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Slow design: sustainable process for authorial production.

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Abstract: Design research has increasingly been concerned with sustainable processes for emerging technologies, guiding future directions in production. This article aims to present Slow Design as a sustainable process for authorial productions. It allows for a critique of the capitalist process, revealing practices for the future in which design can contribute to these emerging research areas. To do so, a combined narrative literature review was carried out on databases, which began with texts related exclusively to "Slow Design" and "Design for Sustainability". Afterward, the search was expanded to the identified strands most related to design, namely "authorial processes". The results point to Slow Design as a contributor to new directions for authorial production, while it currently still exists in the accelerated strand. It is possible to argue that Slow Design has an important role in Design for Sustainability, opposing the accelerated capitalist logic of production.

Keywords: Slow Design, Design for Sustainability, Authorial Process, Process and Production, Emerging Technologies.

1. Introduction

Often, authorial production is seen as a strategy for the viability of social and commercial proposals, usually with sustainable characteristics of artisanal development. With the intervention of design professionals, it can incorporate social technologies, generate employment and income, and produce low environmental impact products. It becomes a natural solution, since the initial investment required for such enterprises, from technology acquisition to the purchase of raw materials, is usually lower. Thus, designers can propose and follow the development of productive groups throughout the production cycle, from creation to the maturity of the enterprise (Lana et al. 2014). It is at this starting point that the insertion of the designer's productive interests is justified, encouraging their involvement in culture and society. In this way, designers can direct their work towards sustainability and break free from conventional styles that are questioned by some authors, such as Manzini (2008), enabling designers to act as authors involved in slow design for sustainable processes of Authorial Design.

According to Pires & Weymar (2015), the Authorial Design can be understood as the designer's role as a producer, with the right to express his own preferences. To contextualize the debate about authorship in design, Rock (2013) understands the design process as collaborative, as the professional in this area needs a client to close the equation of a project. The idea is to transform an analysis of the client's request into a production project, segmented almost computationally by the designer who executes the project (Rock, 2013). This argument is defended so that the client is the

main actor and decision-maker in the project, and it is up to the designer to "express a client's message as effectively as possible in a spirit of neutral professionalism" (Poynor, 2010, p.120). However, this mechanized process carried out by the professional in this area has been questioned even within the debates of the aforementioned authors, so that the interventions made by him, the design decisions taken and the path to be followed are considered, and this is where the discussion begins so that Authorial Design can break the stigmas already imposed in the culture of accelerated production. These stigmas are possible to be broken due to the Authorial Design acting inside Slow as a way to bring the designer's reflection about his productions, both about the impact to the users, even the need and consequences that these realisations can have. So, it is understood that the designer as author ends up having a Slow influence from the moment she starts designing and interpreting her productions. Author Poynor (2010) raises the question that it is inevitable for the designer to put his mark, his thoughts, in his productions. It is in this approach that the idea of self-expression by the designer as the author of his projects is inserted, "it is a moment when he works for himself, perhaps beyond financial reasons, but for internal reasons, of emotional expression, without deadlines, without pressure" (Pires & Weymar, 2015).

The emerging prospect of expressing and creating new philosophies for a new direction within design has given rise to the Slow Movement, which is increasingly present in various cultural aspects of society today. It allows the designer to propagate their authorship and decisions in what they do. Publicised as a global movement for deceleration, its proposal was established by embracing the widespread feeling of exhaustion promoted by liquid life, as advocated by Bauman (2007). The philosophy of this movement is aligned with the concept of sustainable development, which according to Silva (2006), is characterized as a harmonious transformation among various sectors of society aimed at the quality of life of the people.

The Slow Movement has several strands, such as Slow Design, which aligns with ecodesign, sustainable design, and ecological design techniques, proposing the adoption of practices that reduce resource consumption and prolong the life of products, such as recycling and reuse. In this approach, the product is developed with its improvement over time in mind, in the form of remanufacturing, i.e., collecting the product to improve, package and adapt it in a way that makes it more efficient and durable. This consists of a proposal to slow down current production processes, as it is based on the valorization of local artisanal processes, recycling, and the extension of the life of products, as well as the use of regional raw materials (Thomaz et al., 2022). It involves a perspective of sustainable development for authorial production. The use of handicrafts as an ally of authorial design is widely recognized as a way to promote cultural identity. This is because handicrafts allow the creation of unique pieces that do not depend on mass industrial production. Thus, handicrafts can be seen as a valuable contribution to the expression of individual creativity in design (Silva, 2016).

The practice of sustainable development involves meeting the needs of the present generation without compromising the ability of future generations to meet their own needs (United Nations Sustainable Development Group, 2023). Sustainability applied to society aims to achieve a just society with values such as solidarity, reliability, tolerance, and optimism, as identified by Karuppannan & Sivam (2011). When combined with design, sustainability enables the discovery of sustainable practices for the development of future directions and emerging technologies. Design plays an important role in the realization of this ideal by seeking a balance between economic, environmental, and social dimensions, according to MMA (2018) and Santos et al. (2019). The economic dimension seeks to achieve fair and equitable distribution of economic value in relation to well-being, while the environmental dimension is related to biodiversity, management of renewable and non-renewable resources, among other considerations. Finally, the social dimension aims to manage the application of human rights in pursuit of greater social cohesion and equity (Santos et

al., 2019). A more just and ethical society, where happiness and harmony are paramount, is a basic foundation that characterizes the social dimension of Design for Sustainability (Santos et al., 2019). The importance of Sustainable Design is associated with the need to find sustainable alternatives for the planet's development that allow for the compatibility of economic growth, human development, environmental quality, and quality of life (Manzini, 2008). Thus, in the global context of concern for environmental issues, it stands out as an important factor that promotes paradigm shifts and behaviour changes (Arruda et al. 2019). Sustainable Design, among other aspects related to the search for greater sustainability in society, aims to care for environmental aspects at all stages of product development, enabling the reduction of environmental impact during its lifecycle. As such, this approach seeks to reduce waste generation, decrease environmental and social impact, and save energy while avoiding harmful effects during disposal (Arruda et al. 2019). Thus, the focus on Design for Sustainability makes designers prospectively exercise towards the future; this way, it is possible to distribute the design process, sociotechnical device production, world transformation, conservation, and creation of favourable conditions for new transformation processes over the temporal axis (Ferronato & Franzato, 2016).

This emphasis on sustainability is a response to the social, cultural and environmental problems caused by the industrial production system, which promotes the unbridled exploitation of non-renewable natural resources (Voronovicz & Zacar, 2011). In this system, consumption is frenetic and products are designed to become quickly obsolete, ephemeral and with a short lifespan. In response to this situation, Slow Movement trends emerge, which specialise and deepen in different areas, embracing the idea of better use of time qualitatively, rather than quantitatively (Voronovicz & Zacar, 2011).

Currently, product designers are increasingly concerned not only with ecological values, but also with the perception and emotional experiences that the unique materiality of products can provide to people (Strauss & Fuad-Luke, 2008). According to Fuad-Luke (2004), Slow designers design products to meet real needs, instead of fads or market demands, and reduce resource consumption and environmental pollution, minimizing the ecological footprint of products/services. In addition, they make use of renewable energy sources more suitable for each context, such as sun, wind, water, or energy from the sea, and renewable materials. Another point is that they also allow for the separation of product/service components at the end of their useful life, in order to encourage recycling, reuse, and remanufacturing, and exclude the use of toxic or hazardous substances for humans and other forms of life in all phases of the product life cycle (Fuad-Luke, 2004).

2. Materials and methods

To conduct the present study, 7 methodological steps were adopted. The first step consisted of defining the research theme and constructing a Narrative Bibliographic Review (NBR), based on Rother (2007), which emphasizes the importance of this strategy for describing and discussing the development or state of the art of a certain subject. The chosen theme was Slow Design and its relationship with the sustainable process of authorial production, encompassing its history, aspects, and connections with these concepts. The second step included selecting the criteria used for choosing the texts and delimiting the content. Data collection began with an exploratory search for texts related to the theme, using the chain reference technique, also known as "snowball" (Biernacki & Waldorf, 1981), which allowed the obtaining of relevant texts for the research. As a way of deepening knowledge on the theme and establishing a state of the art, a third step was established, searching in the ResearchGate, CAPES Periodical, and Google Scholar databases. This last search did not use temporal or language limits, considering the emergence of the movement, and returned different types of studies from various knowledge areas. In this step, the search strings "Slow Design" AND "Sustainability Design" were first used, and then "Authorial Production".

The fourth step refers to tabulating the results found and used the following information: search source, term(s) used to locate the material, language, type of publication (article, book, report, etc.), title, authors, place of publication (journal, proceedings, etc.), year, and summary. This tabulation allowed for the consolidation of data and elimination of duplicate titles in different searches as the first filter. For the string "Slow Design" AND "Sustainability Design" in the ResearchGate database, the first 10 pages were delimited, and varied results were found that were mostly distant from the theme addressed, but some were selected for review. For the CAPES Periodical, there were 20,500 results, and for Google Scholar, there were 194 results. For the string "Slow Design" AND "Sustainability Design" AND "Authorial Production" in the ResearchGate database, varied results were found that were mostly distant from the theme addressed, but some were selected for review. For the CAPES Periodical, no results were found, and for Google Scholar, there were no results either, both having gone through the filters and selections already listed.

After this first filter, the next step, the fifth, established and applied the following exclusion criteria: articles that did not address the theme; articles that did not present characteristics, relationships, and strands between the theme. These criteria are initially made by reading the title, keywords, and abstract. The sixth step adopted as inclusion criteria the strategy of previous analysis of the objectives and results presented and their relationship with the theme of the articles for the research. The following is a summary of the selected publications:

Table 1. Relevant publications. For ResearchGate search source.

Title	Authors	Year	Language	Type	String			
Open design and slow fashion for the	Ferronato e	2016	portuguese	article	"Slow Design"			
sustainability of the fashion system	Franzato				AND "Design para			
					Sustentabilidade"			
Design for Sustainability and	Estevo, Goya,	2022	portuguese	article	"Slow Design"			
Handicraft: production of bowls	Marteli e				AND "Design para			
based on the use of pruning residues	Paschoarelli				Sustentabilidade"			
Slow fashion and sustainable	Trippeer e	2022	english	article	"Slow Design"			
entrepreneurship: A case study	Gam				AND "Design para			
evaluation of the micro-factory model					Sustentabilidade"			
Slow Fashion in a Fast Fashion World:	Brewer	2019	english	chapter	"Slow Design"			
Promoting Sustainability and					AND "Design para			
Responsibility					Sustentabilidade"			
Slow Design: expression of cultural	Thomaz,	2022	portuguese	article	"Slow Design"			
identity in the region of Cianorte/PR	Burgo e Costa				AND "Design para			
through furniture parts					Sustentabilidade"			
					AND "Produção			
					Autoral"			
Table 2. Relevant publications. For CAPES journal search source.								
Title	Authors	Year	Language	Type	String			
Slow fashion: challenges and								
-	Irokawa	2018	portuguese	dissertation	"Slow Design"			
perspectives on sustainable practices in	Irokawa	2018	portuguese	dissertation	AND "Design para			
perspectives on sustainable practices in the fashion market.			portuguese	dissertation				
perspectives on sustainable practices in the fashion market. Table 3. Relevant publications. For Google	Scholar search sou	ırce.			AND "Design para Sustentabilidade"			
perspectives on sustainable practices in the fashion market. Table 3. Relevant publications. For Google S. Title	Scholar search sou Authors	<i>ırce.</i> Year	portuguese Language	Type	AND "Design para Sustentabilidade" String			
perspectives on sustainable practices in the fashion market. Table 3. Relevant publications. For Google 3. Title Slow Design and Pastoral Art a	Scholar search sou	ırce.			AND "Design para Sustentabilidade" String "Slow Design"			
perspectives on sustainable practices in the fashion market. Table 3. Relevant publications. For Google Stritle Slow Design and Pastoral Art a Taxonomic Contribution to the	Scholar search sou Authors	<i>ırce.</i> Year	Language	Type	AND "Design para Sustentabilidade" String			
perspectives on sustainable practices in the fashion market. Table 3. Relevant publications. For Google 3. Title Slow Design and Pastoral Art a Taxonomic Contribution to the Recognition and Repositioning of	Scholar search sou Authors	<i>ırce.</i> Year	Language	Type	AND "Design para Sustentabilidade" String "Slow Design" AND "Design para			
perspectives on sustainable practices in the fashion market. Table 3. Relevant publications. For Google 3. Title Slow Design and Pastoral Art a Taxonomic Contribution to the Recognition and Repositioning of Handicraft Production in Central	Scholar search sou Authors	<i>ırce.</i> Year	Language	Type	AND "Design para Sustentabilidade" String "Slow Design" AND "Design			
perspectives on sustainable practices in the fashion market. Table 3. Relevant publications. For Google 3. Title Slow Design and Pastoral Art a Taxonomic Contribution to the Recognition and Repositioning of Handicraft Production in Central Alentejo	Scholar search sou Authors Panoias	Year 2019	Language portuguese	Type dissertation	AND "Design para Sustentabilidade" String "Slow Design" AND "Design para Sustentabilidade"			
perspectives on sustainable practices in the fashion market. Table 3. Relevant publications. For Google 5. Title Slow Design and Pastoral Art a Taxonomic Contribution to the Recognition and Repositioning of Handicraft Production in Central Alentejo Design for sustainability through	Scholar search sou Authors	<i>ırce.</i> Year	Language	Type	AND "Design para Sustentabilidade" String "Slow Design" AND "Design para Sustentabilidade" "Slow Design"			
perspectives on sustainable practices in the fashion market. Table 3. Relevant publications. For Google 3. Title Slow Design and Pastoral Art a Taxonomic Contribution to the Recognition and Repositioning of Handicraft Production in Central Alentejo	Scholar search sou Authors Panoias	Year 2019	Language portuguese	Type dissertation	AND "Design para Sustentabilidade" String "Slow Design" AND "Design para Sustentabilidade"			
perspectives on sustainable practices in the fashion market. Table 3. Relevant publications. For Google 5. Title Slow Design and Pastoral Art a Taxonomic Contribution to the Recognition and Repositioning of Handicraft Production in Central Alentejo Design for sustainability through	Scholar search sou Authors Panoias	Year 2019	Language portuguese	Type dissertation	AND "Design para Sustentabilidade" String "Slow Design" AND "Design para Sustentabilidade" "Slow Design" AND "Design" AND "Design para			
perspectives on sustainable practices in the fashion market. Table 3. Relevant publications. For Google 5. Title Slow Design and Pastoral Art a Taxonomic Contribution to the Recognition and Repositioning of Handicraft Production in Central Alentejo Design for sustainability through	Scholar search sou Authors Panoias	Year 2019	Language portuguese	Type dissertation	AND "Design para Sustentabilidade" String "Slow Design" AND "Design para Sustentabilidade" "Slow Design" AND "Design"			

The Slow Design Principles	Strauss e Fuad-Luke	2008	english	article	"Slow Design" AND "Design
					para Sustentabilidade"
Emerging design strategies in sustainable production and consumption of textiles	Niinimäki e Hassi	2011	english	article	"Slow Design" AND "Design
and clothing					para Sustentabilidade"

The Mendeley platform was adopted for data and document management and control, as recommended by Ferenhof and Fernandes (2016). All articles selected for full reading and note-taking were added to the platform. In addition, a document summarizing the data found was prepared, listing them according to the theme addressed, as a report to enable the creation of this article.

3. Results and discussion

The results obtained through this Narrative Literature Review show relevant publications in the area. For instance, a relevant source from ResearchGate includes the article by Ferronato & Franzato (2016), which discusses Open Design and Slow Fashion in Sustainability. Although this is not entirely within the scope of this article, it allows for the exploration of the perspective of the need to seek changes in design, production, and consumption. The authors state that in slow culture, beyond monetary value, knowledge and skills are exchanged to practice them in favour of authorial production. In line with this, the article by Estevo, Goya, Marteli & Paschoarelli (2022) discusses how Sustainability-oriented Design can be an instrument with a purpose for improving the social and economic conditions of a community. In this specific study, the authors observed how Design would act in favour of a group of artisanal producers who created authorial bowls using their vernacular knowledge, maintaining a sustainable product character. This enables a logic related to slow design due to the principles of maintaining identity and valuing what producers can execute. In line with this logic of maintaining identity and valuing quality over quantity, Trippeer & Gam (2022) were also included in this article due to their approach to the Slow concept applied to Social Entrepreneurship. The authors conducted a case study on a small-scale American clothing manufacturer that gained momentum through a Slow strategy for sustainable development. These approaches show a growing trend towards changing the current capitalist logic in favour of a more sustainable application that achieves quality through the Slow movement. The reviewed articles present descriptive and analytical examples of the concept, as well as practical and coherent approaches to Slow principles. Furthermore, the selected publication by Brewer (2019) also contributes to the previous statements, as the chapter's objective is to propose a discussion and reflection on how Fast Fashion has harmed the productive world, in contrast to how the Slow approach can contribute to an alternative choice. This publication values environmental and social relationships, justifying that the fast approach has ignored these issues, while the Slow approach connects producers to consumers, increasing sustainability and corporate responsibility. Additionally, Thomaz et al (2022) address how Slow Design is expressed in the production of furniture pieces in a region of Brazil, which enables the valorization of cultural identity.

For the CAPES journal search source, several publications were identified, with the one chosen for this study being Irokawa's (2018) dissertation, which addresses Slow, focusing on the fashion industry, also contrasting it with the accelerated pace and encouragement of excessive consumption, which is currently prevalent in the world. She characterizes contemporary industry as a major generator of social and environmental impacts, analyzing the challenges and opportunities that Brazilian fashion brands can identify by implementing the Slow concept in their business models. Therefore, the urgency of finding alternatives to current rampant consumption is evident. As for the

searches and data found through Google Scholar, the results included Panoias' (2019) dissertation on how artisanal production can be re-signified and valued through Slow Design, as well as Silva's (2021) exposition of changes in production and consumption behaviour, presenting how Design for Sustainability has been integrated into the craft industry over time. There were also Strauss & Fuad-Luke (2008), authors who wrote articles focused on presenting the principles of Slow Design. In this chosen production for review, the aim is to present a reflective tool for new Design practices. Finally, Niinimäki & Hassi (2011) also present alternatives to the current fast process, but reflect that the Fast movement is typically chosen with a focus on production and sales, to bring profits and profitability, which means that in choosing the Slow movement, concerns would still be in production and sales, but not in an unbridled manner, associated with ethical awareness and sustainable development.

It is discussed that in order to ensure the physical, cultural, emotional, mental, and spiritual durability of products, Slow design maximizes the benefits of products for socio-cultural communities and encourages modularity, allowing for sequential purchases according to needs and funds, facilitating repairs/reuse, and improving functionality. It also promotes debate and challenges the status quo around existing products and publishes sustainable designs in the public domain for the benefit of all, especially those designs that will not be commercialized (Fuad-Luke, 2004). The Slow designer sees design for sustainability as an opportunity rather than a threat to the status quo, promoting ecological change in a positive way (Fuad-Luke, 2004). Slow design presents the characteristics of authorial design, which is a modality in which professionals act "as designers, makers, and sellers, using design concepts and methodology", and their projects are developed directly for the end consumer (Thomaz et al. 2022).

The designer should act throughout the entire development process with the aim of reducing ecological impacts, analysing the life cycle of objects and considering all the impacts caused to the environment from the extraction of resources needed for the production of materials that compose the product to the disposal of these same materials after use. This decision-making process is what characterizes Authorial Design, uniting the professional with the project's purpose. The following are some ways to act in each of these phases in the pursuit of more sustainable production (Cardoso, 2010):

- 1. Minimization of matter and energy while maintaining resistance;
- 2. Choosing processes with low environmental impact;
- 3. Extending the life of materials;
- 4. Optimizing the life of products.

Focusing on local resources, the designer benefits the movement and improvement of the local economy. Additionally, the designer can: approach local businesses for their strengthening; promote cultural identities and diversities; promote different tastes and aesthetics; strengthen the role of the local economy by creating services in the same location where they will be used; promote systems using local, natural or regenerated resources; favour local businesses (Manzini & Vezzoli, 2002). Slow Design is a movement that seeks sustainability and the valorization of emotional experiences with products, going beyond their basic functions. To this end, it is based on six principles:

- Reveal: this principle refers to revealing the processes and materials that make up a product. It seeks to restore transparency and honesty in the production process so that the consumer can understand the environmental and social impact;
- Expand: Slow Design aims to go beyond the basic functions of a product and also consider its cultural, emotional, and aesthetic expressions;
- Reflect: this principle refers to promoting reflective consumption. Slow Design seeks to
 encourage the consumer to think about what and why they are buying, and what
 impact it has;

- Entrepreneur: Slow Design values collaboration and transparency in the production process. It seeks to promote open-source and information sharing so that projects can continue to evolve;
- Participate: the active participation of the consumer in the production process;
- Evolve: Slow Design recognizes that products can evolve over time, and that this evolution can bring new qualities and experiences.

These principles are defended through a summary of the review, mainly following the publication of Strauss & Fuad-Luke (2008), whose principles are presented as a new opportunity for approach to production and consumption models in Design, involved with authorial production.

4. Conclusion

Slow Design seeks to promote co-creation and people's involvement in the creation of meaningful and relevant products. It values the beauty of processes and materials, which are often ignored in mass production. This also means that products should not only be designed to be efficient but also to be enjoyable, inspiring, and meaningful. This can be achieved through informative and educational materials, as well as products that encourage contemplation and reflection. Reflection is encouraged through a slower production process that values what the producer or designer has to offer in their authorship to the productive universe.

From the findings of this study, it is possible to point out that the Slow movement plays an important questioning and representative role for the new types of movements that go against capitalism. It opposes and tensions the current accelerated logic of consumption that is reflected in lifestyles as a whole. This designer aims to generate maximum well-being benefits for the target audience, educating the customer and user about sustainable use and promoting ecological literacy. The designer also re-examines the assumptions behind existing products and dematerializes products and services whenever there is proven benefit in terms of individual, social, and/or environmental well-being.

What Slow Design contributes to Sustainable processes around Authorial Production is to value local labour and promote fair trade. It brings the customer's protagonism in their social world requests and demands but allows the designer to have purposes within their productions. This also means valuing social responsibility and community improvement, which are in line with what Slow advocates. Furthermore, Slow Design values experimentation and innovation, always seeking new ways to create meaningful and sustainable products. This means that products should be designed to be durable but also flexible and adaptable.

Finally, it is considered that Slow Design can be directly applied to Authorial Design, as it brings a focus on decelerated production and questioning rampant capitalism. This article highlights the relationships that Slow contributes to ascending critical thinking in the production process, which is the designer's focus. The principles presented in this article are combined with the proposal of new directions for these emerging studies for the culture of sustainability.

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