

The social role of Information Design in the Digital Era

O papel social do Design da Informação na Era Digital

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Information Design, digital era, citizenship, social role

This paper aims to provide an examination of the current reality of information transmission to explore the significance of Information Design in promoting citizenship. The research consists of a theoretical articulation conducted through a literature review. In order to do that, we describe the modes of entanglement existent between the history and evolution of the Information Design, the Interaction Design and the correlated fields that are largely influenced by information transporting interfaces. Despite its presence on effective action today, its prominence seems to have waned. Through an analysis of the digital era and current social and political events, it is evident that the application of Information Design principles and concepts holds political potential to yield positive social outcomes, thereby warranting a discussion and a renewed appreciation of its epistemological framework.

Design da Informação, era digital, cidadania, papel social

Este texto tem como objetivo analisar a circulação da informação na realidade contemporânea para explorar o potencial latente do Design de Informação na promoção da cidadania. A pesquisa consiste em uma articulação teórica realizada a partir de uma revisão bibliográfica de literatura. Para tanto, descreve-se os modos de entrelaçamento existentes entre a história e a evolução do Design da Informação, do Design de Interação e os campos correlatos que são amplamente influenciados por interfaces que transportam informação. Embora exista uma atuação efetiva, seu protagonismo parece ter perdido força. Ao observarmos o mundo digital e os eventos sociais e políticos atuais, percebemos que há potencial político e provável impacto social positivo na aplicação dos princípios e conceitos do Design de Informação, o que cria a necessidade de valorização e discussão sobre sua epistemologia.

1 Introduction

The study of Information Design can be traced back to the earliest pictographic records of human activity and continues to the present day, where the digital world holds prominence marked by the creation of the first website in 1989. The evolution of the field reveals a continuous increase in the complexity of the subjects and addressed issues.

Information Design can be understood as the "planning, shaping, and defining of the contents of a message and the environment in which it is presented, with the aim of achieving specific objectives for the needs of users" (Petersson, 2010, p. 18). In this sense, it might play a critical role in bridging the gap between citizens and information. Therefore, the purpose of

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Information Design is to make information accessible and understandable, fulfilling a crucial role in educating, assisting, and simplifying access to knowledge in different social contexts.

According to Frascara (2011), there are no set recipes in Information Design, but there are guidelines that provide direction. In simple terms, good Information Design should make information accessible, appropriate, reliable, complete, concise, relevant, timely, and easy to understand. Besides, the author also highlights that it "is ethical because ethics is based on recognizing the 'other' as different and deserving of respect in their difference" (Frascara, 2011, p. 10).

Moreover, in the digital age, the social role of Information Design remains increasingly relevant, given its initial objectives of instructing, assisting, and simplifying access to information. Today, we live in a highly interconnected world where information serves as leverage and, at the same time, we are aware of populations in extreme vulnerability without access to basic needs such as clean drinking water.

Despite the valuable contributions of authors such as Frascara (2011), who examines the nature of the action in the field of Information Design, it is paramount to consider the social implications of this field. Consequently, this exploratory article aims to engage in a discussion about the relevance of the social role of Information Design in today's world. With this aim, a theoretical articulation is undertaken through a narrative literature review, elucidating notable historical events within the realm of Information Design to explore its alignments with the concept of citizenship, thereby accentuating its pertinence within the context of the digital era.

2 Significant Events in the history of Information Design

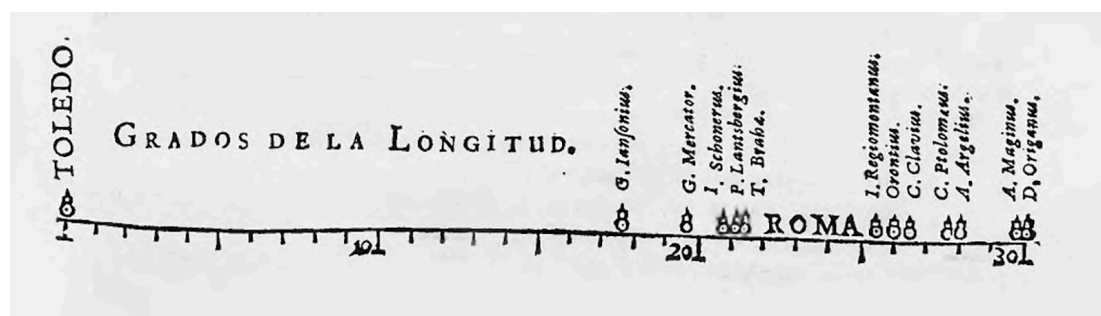
The authors Jen and Ken Visocky O'Grady, in their seminal work "The Information Design Handbook" (2008), recognize the extensive history of Information Design, acknowledging, first and foremost, that a comprehensive examination of this subject would require detailed research and substantial volumes. Nevertheless, they highlight some essential moments in its evolution that are commonly recognized as significant and transformative. First, this begins with the earliest recorded images of cave paintings and petroglyphs from 3000 BC, which depicted the daily lives of the individuals from that era, marking the inception of communication as we know it today. From then on, communication ceased to be so primitive. Henceforth, little by little, letters and numbers began to be part of people's repertoire, and to be organized in order to convey what was intended in a more understandable way.

Furthermore, María del Mar Navarro (2021) highlights the unique aspects of the book "A History of Data Visualization and Graphic Communication" by Michael Friendly and Howard Wainer. She sheds light on what sets it apart from other works that examine the historical aspects of graphic recordings and data visualization. In addition to this, she emphasizes the depth of analysis and the identification of patterns in the volume, showcasing the significance of

systematic information organization. Navarro also highlights various noteworthy events in the history of Information Design that demonstrate its crucial social importance.

Moreover, there are specific instances that support Navarro's perspective. The first one is the XVII century cartography (Figure 1), which collaborated in the description of the concept of longitude. The second are the maps and documents of the clusters of cholera cases made by the epidemiologist John Snow in the XIX century (Figure 2), tracing their location and volume around a water pump in London. Likewise, there also were the rose-shaped diagrams drawn by the famous nurse Florence Nightingale, a pioneer of modern nursing and statistics, during the Crimean War (1853–56) (Figure 3). It was useful in foregrounding deaths that could be prevented if hospital care were improved. Florence even said that the diagrams were “designed ‘to affect thro’ the eyes what we may fail to convey to the brains of the public through their word-proof ears” (Hammer, 2020).

Figure 1: Van Langren's *La Verdadera Longitud por Mar y Tierra*, Antwerp, 1644. Reproduction courtesy of the Koninklijke Bibliotheek van België. (Source: NAVARRO, Maria del Mar. Review of *A History of Data Visualization and Graphic Communication*, by Michael Friendly and Howard Wainer, *The Journal of Design, Economics, and Innovation* Vol. 7, No. 3, Autumn 2021).



Later, Maria del Mar Navarro further elaborates on noteworthy cases in the historical timeline of Information Design. She focuses on emphasizing the significance of visual and numerical graphics in comprehending and advancing the world. Although the names of prominent Information Designers are not mentioned, who in fact did not formally exist in the XVII century, the author outlines Information Design for its historical relevance in some key humanity events as a solution that brought, at different times, a positive and even lasting social impact.

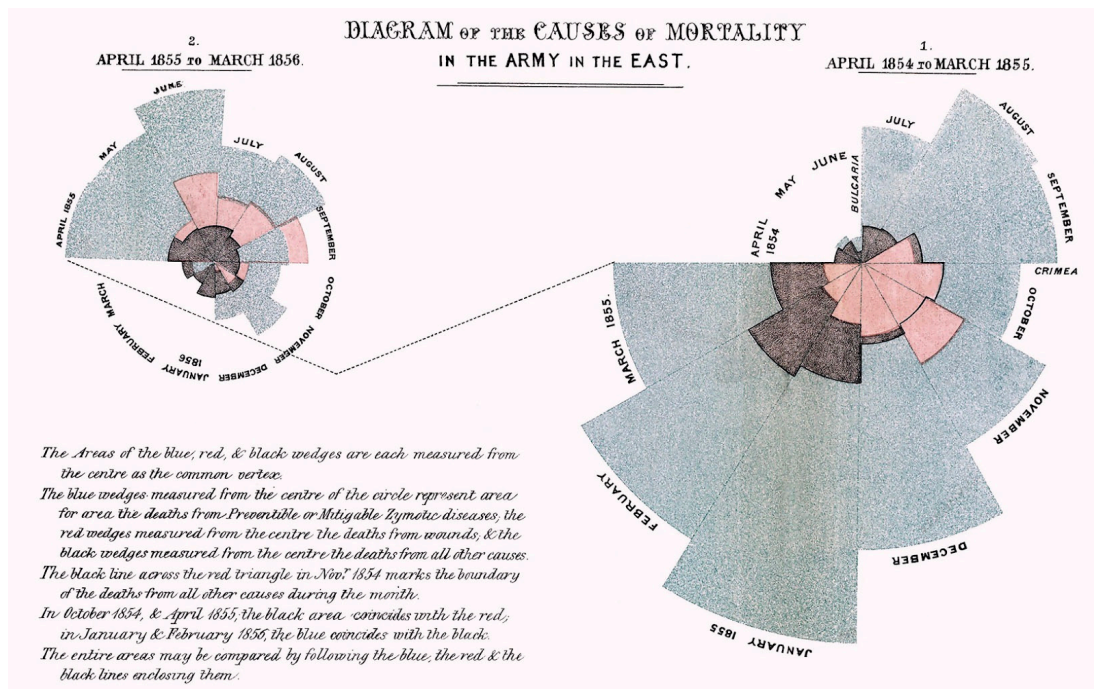
Figure 2: Map drawn up by John Snow to solve a cholera outbreak.

(Source: https://geoind.wordpress.com/2013/12/23/john_snow_revisitado/) Accessed on February 08, 2023.



Figure 3: Detail from "Eastern Army Cause of Death Diagram" by Florence Nightingale.

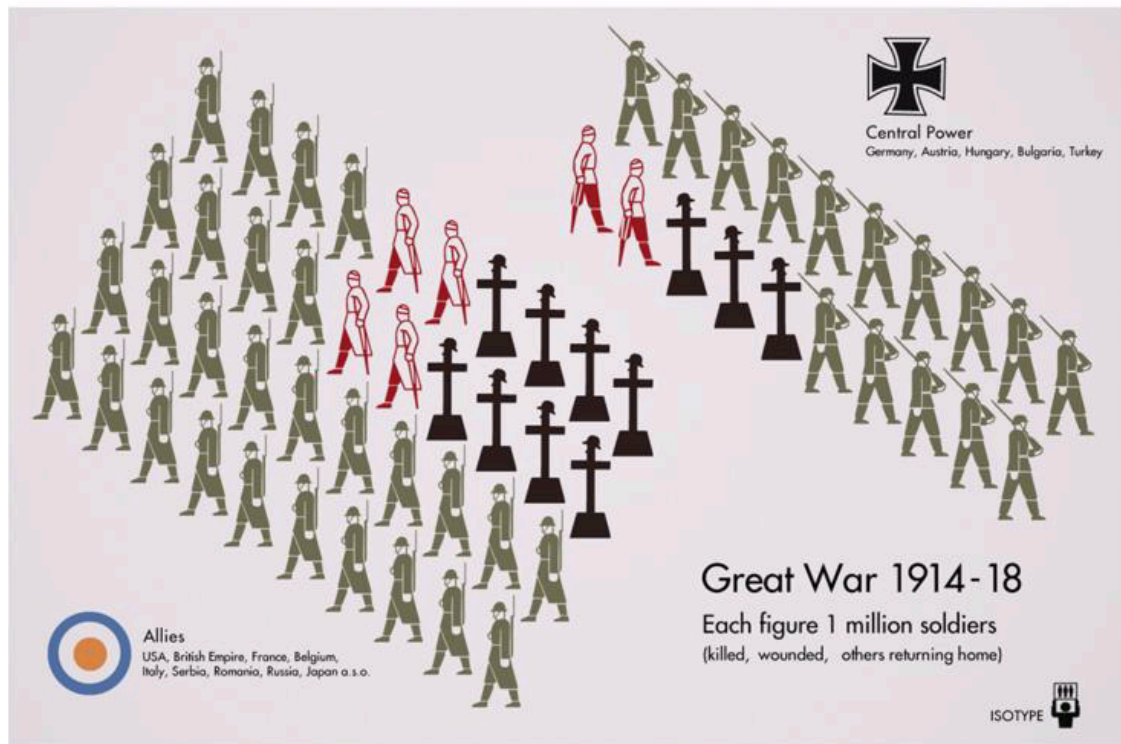
(Source: <https://www.historyofinformation.com/detail.php?entryid=3815>) Accessed 08 Feb 2023.



Moving forward, our timeline proceeds into the 1940s with the introduction of another influential figure, Otto Neurath, who was a renowned professional not hailing from the artistic or design spheres. Otto studied philosophy, mathematics, physics and then history and economics, deepening in the history of economics. Throughout his career, he served as a professor and director of the Social and Economic Museum of Vienna. He believed in "the need to create an auxiliary language, which would contribute to a learning system based on ease of understanding, and which would also be the basis of a universal language in a simplified way, making use of the thought that the different areas of knowledge could act together for human development" (Passos et al., 2019, p. 3).

To achieve this goal, Neurath collaborated with a multidisciplinary team to develop a visual system called ISOTYPE (International System of Typographic Picture Education), exemplified in the Figure 4. As noted by Souza (2009, p.13), this system represented a "real and pioneering attempt in the use of visual communication aimed at learning processes and improving everyday life".

Figure 4: "The Great War", ISOTYPE: Example of use of a simplified visual language aimed at facilitating understanding. (Source: PASSOS, SILVA, SILVA & DIAS, 2019).



Although it did not achieve its intended goal of universality, the ISOTYPE system served as the foundation for subsequent pictographic systems, several of which are still in use today, such as the pictograms utilized in the Olympic Games. The pictograms were inserted in the Olympics in 1964, in the first games held in Tokyo, with the objective, once again, of providing access to information. This time, it was information about events and competitions for people from all over the world who came to watch or compete in the games and would not be able to understand the local language.

In addition, the next historical event, also in the 1940s, featured the Czech modernist Ladislav Sutnar as its protagonist. With a background in painting, architecture, and mathematics, Sutnar was a professor at the Prague School of Graphic Arts and worked in various design fields, including exhibition design, textile design, product design, and print design. Upon moving to the United States prior to the invasion of Czechoslovakia by Hitler's army, Sutnar was hired as the design director for Sweet's Catalog Service. There he revolutionized the organization and structure of information, making it more user-friendly. According to Visocky O'Grady (2008), Sutnar's use of square brackets, icons, and linear elements served as the precursor to contemporary Information Design structures. He is widely recognized as an information designer and architect, credited with designing a user-friendly phone book and contributing to companies such as IBM. This marks the first instance in our timeline of a professional who will later be recognized as an information designer.

Moving forward, the Eames couple's illustrious participation in the 1960s marked a meaningful milestone in the history of Information Design. Namely, they were responsible for an interactive exhibition that introduced new paradigms in the fields of exhibition design and

museology. With the advent of technology, particularly the Internet, Information Design saw its final significant event with the launch of the first web page.

From then on, Information Design became intertwined with Interaction Design and related fields that are heavily influenced by the interface that carries the information. On top of that, the term "Information Interaction Design" (Shedroff, 1994; Portugal, 2010) emerged as an attempt to explain this close relationship. However, it is crucial to recognize the distinct nature of these two fields. Information Design focuses on the formatting, structuring, and organization of information to enhance accessibility and comprehensibility, whereas Interaction Design primarily focuses on the creation of artifacts, especially the design of relationship structures for digital interfaces.

3 Information Design by definition

It is important to state that Information Design is a multi-faceted discipline that has been the subject of various definitions by different authors and institutions. According to Souza et al. (2016), over 11 sources and 13 definitions of Information Design have been found. Despite the difficulty in arriving at a single, comprehensive definition of Information Design, Visocky O'Grady (2008) argue that it is possible to understand the discipline by exploring the perspectives of prominent professionals, reviewing artifacts commonly associated with data visualization, and investigating user-centered philosophies. They argue that these methods are more effective in gaining an understanding of Information Design than solely relying on definitions.

Frascara points out that the main objective of design is to improve people's lives. Therefore, to achieve this aim it is imperative that the design process does not become disconnected from reality. With regards to rules and definitions, Frascara highlights that

Information Design is essentially user-centered in nature and is rooted in ethical principles, as ethics involves acknowledging the diversity and worth of the "other". Information Design requires a combination of practical knowledge and sensitivity to the context in which it is being applied - who it is being designed for, the purpose, the time and place, and the medium through which it is being conveyed. (2011, p. 9)

Thereby, Frascara emphasizes that the focus should be on the process and intended audience, rather than just the outcome.

According to the Society for Technical Communication's website, information design is the process of translating complex, disorganized, or misstructured data into valuable information that is meaningful and makes sense (Mineiro, 2011). The term "complex" is crucial here, as it emphasizes the area's capacity to reduce informational asymmetry and truly generate meaning (Mineiro, 2011, translated by the authors).

Historically, Information Design has been driven by a desire to enhance the well-being of individuals and communities, and to address the challenges and issues faced by society. This

motivation is evident in the landmark events and developments in the history of Information Design, which have sought to improve people's lives, address community problems, and promote a more democratic distribution of information. From its beginning, Information Design has aimed to provide organized and accessible information that serves the greater good and empowers individuals to fulfill their roles as active citizens.

Joaquim Redig (2004) is vehement in stating that "there is no citizenship without information, nor information without design" and brings forth the notion of citizenship and its respective exercise to the field of Design and designer responsibility. As argued, reflecting on the influence of Information Design is crucial, given that it highlights the potential for transformation within its territory of operation and emphasizes the importance of considering the context in which the project will be implemented, as well as its potential positive or negative impact on the user. While basically every form of design is user-centric, "Information Design focuses on faithfully representing specific sets of knowledge and the unique needs of the recipient of the content." (Visocky O`Grady & Visocky O`Grady, 2008, p. 23).

4 Information Design and citizenship

Citizenship is a polysemic and highly disputed term. According to Clemente (2020), is shaped by various interpretations and influenced by ideological, philosophical, cultural, and social contexts. The concept of citizenship is a socially constructed idea that is derived from both individual and collective experiences. Citizenship can be defined by the principles of democracy, which are related to social and political struggles and consolidation (Chauí, 1984 apud Costa and Ianni, 2018). Moreover, it is also linked to belonging to a community, giving the individual the right to have rights (Arendt, 1989 apud Costa and Ianni, 2018) or, with reference to the modern paradigm of Marshall (1963), it presupposes the full scope of rights and duties warranted to the individual in society.

On top of that, Bonsiepe (2022) highlights that design is a practice that significantly transforms daily life as it provides a forward-looking perspective. He expands on this idea by raising the question of whether design's influence is limited to the creation of artifacts and systems or if it has the capability to foster social and political change towards a more democratic and civic-minded society. Looking at what he calls the periphery, which are countries that were once colonized and that seek political and economic autonomy, he states that "the indispensable political component of design as a manifestation of utopian intentions and the desire to change the status quo or asymmetric power relations, in whatever way communicated, lends design its explosive force" (Bonsiepe, 2022, p.309).

What is more, in the 1970s, Papanek, driven by a context marked by social upheaval, draws attention to the already urgent need to rethink the role of design as a way of catering for real needs, focusing on the user's daily life and problems, beyond the paradigm of form and

function, and beyond, exclusively, market demand. Hence, Papanek (1971) states that design must be socially and ecologically responsible and that it must be revolutionary and radical.

Subsequently, Ezio Manzini (2017) argued that design should go beyond the mere production of products and services and aim to empower individuals to lead the lives they choose and believe to be best for them. Arturo Escobar adds more layers to this view of the field when he proposes design “as an ethical praxis of world making”. Also, he understands design as from and for autonomy; and not the design embedded of “modernist unsustainable and defuturing practices” (Escobar, 2017, p.21).

The debate surrounding the social role of design has clearly gained prominence and recognition in recent years. When these discussions are integrated with debates about the meaning of citizenship, a clear convergence becomes evident. On one hand, citizenship involves the pursuit of autonomy, rights, and social advancement; while, on the other hand, design can provide the means to achieve these goals through the development of tools, platforms, and systems. The intersection of design and citizenship holds the potential for the creation of paths towards a more equitable society.

5 The relevance of Information Design in the Digital Age

If we are going to discuss Information Design today, we must understand what “today” represents. The digital age, also known as the information age, poses both advantages and challenges that shape the nature of the conversation and its direction. The digital world has surrounded us with information from all sides. From a subjective perspective, Bondía (2002) characterizes the modern individual as an “information subject”, who is constantly in the pursuit of information, highly connected, but, at the same time, vulnerable to the possibility of ignorance. The individual is unable to truly experience knowledge and wisdom gained from the gathered information as they are inundated with “inobjects.” Flusser (2006) explains that today's information is “soft” and ephemeral, slipping through our fingers and becoming “inobjects.” This results in the absence of the ability to experience.

Byung-Chul Han provides a deeper analysis of the digital age and its impact on community dynamics through digital communication. He says that it is

not the crowd, but the solitude that characterizes the current social constitution. It is encompassed by a generalized disintegration of the common and the community. Solidarity disappears. Privatization advances to the soul. The erosion of the community makes a common action more and more improbable. (Han, 2018 p. 21)

In a more recent text from 2022, Byung-Chul Han expands on Flusser's concept of “inobject” and refers to information in the digital age as a “non-thing”. “On the contrary, it is our communication and information intoxication that causes things to disappear. Information, that is, non-things, gets in the way of things and makes them disappear completely” (Han, 2022 p. 6). The digital transformation of the world has, thus, a liquefying effect on experiences, leading to

disruptions in the acquisition of wisdom-based knowledge. Additionally, the constant flow of information in the digital age is devoid of stability, and within the context of capitalism, this has resulted in the commodification of the immaterial.

We find ourselves in a paradoxical scenario. On one hand, we have seen that information is a key that opens doors in the pursuit of citizenship; on the other hand, important authors warn us of the risk that digital information brings due to its volatility, the lack of mediation, and the risk of horizontally flattening knowledge by avoiding deeper, more reflective insights. Lena Pinheiro emphasizes, in discussing the Ethics of Information, that "information actions, more than information itself, are impregnated, at the same time, with power and the possibility, therefore, are political actions and the ethics of politics is the one of responsibility" (Pinheiro, 2010, p. 58). Consequently, the analysis of the outlined scenario and the reflection on Pinheiro's speech make us glimpse how much the social role of Information Design cannot go unnoticed or be disregarded, given it acts precisely on recognizing the need of the other and facilitating access and understanding of information.

Thinking about it from a national perspective, according to IBGE¹, today, internet access reaches 90% of Brazilian households, confirming the stabilization of connectivity gains that has occurred as a result of the social isolation during the peak of the global COVID-19 pandemic. As previously discussed, connectivity facilitates content availability, but does not necessarily contribute to information understanding. *Infodemia*, a phenomenon of this era of communication and hyper connectivity, intensified by the COVID-19 pandemic, is the term given to the excessive volume of information. Nevertheless, much of this information is considered inaccurate or false (disinformation), which can cause confusion and disorientation. A report from the PAHO - Pan American Health Organization - warns, in the context of health, about the importance of access to the right information at the right time and in the right format. Worldwide, we have followed the exhaustive attempt by authorities to explain the importance of wearing masks, of keeping social distancing, and then, of vaccination. The efforts to raise awareness were, at times, weakened by the wave of disinformation, by the disjointed bundle of information that emerged from different sources. Official channels could not concentrate or validate the discourse, creating noise corridors that often put lives at risk. It was a moment when it was important to rethink the strategies of informing and communicating. It was necessary to understand, as Design Information proposes, the needs and context of the user, the best channels and formats, and what information should be prioritized.

Therefore, the present scenario is characterized by not only an excess of information, but also an inundation of information of questionable quality. In turn, Leite emphasizes that design mediates everyday relationships and has a political dimension in its transformative potential (Leite apud Kaiser, 2022). Hence, Information Design can play a vital role in arranging, categorizing, and conveying critical information in a way that is not swamped by the vast ocean

¹ *Instituto Brasileiro de Geografia e Estatística* (Brazilian Institute of Geography and Statistics).

of disinformation. This strategy, then, helps to guarantee that vital information is not lost and does not become a "non-thing."

Additionally, let us briefly examine the recent case of the discovery of a humanitarian crisis in the territory of the Yanomami Peoples in Northern Brazil. For years, since 2019, indigenous leaders have been attempting to shed light on the chaos that has taken hold in the region. However, the political situation in the country, coupled with the lack of space and access to resources that could amplify their voices, made these efforts ineffective. Today, after the uncovered scandal and facts, it is imperative to create systematic and strategic methods of recounting this story and its development in a manner that is both instructive and widely understood. Under this prism, it is necessary to mediate and structure information in a way that elicits experiences, and that it can be objectified, following the logic presented by Flusser and Han. The power of Information Design lies in its ability to center its philosophy on others and, at the same time, translate different realities to facilitate successful mediation between society, native peoples, and public power. This requires a complex but necessary articulation.

If the excess of information can be harmful and potentially confusing, the lack of it also limits the individual's life as a citizen and brings problems. According to Souza and Jacintho, in an article discussing access to information as one of the pillars of citizenship,

citizenship is a fundamental right that is achieved through transparency of information of public/collective interest (truth), consensual adherence and solidarity of citizens in favor of a greater good (consensus) and the interaction of citizens in the construction and improvement of democratic institutions (participation). The right to information enables the realization of three other fundamental rights: democracy, freedom of expression and social rights. (2016 p. 337)

In this exercise of democratizing access to information, the NGO Be-a-Bá do Cidadão emerged in 2004, formed by students of the Law course at Pontífica Universidade Católica in São Paulo, which works with the community to spread the word and raise awareness regarding people's rights and duties. According to the NGO's website, "the lack of information undermines the exercise of citizenship" and, later on, they inform that

this is how the first booklets appeared, basic instruments to bring knowledge to those who need it. With simple and direct language, our booklets playfully translate procedures ranging from the preparation of documents to consumer rights. Thus, we seek to guarantee access to justice and the democratization of legal knowledge.

Therefore, we see an example of how Information Design can contribute to the construction of platforms for action and systems of meaning. These apparatuses might give people, and the social groups of which they are part, a greater possibility of being what they want to be and doing what they want to do.

6 Conclusion

This exploratory article presents a theoretical discussion about the social importance of design, especially Information Design, in the face of contemporary challenges. Through bibliographic review, the text demonstrates the recent concern of significant authors about the political potential, in the broadest sense of the word, of an activity and field of knowledge that is so ubiquitous and permeates many aspects of current life. In the words of Escobar, "design is literally everywhere; from the largest structures to the humblest aspects of everyday life, modern lives are thoroughly designed lives" (Escobar, 2017, p.2).

Furthermore, when we investigate the concept of citizenship, its aspects and delimitations, and relate it to an intentional and coherent action of design, suggested by authors such as Escobar, Bonsiepe, Frascara and Redig, it becomes clear that Design can play a role in supporting the pursuit of full citizenship. In the context of Information Design, this is reflected in the very purpose and guidelines of this discipline. However, for that to happen, it will be necessary to expand the field beyond the utilitarianism of the surfaces of these informational artifacts in a critical perspective.

In conclusion, despite the current focus on other specialties that are more closely tied to the digital and virtual world, Information Design remains relevant in the face of excess, unorganized, or inaccessible information. It is worthy of further discussion and recognition not only for its ability to translate the world and create connections between knowledge and the user, but also for its mission of alterity, of recognizing the other as a unique and subjective individual.

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