explanatory source of the Hegelian philosophical system and the establishment of possible connections with Sérgio's work (the memory and indication was by Silke Kapp, whom I thank). I therefore approach Hegel second-hand, therefore. However, from an author fully endorsed for the task, I believe. A more in-depth study of Sérgio Ferro's Hegelian references must be undertaken in a broader and more intensely debated context.

that opposition (thus determined by an approach, let's say, less strict) between the drawing and the construction site.

In “*The construction site and the drawing*”, when dealing with drawing in his “consulate of representation”, Sérgio is quite telegraphic, his text is almost encrypted (FERRO, 2006 p.158). Articulating arguments about the role of drawing in the context of architecture production, it provokes and disturbs architects – particularly the drawing posse as master of themselves and of architecture's designs: “It is because it is a drawing for the production (of added value) that it shrinks on the Mongiana's grid until it becomes its own synonymous” ... But, what does it mean to be “equal to itself”? Why establish the drawing as identical to itself? Undoubtedly, it refers to “a universal concrete, a full and 'superior' truth, which 'absorbed' previous identities” (MORA, 2005 p.1431)

Being “equal to itself” is the Being submitted to the principle of *identity*. But for Hegel, the “purely formal identity of understanding” differs from the “rich and concrete identity of reason.” As Ferrater Mora explains, “strictly speaking, the very form of the identity principle indicates, according to Hegel, that there is more to it than a simple and abstract identity; there is the pure movement of reflection in which the 'other' appears as 'appearance’” (ibid). The “other” of the drawing: the construction site.

“We have already said that, in drawing, it is as the appearance of a relationship that the separations of doing and thinking, of duty and power, of strength and means of work are manifested. And that the ties that the drawing proposes are ties of the separated kept separated (Appearance: 'is the name given to the *being* that immediately is in itself a *non-being*’) (FERRO, 2006 p.159, emphasis added in the original. The definition of 'appearance' is by Hegel, in the “*Phenomenology of the Spirit*”).

For Ferro, the drawing is “materialization of separation, reification of rupture” (ibid, p.159). A determined denial, therefore.

But what I feel is that the misunderstanding (or “understanding,” in Hegel's sense) of how this denial takes place ends up prevailing, contributing to a lot of misunderstanding about Sérgio's theoretical construction that has already been disseminated around: the formulation seems to be there only to *deny Architecture itself* – now

identified with the *drawing*. Hence the accusation that Sérgio “does not like architecture” – which is not true, I think.

As an 'explanation of the explanation', it will be in the unpublished “A construção do desenho clássico” – one of Sérgio's most recent works and that composes the collection of texts that have been prepared for publication under the TF/TK (that is, still unavailable, unfortunately) – that the author describes how the operations that lay out the design take place not only against the construction site, but also in contradiction to itself. I transcribe an excerpt of this analysis of the dialectical process of treating objects, according to Marcuse's formulation, as an explanatory package insert for what Sérgio will demonstrate next:

“Relationships must be apprehended in another way [other than “simple 'correlations' by which common sense connects one object to another”]. They must be seen as being created by the object's own movement. The object must be understood as that which, itself, establishes and 'it proposes itself the necessary relationship between itself and its opposite.' This would imply that the object had a definite power over its own development, so that it could remain the same, and this, despite each concrete stage of the object's existence constituting a 'negation' of the object, a 'being-other'. In other words, the object must be understood as a 'subject' in its relations to its 'being-other’” (MARCUSE, 2004 [1941] p.70).

What example, then, does Sérgio Ferro give us to elucidate the relationship that the drawing “proposes” itself between “it and its opposite”?

Historically, the drawing separates from the construction site and becomes self-supporting. Thus, it denies the construction site: it starts talking by itself, depending on an autonomous plastics, an explanation directed by guidelines other than those established by the material order of its production. Theories of architecture, analytical tendencies, and taxonomy arise from complex articulations with cultural constructions and their many explanatory aspects. However, the drawing remains a *project* and, as such, presupposes the constructed as a future, as a *becoming*. That is, the drawing anticipates a work to be carried out and, therefore, an ideal construction site. Thus, the drawing “starts to operate with a mental construction site independent of the real construction site” (FERRO, 2020). This is how it comes into contradiction with itself, with its material determination: at the same time that it denies the construction site, it needs to reaffirm it, ideally, for its self-justification. It is not a matter of opposing the construction site to the drawing: this opposition is momentary and the result of common sense, as Marcuse explains:

“Wherever common sense and understanding perceive separate entities in opposition to each other, reason discovers the ‘identity of opposites’. It does not produce such an identity through a process of connecting and combining opposites, but by transforming opposites, so that they cease to exist as opposites, although their meaning is preserved in a higher and more ‘real’ way of being.” (MARCUSE, 2004 [1941] p.52-53)

Third conjecture: like Hegel, the movement of the object, for Sérgio, does not occur in opposition to the subject. The object places itself as a subject and, in this way, it changes and *contradicts* itself. There is no opposition between subject and object.

IV

Fourth conjecture: in a step forward, like Marx, Sergio seems to agree to reverse the Hegelian dialectic. In the form of a *coda*, taking up the first conjecture, *History as a process* can only be assimilated, not by the mystical force of a spirit *in Hegel's ways*, but by the contradictory transit of materially determined processes, driven by a dialectic that “can handle ‘every form historically developed in its fluid state, in motion’” (HARVEY, 2013 p.21).

“My dialectical method, in its fundamentals, is not only different from the Hegelian method, but its exact opposite. For Hegel, the thought process, which he, under the name of Idea, gets to the point of turning into an autonomous subject, is the demiurge of the effective process, which constitutes only the external manifestation of the former. For me, on the contrary, the ideal is nothing more than the material, transposed and translated in the head of man. (...) The mystification that dialectics undergoes at the hands of Hegel does not at all prevent him from being the first to expose, in a broad and conscious way, his general forms of movement. In it, it finds itself upside down. It is necessary to turn it back up, in order to discover the rational heart within the mystical envelope” (MARX, 2013 [1873, cf. already indicated] p.90-91)

It seems necessary to rethink the way we investigate our objects, especially in the context of historical research. We approach facts by seeking to find in them not evident oppositions or antagonisms – but contradictions. Replacing, as it seems to me the operation promoted by Sérgio Ferro, the “isolated reflection (understanding)” by “dialectical thinking (reason)”, according to the reading of Hegel proposed by Marcuse (MARCUSE, 2004 [1941] p.52). Trying to understand how the “transformation of opposites” takes place, without getting stuck in the dualisms that, as a

rule, hide between the folds of our historiographic approaches.

V

Hence, finally, seeking to bring these conjectures to a more practical field, risking making them enter the field of historiography in architecture.

I take as a first example the research on construction with *earth*. Invariably, much of the research on earth use as a building material in Brazil is limited to links with heritage studies and, in this field, essentially to buildings and contexts with very paradigmatic content. Now, the news and records of how labor was applied in the production of buildings in the colonial period is close to almost nothing. Except for military constructions – when some contingents of enslaved people were recruited to work on the construction site, partly also carried out by the *privates* – apart from one or another more prominent institutional building – little is known about domestic construction, the real urban production sites, before the advent of the Republic. Well, see: who were the workers who built Ouro Preto, for example? Who were the workers who built the peaceful village in the province of São Paulo, all built with earth, stone, and wood until the beginning of the 20th century? Certainly they were, in the vast majority, Africans and their descendants, enslaved or freed who, mastering traditional and highly specialized construction knowledge (such as rammed earth, wattle and daub, stonemasonry, carpentry, etc.), who produced a good part, throughout the period from its arrival in Brazil, around 1540, until the throes of the 19th century, of all the heritage built over these almost 400 years. And very little is known about it: how were these sites organized? I would like to ask João José Reis (REIS, 2019), a Bahian historian who accurately and thoroughly describes all the urban labor activity conducted by Africans in Salvador in the 1850s, more restricted to the activity of transporting people and genders in that city, who were and how did those ‘winners’ or freemen who used their energy in the construction sites that produced that thriving urban center in the province of Bahia at that time? What is the volume of resources involved in the production of that city? Who were its main investors? As in the rising urban centers in Europe in the Middle Ages, this activity also worked as an “engine of the primitive accumulation of capital”. If the productive logic that supported the birth and development of our urban centers escapes us,

we are left with the articulation of names, facts, frozen memory, and appearances of architecture and urbanism¹⁰.

Another example.

Much is said, for example, of Ramos de Azevedo and his importance for the History of Architecture, at the turn of the 19th to the 20th century, and for the vertiginous growth of the civil construction, particularly in the state of São Paulo. Attracting and concentrating fabulous volumes of capital that made possible the radical transformation of the city in just over 20 years, Ramos de Azevedo's work and his office have already mobilized a number of publications on the projects under his responsibility. However, we still need to understand, through the lens of Political Economy, how Ramos's business empire was structured: since he returned from Gant, Belgium (without even completing his graduation as an architect) and took over the almost completed works of the Cathedral of Campinas, in the state of São Paulo, a true business conglomerate grew and consolidated under Ramos' baton. Since that period – when his business acumen becomes clear – Ramos has been involved in very diverse businesses (such as lime production in Caieiras, implementation of the glass industry brought from France, steel rolling, brick production, etc.), but absolutely concatenated with his contracts and his office interests¹¹.

¹⁰Some research has been initiated and oriented in the direction I indicate here. This is the work “*Tebas: um negro arquiteto na São Paulo escravocrata*”, organized by the writer and journalist José Abílio Ferreira. The work collects essays and research on the work of Joaquim Pinto de Oliveira (1721-1811), a practical professional of the 18th century : black, “master bricklayer”, Tebas was responsible, among other works still existing today, for the stonework that adorns the facade of the church next to the old Convent of São Francisco – today Law School of the University of São Paulo. As José Abílio, when introducing Tebas, he refers to him as “the master of the art of carving and rigging stones, imprinting his personal and non-transferable mark on his work”. What distinguishes him, in addition to the architectural objects he produced in the province of São Paulo, would be the fact that he “gained autonomy over his body and his destiny, contrary to the logic of the slave system, based on fragmentation and absolute domination (body and mind) of the enslaved” (FERREIRA, 2018 p.7).

¹¹It is worth mentioning at least two works that, in a way, raise this question: the master's degrees of Thais Carneiro de Mendonça, “*Técnica e construção em Ramos de Azevedo: a construção civil em Campinas*”, from 2010; and Raquel Furtando Schenkman Contier, “*Do vitral ao pano de vidro: o processo de modernização da arquitetura em São Paulo através da vidraçaria*”, 2014 (MENDONÇA, 2010; SCHEKMAN CONTIER, 2014). In addition to these, also in 2010, under the coordination of José Lira and me, we organized a Symposium, through the Center for the Preservation of Culture at the University of São Paulo – CPC-USP, called “*Memória, trabalho e arquitetura*.” The event yielded a homonymous publication, bringing together 19 of the 20 works presented on that occasi-

One last example.

British historian Michael Baxandall, in “*Padrões de Intenção – a explicação histórica dos quadros*” (in a very quick reference here) proposes to pursue the “will or intention” behind the making of a painting. The historian says that what we speak of the paintings are “representations of what we think we saw in them”. However, rejecting the description that corresponds exclusively to a “simple exploration with the eyes”, Baxandall argues that, in order for us to apprehend that object and all its creation and production process, we need to go beyond the pure description of what we see, remembering that “we use our mind, and the mind uses concepts.” Such a process would be there, in the painting, as a representation of “something more than a material object: we implicitly consider that it contains not only the history of the painter's work process, but also the real experience of its reception by the spectators” (BAXANDALL, 2006 p.38-39). This means that, in addition to the object there, it also presents itself as an object with a material, an experience of contemplative enjoyment, a work process, etc.

Baxandall's proposal is very pertinent, regarding this alternative of approaching the historical object, without a doubt. The idea of highlighting the way in which an art object crosses time and reaches the one who observes it, carrying another time and space for the time and space of the observer through its *material*, its signs, signals, and inferences of the context in which it was produced, it is very similar to the strategy that Sérgio Ferro employs in the treatment he gives to his analysis of the Medici Chapel.

But still, there is a crucial difference between the two approaches.

The fact is that Baxandall not only uses a picture, but a *bridge*, to essay 25 causal statements to propose a structure of historical explanation – testimonials of social relations, conventions, intentions, etc. of an era. For this purpose, he uses Benjamin Baker's *Bridge Across the River Forth*, commissioned and built between 1873 and 1889 to economically integrate cities such as Aberdeen, Dundee, Edinburgh in Scotland and northern England (BAXANDALL, 2006 p.49 ff.)

on, in an attempt to address the history of architecture production under the biases that I have been discussing here. See LOPES; LIRA, 2013.

The bridge is a demonstration of impressive structural virtuosity: by launching successive swings over the river, based and anchored in huge tubular and latticed elements, the structure, all manufactured in steel and operating according to the logic of compensation between swings, allows a length of approximately 1.5 km, distributed in successive spans of around 520m.

Baxandall briefly tells the story of the contracting and construction of the bridge and then begins to inquire as to the reasons that would have led to build it, as to the motivations of the general charge ordered from Baker and, in this exercise, lists 25 evidences that would help in the construction of what he calls “descriptive construct”.

However, it does not pose a question that seems crucial to me: where did the ore used to build the bridge come from? Undergoing new iron treatment technologies to transform it into *mild steel* (Siemens-Martin system) back in England in the late 1800s, this ore certainly came out of some deep hole in the planet, dug by human hands.

At another point, we inadvertently learned that the Morro Velho Mine, located on the outskirts of Nova Lima, in the state of Minas Gerais, close to where Belo Horizonte is today, collapsed on November 10, 1886. With an eloquent 570m in length, the shoring of its tunnels collapsed over the heads and bodies of a reasonable contingent of enslaved Africans, freed blacks, and some Englishmen. With 1,154 workers employed in its exploration, according to a count made in 1884, the owner of the mine distributed them in three shifts – which made it difficult to accurately count the victims of the accident. It was called *Saint John Del Rey Mining Company* – a British company that certainly contributed to the supply of the ore needed not only for the construction of the Baker bridge, but also for the radical industrial development experienced by England in that period (TROCATE; COELHO, 2020).

Baxandall reports that, in the construction of the bridge, “3 million pounds and the lives of 57 workers” were consumed (BAXANDALL, 2006 p.56). But it does not realize how much resources, labor, and people were consumed in the entire web of production involved in the tracks of that enterprise. Observing the object from this wider network would also expand the regime of historical implications, transcending

British space and time in the late 1800s. He would make his material and historical explanation a universal issue.

VI

The elements and conjectures listed here, as I said, are only an approximation of the problem of defining a field of studies that is intended to be called *Production Studies*. Certainly, there must be other aspects, not identified here, that will help to shape this field. However, I think it is correct to state that, in order to envision a research approach with the characteristics listed here, both historical and on processes and practices in architecture, we must start following the considerations of Adrián Gorelik:

“Few disciplines have a greater impact on the transformation of culture, social, and economic life than architecture. And yet, the most common versions of its criticism and historiography have endeavored to make it a self-absorbed, esoteric universe, losing any complex relationship with the world.” (GORELIK, in LIRA, 2011 p.21)

For Gorelik, “architecture needs this cross-eyed look to be fully understood”: one eye on itself and the other on “the different contexts in which architecture intersects and gains intelligibility” (idem).

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