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Concepts of information, document and information regime from the Frohmannian perspective in Information Science a systematic literature review in Brazilian journals

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ABSTRACT

Introduction: The present work proposes a discussion about the studies that work with concepts of information, document and information regime, from the perspective of Bernd Frohman, regarding its materiality, institutionality, historicity and autonomous documentary agency. The guiding question is: how do authors, in the context of Information Science, discuss approaches based on Bernd Frohmann's studies? **Objective:** Therefore, the objective is to identify the focus, the conceptions and characteristics related to the concepts of information, document and information regime, seeking to understand the manifestations and influences that this author brings to the theoretical incursions in Information Science. **Method:** The research was carried out in Information Science journals Qualis A1 and A2, from 2009 to 2019, and we opted for the Systematic Literature Review. **Results:** The results demonstrate the focus on the notions of information, document and information regime in Frohmann in these works, to support concepts and characteristics introduced by the authors in the field of Information Science in Brazil. **Conclusion:** It is considered that the analyzed works complement and expand several themes and emerge with reflections from philosophical aspects, through the information professional to informational practices surrounded by information, technology and power policies.

KEYWORDS

Bernd Frohmann. Neodocumentalism. Systematic literature review.

Os conceitos de informação, documento e regime de informação a partir da perspectiva Frohmanniana na Ciência da Informação uma revisão sistemática da literatura em periódicos brasileiros

RESUMO

Introdução: O presente trabalho propõe uma discussão sobre os estudos que abordam os conceitos de informação, documento e regime de informação, na perspectiva de Bernd Frohmann, no que diz respeito à sua materialidade, à institucionalidade, à historicidade e à agência documentária autônoma. A questão norteadora é: como os autores, no contexto da Ciência da Informação, discutem as abordagens baseadas nos estudos de Bernd Frohmann? Para tanto, objetiva-se identificar o enfoque e as concepções e características referentes aos conceitos de informação, documento e regime de informação, buscando compreender as manifestações e influências que esse autor traz às incursões teóricas na Ciência da Informação. **Método:** A pesquisa foi realizada em periódicos da Ciência da Informação Qualis A1 e A2, no período de 2009 a 2019, e optou-se pela Revisão Sistemática de Literatura. **Resultados:** Os resultados demonstram o enfoque nas noções de informação, documento e regime de informação

em Frohmann nesses trabalhos para embasar concepções e características introduzidas pelos próprios autores do campo da Ciência da Informação no Brasil. **Conclusão:** Considera-se que os trabalhos analisados complementam e ampliam diversas temáticas e emergem com reflexões desde filosóficas passando pelo profissional da informação até as práticas informacionais circundadas pelas políticas de informação, tecnologia e poder.

PALAVRAS-CHAVE

Bernd Frohmann. Neodocumentalismo. Revisão sistemática de literatura



JITA: AB. Information theory and library theory.

1 INTRODUCTION

In the mid-1980s, it was possible to observe, among the Information Science community, a new look or a resumption of looks at the problems of the document as an element embedded in the socio-cultural aspects with the historicized and institutionalized relations. This resumption gave rise to epistemological and philosophical incursions. Among the authors who stimulated the debates are Michel Buckland, Boyd Rayward, Ronald Day and Bernd Frohmann (FREITAS, 2010), who dedicate themselves to the study of the document with approaches that meet a sociocultural and critical perspective to mentalism, passing through the incursions of information studies and the concept of information regime, thus contributing to perspectives that add to Information Science a keen sense of denaturalization of its object. These reflections have several points in common, such as revisiting the studies of the classic authors, including Suzanne Briet and Paul Otlet, giving rise to the designation of neodocumentalists.

According to Ortega and Saldanha (2017), the criticism directed at the information paradigm by neodocumentalists lies in the complete absence of a relationship between the concept of information and its respective contexts (historical, political, social) and its excess of subjectivation. In addition, in the light of Paul Otlet's contributions, they seek to broaden the notion of the document concept, as one that is able to bring together different types of media, in which this object can be thought from the perspective of its social elaboration, through materiality and the institutionality it represents.

In a work from 2004, Frohmann emphasizes the importance of the contributions of documentary studies of the late 19th and early 20th centuries to the construction of new epistemological models involving the document and documentary practices in contemporary studies. Thus “[...]‘ document ’, in a line of reflection‘ neodocumental ’, with a Frohmannian background, reflects plural political conditions and in constant social struggle.” (ORTEGA; SALDANHA, 2017, p. 14-15). The authors explain that, since Paul Otlet, the document focuses on a demand between the geopolitical foundations and the adjustments that are made in the social sphere, because, in its structure, it demonstrates power and, at the same time, it is opposed to hegemonic discourses, contesting the impartiality imposed on its production and existence (ORTEGA; SALDANHA, 2017).

The document, postulated in Frohmann (2004), is constructed from operations with language, acting, for example, as a dominant discourse and establishing power relations. Therefore, in this perspective, it becomes an object to discuss essential issues in contemporary times, involving ethical principles in working with the most varied media.

It is pertinent to note that the discussions about the document's role and its social dynamics do not focus on the idea of rupture, but on a transition point between one paradigm and another, given the subjectivities and intersubjectivities involved in the construction of a reference and the possibility of observe this construction from the perspective of a historical process, that is, permeated by the continuous movement of the past and present relationship: the contribution of its predecessors and the rise of transformed conceptual models (FREITAS; FERRANDO, 2017).

In this sense, Saldanha (2012) takes up the position defended by Frohmann (2011), stating that it is not a question of abandoning what was postulated about information and the document itself in later decades, since this will be coated with new meanings: “It is necessary to think that the“ document ”is not, as a unit of analysis, in perfect abandonment between the 1960s and the turn of the century. The document is dressed in new signifiers - text, speech, record and, mainly, information.” (SALDANHA, 2012, p. 9). In the neo-documentary

Frohmannian perspective, the document, in its materiality, is the action of language, which is always changing, according to its respective contexts.

Considering the above, the guiding question of this work is: how do the authors, in the context of Information Science, discuss the approaches based on the studies of Bernd Frohmann? Therefore, the objective is to identify the focus and the conceptions and characteristics related to the concepts of information, document and information regime, seeking to understand the manifestations and influences that this author brings to the theoretical incursions in Information Science.

We opted for the Systematic Literature Review (RSL) because it is “[...] a type of investigation focused on a well-defined issue, which aims to identify, select, evaluate and synthesize the relevant evidence available” (GALVÃO; PEREIRA, 2014, p. 183), allowing the analysis of the current literature in a given field to contribute to the identification of trends, theoretical constructions and epistemological contributions that help in the consolidation and construction of knowledge. It is understood, then, that the relevance of studies that discuss concepts and identify research themes, as proposed here, collaborate for the consolidation of the fields of knowledge and, thus, contribute to further support the fundamental bases of Information Science, expanding its spectrum of discussions and enabling considerations that can collaborate with its strengthening in the academic and scientific context.

The surveys were carried out in Brazilian Information Science journals, Qualis A1 and A2 concepts, respecting the Qualis 2013-2016 classification, with a cut-off time stipulated in 10 (ten) years, from 2009 to 2019. The process respected the five stages of the Systematic Literature Review and is explained in detail in the analysis topic of this article. The search was carried out, first, based on articles that use Frohmann in their citations and references, and then proceeded to a complete reading of each article considering looking at the “focus” and the “conceptual and characteristic conceptions”. Thus, it is understood that the focus is on the direction of the theme of the article and the relationship with the concepts of information and document by Frohmann and conceptual conceptions and characteristics refer to the literal concepts used by these authors and to elements that build these concepts and they are liable to identify their characteristics. From then on, the complete reading of the articles provided the conditions for the analysis based on the concepts of information, document and information regime, supporting the construction of a discussion that sought to understand the approaches, uses of the concepts and contributions of these studies to the theoretical incursions of area within the scope of Brazilian literature.

Among the results, there is the use of the concepts of information, document and information regime based on the studies of Bernd Frohmann, in the 20 (twenty) articles analyzed, which made it possible to verify the emergence of debates around information policies in Science of Information. To the author's conceptions, the authors sometimes added their own incursions, revealing confrontations or even possibilities for expanding the approaches. It was also identified a relationship between these uses and an expansion of discussions about information in contemporary society, in addition to showing the understanding of information under the bias of the social paradigm.

2 THE INFORMATION STUDIES, DOCUMENT AND INFORMATION SCHEME IN FROHMANN

The aspects attributed to information by Bernd Frohmann concern its materiality, institutionality, the idea of autonomous agency of documents and its historicity. When he talks about the materiality of the information, the referred author turns his attention to the documents,

because it is through them that the information materializes, becoming public and social (FROHMANN, 2006). production contexts at the expense of meaning, Frohmann (2009) proposes to discuss the public, material and social character of information, seeking to demonstrate how it is related to their contexts, which highlights social practices, political and cultural. Thus, it reconciles the concept of information with these practices (in and involved by them), which are established through the materialization of information in documents, information that configures social life and materializes in an object which is, in itself, socially and culturally, the document itself (FROHMANN, 2009).

The materiality, in this sense, "makes the understanding of the public and social character of information more significant [...]" (FROHMANN, 2006). Thus, he argues that the study of information in the immaterial and abstract sense of the concept, an aspect determined in the mentalist paradigm of information, is limited.

The cognitive point of view relegates the social processes of production, distribution, exchange and consumption of information to a numerical level [...]. The social construction of informational processes, that is, the social constitution of 'users' needs', 'knowledge files' and schemes for the production, transmission, distribution and consumption of images, is excluded, since from the theory of [...] information science. (FROHMANN, 1995 *apud* CAPURRO, 2003, p. 9).

In this way, due to its insertion in neodocumentalism, the author points out the core of information studies for the document, removing the focus that is willing to propose an information theory based on the mental character of the act of informing, without considering what is essential in their discussions: the insertion of the document in social practices.

Wittgenstein's propositions regarding human language become a reference to Frohmann (2012) to reflect on questions that go beyond the question "what is information?". When proposing that language is effective in human actions, much more than in the conscience of individuals, the Wittgensteinian framework is used by the referred author in the cognitive deconstruction of information, shifting the center of his discussions from information to documentary practices (FERRANDO; FREITAS, 2017).

Appropriating Wittgenstein's metaphor of the seller of five red apples, who operates his understanding of the signs printed on paper through the action of choosing the "five red apples", Frohmann (2012), understands that the phrase's informativeness owes nothing to its significance or any mental process: "[...] since the philosophical idea of meaning as a theoretical species is excluded from the way in which the seller operates with words, so does the corresponding idea of information." (FROHMANN, 2012, p. 236). The author explains that, just as there is no specific thing that answers for the word "meaning", something similar occurs with the word "information". In this way, he continues, there are no answers to both questions: "What is meaning?" and "What is information?" (FROHMANN, 2012).

The author uses the Wittgensteinian framework to allude to the relevance of studying documentary practices at the expense of philosophical theories regarding the nature of information. According to this approach, studies involving practices with documents, inscriptions, a variety of statements and records that circulate would be much more useful to the foundations of Documentation (and, why not?, Archivology) and Information Science than to information itself.

[...] the informativeness of documents, when recognized as something dependent on practices, is also dependent on what shapes them and what shapes them. This article suggests that the promising directions to follow in order to search for the configuration

factors are the materiality of the documents studied, their histories, the institutions in which they are inserted and the social discipline that shapes the practices with them. (FROHMANN, 2012, p. 246).

Regarding the document itself, Frohmann (2006) highlights its importance for information studies, since it makes it material, palpable, tangible and recognizable within a process that involves choices and power relationships and, therefore, is social. For Frohmann (2006, p. 22), “[...] to study the documentation is to study the consequences and effects of the materiality of the information.” In contrast to information, texts and semiotics concepts, such as signs and signifiers, documents are material and their materiality has specific effects. (FROHMANN, 2007).

The documents in Frohmann (2007) take many forms, not only in the variety of their physical properties, but also in the different types of mass or inertia exerted by them, which are expressed in the institutional roles they play, manifested, among other actions, by resources and resistances. The documentation, in this way, would come to counter the immateriality of the information with the variety of materialities of the documents and their effects.

With the approach of the document in its materiality, the positions of Saldanha (2012) are considered pertinent when stating that the document is liable to be considered in this way, as it is symbolized by the language: “The use does not only create the document by using it, but, before “picking it up”, it already elaborates it, silently, in connection with the similarities of other probable documents.” (SALDANHA, 2012, p. 8). The author speaks of the symbolic operation with the documents, arguing that this is where the idea of materiality resides, a position defended by Frohmann. Not the physical record itself, but what is extracted from it. Thus, he argues, the document is a document for the following reasons: a) because it was documented (perspective based on studies developed by the precursors of studies with documents, such as Paul Otlet and Suzanne Briet); b) because he was consulted and / or appropriated by a subject; c) because it was considered, symbolized, from language. (SALDANHA, 2012).

The different effects exerted by documents (understood as those symbolized by language) start from documentary practices, which, in turn, are under the yoke of institutions. The forms of creation, informational supports and all the rules involving working with documents within the institutions show yet another aspect of information in Frohmann: its institutionality. Linked to the institutions, the documents express their power and authority, giving them performative competencies (FROHMANN, 2007). The institutions would then be the link between information and its materiality when printing some social discipline on the document, which generates, in this way, certain information effects that are, in essence, variable.

To discuss institutionality, the author resorts, this time, to Michel Foucault (2005), establishing relationships with the theory of utterances proposed by the philosopher. In the work *Archeology of knowledge* (2005), Foucault discusses the power and strength of the materiality of the statements when inscribed and manipulated by the institutions, arguing that the condition of materiality to which they are submitted is much less in the order of their location in the time and space of the than the order of the institution (FROHMANN, 2006). In this context, institutions would establish documentary practices that would materialize information, providing it with weight, mass and inertia, and establishing deep roots with social life.

If we conceive of documents as utterances, or as sets of utterances, then when we use the concept of materiality in Foucault's utterances - that is, the materiality of the order of the institutions - we see that the documents that circulate through and between the institutions have a pronounced materiality. It requires a lot of effort to produce them, institute practices with them, replace them with different documents, and install

documents manufactured and made available by one institution in another (FROHMANN, 2006, p. 23-24).

The (pronounced) materiality of the documents can be revealed by the institutions, according to Frohmann (2006), when we trace the institutional life of these objects. In this sense, the authority of the documents' information processes depends on the institutional locations of their production (FROHMANN, 2012).

Still on the institutionality of information, Frohmann (2006) also uses the records resulting from science, arguing that these records materialize the studies through the documentation of his observations and experiments. To exemplify, he cites the studies carried out by Ludwik Fleck (1935) relating syphilis to a property of blood, which only became in fact accepted because they were institutionalized through the material record in the documentation. In this case, the registration of science and, by extension, of institutionalized documents, collaborate with the stabilization of scientific information (FROHMANN, 2006).

The above statements demonstrate the weight of the document as a central object in the author's studies, because, in addition to discussing what the document is, it is open to debate about its effects on society, both on an individual scale (when the document is appropriated) and subsequent symbolic operation with him) as well as in the institutional practices that involve him. Discussions like this - more focused on knowing how the document operates and not what it is - leads us to another aspect of the information in Frohmann: the question of the autonomous agency of the documents.

When discussing the documentary agency, Frohmann (2007) reiterates the concepts of multiplicity and materiality of documents, which are opposed to the concepts of uniformity and immateriality of the information model. The autonomous document agency, in this case, works to make them independent, since it refers to the power that documents have to affect social practices through their information effects (FERRANDO; FREITAS, 2017).

Frohmann (2007) also points out that the characteristic of the autonomous agency of documents is motivated by three types of sources. The first of these are the different types of documents that exist, including works of art, films, music, books, which, depending on their content, tend to sensitize and motivate - or not - our emotions. As an example, he cites the case of a famous serial murder that took place in Canada, whose exhibition tapes were extinguished in order to save the victims' relatives from reliving the pain of what happened. The second source mentioned refers to the actions taken by certain instruments of a legal nature, such as adoption documents, those that certify citizenship, those relating to marriage and also divorce, that is, documents that, by their essence, provide legal existence to individuals, acting as an autonomous agency. Finally, the aforementioned author argues about the post-structuralist challenge of attributing the character of agency to non-humans, that is, to documents. In order to illustrate this aspect, he cites the work done by Bruno Latour¹ (1992), which attributed the category of agency to several non-human actors, including "automatic door opening mechanisms". (FROHMANN, 2007, p. 6).

¹ François Dosse, in the work *The Empire of Sense: the Humanization of Human Sciences* (2018), discusses the introduction of objects at the heart of research in Human Sciences, which until then were sciences practically without objects. In the structuralist context, the objects were there, but they acted as "simple sign supports." (DOSSE, 2018, p. 155). In this sense, the studies by Bruno Latour and the introduction of non-humans in scientific research in the area are also presented by Dosse to support his arguments regarding the changes in paradigms in research in the Humanities. In this changing context, Latour even proposed a hybridization between human and non-human poles, since, for the author, "the attribution of the status of humanity is negotiated, discussed, controversial, questioned." (DOSSE, 2018, p. 156).

As an area of investigation for neodocumentalists, the issue of documentary agency raises the autonomy of documents as a factor of the first order, and even if individuals enter the scene in this process, the effects on it will, in summary, depend on the documents:

The concept of autonomous agency, together with the concepts of multiplicity and materiality, belongs to the theoretical resources that articulate what documents do without reducing what individuals do with them. [...], the use of the new documentation of the concept of autonomous agency recognizes significant documentary effects that cannot be traced to the consciousness of human beings. (FROHMANN, 2007, p. 7).

In other words, documents, in their autonomous agency category, are independent of the subjects' conscience and the interpretation that each individual makes of them, being their own power to affect, to reallocate thoughts, to potentiate decisions in accordance with their contexts of use and the social practices involved in them (FERRANDO; FREITAS, 2017).

In addition to the material, institutional aspects and the issue of autonomous documentary agency, the document in Frohmann can also be understood in its historicity. Regarding this aspect, Frohmann (2012) argues that practices, customs and rules can emerge, disappear and still change over time, in a process that is historical and, therefore, not static and not timeless. The same occurs when dealing with documents, especially through their materialization and the social discipline imposed by the institutions, at a given time. Thus, “[...] ideas of materiality, institutions, social discipline and history provide a useful start for an information philosophy whose starting point is the concept of documentary practices.” (FROHMANN, 2012, p. 237).

Marked by historicity, the documents can be thought from the power relations that surround them, capable of producing - or not - real effects in their time. These truth effects are dependent on political, economic, social and cultural contexts, they are also dependent on the dominant discourses and the voices - even if muffled - of the marginalized are therefore dependent on their historicity:

Frohmann states that in order to understand the historicity of documentary practices, we have to consider that the relationship between social practices and documents is marked by time and space, and can be analyzed by historical permanencies and ruptures, as well as by the power and knowledge devices that involve political and cultural issues and that are present in these practices. (FERRANDO; FREITAS, 2017. p. 11).

In order to elucidate the aspect of historicity involved in documentary practices, Frohmann (2012) addresses the issue of scientific research conducted in the 17th century. In a context still steeped in Aristotelian-based philosophical knowledge, in which universal experience was worth as proof, it was only possible to make the studies made at that time valid and recognizable through the records of scholars, thus composing the registered scientific literature. The documentation of the observations of nature, made by the scientists of the time (Frohmann quotes Galileo and his experiments using the telescope), would validate the theses of these scholars.

Once again using the anachronistic language of information, it can be said that information about nature emerges as an effect of these institutionalized documentary practices. Far from transmitting information from nature - the noble substance presented by nature, first to the newly tuned minds of naturalist philosophers, who then communicated it to others through writing - the documentary practices of the period constituted it (FROHMANN, 2012).

Experience of beings, the observation of phenomena and legitimized through the speech of recognized scholars, whose speeches had power, exercised a place of test and unquestionable truths, permeate the Aristotelian heritage. In a process of breaking with this conception, scholars began to make use of the record of their observations, and, in a way, made them public with these documentary practices. In that historical context, these documents start to exercise credibility before the scientific community, which shows, then, the historicity of documentary practices. In this respect, it is possible to return to the question of the institutionality (already discussed previously) of information in Frohmann, since, once registered, the scientific discourse responds to specific institutional demands, configuring itself, then, as socially accepted.

As for the discussion related to information regimes, Frohmann (1995) inaugurates studies on the concept in Information Science, influencing several authors who are dedicated to studying it in our research field. According to the author: “[...] describing an information regime means mapping the agonistic processes that result in provisional and uncomfortable stabilization of conflicts between social groups, interests, speeches and even scientific and technological artifacts.” (FROHMANN, 1995, p.5, tradução nossa). With his studies about the concept, Frohmann (1995) broadens the spectrum of notions about information policies, very much focused on state issues and little considering the performance of the subjects and the technologies involved in this process. (BEZERRA *et al.*, 2016).

The discussions involving the notions of document and information in Bernd Frohmann will now be analyzed and categorized in articles from Brazilian scientific journals, trying to understand how the authors of Information Science develop the Frohmannian perspectives in their studies.

3 FROHMANNIAN APPROACHES IN THE CONTEXT OF INFORMATION SCIENCE SYSTEMATIC REVIEW OF LITERATURE IN BRAZILIAN JOURNALS

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This research was characterized as exploratory and bibliographic, systematic typology with a qualitative approach. We sought to identify and specifically discuss the concepts of information, document and information regime from the perspective of studies by Bernd Frohmann, based on published literature.

The methodology used was the Systematic Literature Review, which, according to De-La-Torre-Ugarte-Guanilo *et al.* (2011), it is a methodology with scientific rigor and explicit methods, aiming to assess the quality and validity of published studies to, consequently, verify the applicability of these studies in the context where they are developed. According to Sampaio e Mancini (2007), the RSL demonstrates historical relevance for presenting the modifications and developments of the studied field, which makes it a methodology that contributes to the process of constitution of science and also regarding updating, as the studies deal with a determined period that aggregates the research and results achieved, showing trends and deepening in subjects that have already been studied and that, in some way, continue to permeate the themes of field studies.

Therefore, the RSL follows steps for it to be carried out, with variations between seven (COCHRANE, 2008), five (DENYER; TRANFIELD, 2009) or four steps (BRINER; DENYER, 2012). We chose to follow the five steps determined by Denyer e Tranfield (2009), that unfold in: 1) formulation of the issue; 2) location of the studies; 3) evaluation and selection of studies; 4) analysis and synthesis and 5) reporting and using the results.

In the first stage, the question that guided the entire study was delimited, that is, how do the authors, in the context of Information Science, discuss the approaches based on the studies of Bernd Frohmann?

The second stage aimed to locate the studies that would be part of the analysis, in this way, the Brazilian journals Qualis A1 and A2, Qualis classification 2013-2016, in Information Science were determined. From the investigated journals, articles were retrieved in the following: Perspectives in Information Science, Bibli Encounters, Information and Information, Information and Society: Studies and In Question. The search was carried out on references that indicated the use of texts by Bernd Frohmann. The period determined was from 2009 to 2019.

The third stage consisted of the evaluation and selection of articles with the verification of references and citations. In total, 20 (twenty) articles listed below were analyzed:

Frame 1. Articles retrieved and analyzed

AUTHORS	TITLE	YEAR
Carlos Henrique Marcondes	Language and document: evolutionary and cultural foundations of Information Science	2010
Carlos Alberto Ávila Araújo	Information science as an integrating field for the areas of Librarianship, Archivology and Museology	2010
Aline Elis Arboit; Leilah Santiago Bufrem; Juliana Lazzarotto Freitas	Epistemological configuration of Information Science in Brazilian periodic literature through analysis of citations (1972-2008)	2010
Claudia Regina Delaia; Isa Maria Freire	Subsidies for an information management policy at Embrapa Solos: in the light of the information regime.	2010
Amanda Pacini de Moura; Marilda Lopes Ginez de Lara	Building the documentary building: Paul Otlet's conceptions for a science and a technique of documents	2012
Nadi Helena Presser; Mitsuo André Vieira Fukahori	Information needs: a socio-cognitive analysis in academic management in the context of regulation	2012
Shirley Guimarães Pimenta	Concepts of information and text in cognitive approaches in information science and information processing in cognitive psychology - an interdisciplinary view	2012
Vera Regina Casari Boccato	The socio-cognitive context of the indexer in the process of thematic representation of information	2012
Paula Regina Dal' Evedove; Mariângela Spotti Lopes Fujita	The new configuration of the cognitive paradigm in information science: contributions to the process of getting to know the information professional	2013
Lucas Almeida Serafim; Gustavo Henrique de Araújo Freire	Information regime for mapping information competences in higher education	2013

Jonathas Luiz Carvalho Silva; Henriette Ferreira Gomes	Information concepts in Information Science: analytical perceptions, propositions and categorizations	2015
Gustavo Silva Saldanha	On the bibliology between Peignot, Otlet and Estivals: aspects of a long "metaepistemological" discourse of the organization of knowledge	2015
Emy Pôrto Bezerra; Zayr Cláudio Gomes da Silva; Ítalo José Bastos Guimarães; Edivanio Duarte de Souza	Information regime: conceptual approaches and practical applications	2016
Arthur Coelho Bezerra	Surveillance and algorithmic culture in the new global information mediation regime	2017
Jackson da Silva Medeiros	Understanding the device: from information to the path to desecration	2017
Ilemar Christina Lansoni Wey Bert; Carlos Alberto Ávila Araújo	Assumptions of actor-network theory for the study of informational practices	2018
Gustavo Silva Saldanha	A method between the philosophy of information and the Knowledge Organization: Wittgenstein, historical epistemology and criticism of language	2018
Francisco Edvander Pires Santos; Maria Giovanna Guedes Farias; Luiz Tadeu Feitosa; Lidia Eugenia Cavalcante; Jefferson Veras Nunes	Audiovisual document and information: conceptual bases in a neodocumentalist perspective	2018
Cristina Dotta Ortega; Gustavo Silva Saldanha	The notion of a document in the space of Information Science: criticism and pragmatics of a concept.	2019
Maria Nélide González de Gómez	Reflections on the genealogy of information regimes	2019

Source: prepared by the authors.

The fourth stage took place with the analysis and synthesis. The complete reading of the articles was carried out seeking to identify the "focus", that is, the general theme of each work and its relationship with the concepts of information, document and information regimes in Bernd Frohmann. In addition to observing how the "conceptions and characteristics" of the concepts, which these researches bring, are worked on. In this sense, the question arises whether these studies work with the concept in a literal way and / or add or not their own conceptions to the referenced concepts. The order of analysis was increasing annually. It should be noted that all articles found with references to Bernd Frohmann were analyzed, since, from the defined perspectives, what was sought was to observe how the discussions around the concepts studied by the referred author are shown and unfold in the various subjects of the field of Information Science. The fifth stage consisted of the description of the results made from the critical analysis and discussion of the selected texts. Thus, it was noticed a multiplicity of themes in which the

concepts are used and collaborate widely in their approaches, as well as common themes discussed by the authors, as shown in Chart 2.

In Marcondes (2010), the focus is on conceptual conceptions that are part of the bases of Information Science, such as information and documents, using Frohmann's studies (1995; 2006) to support the discussion, especially the idea of deconstructing the imaginary of reification of information as an autonomous essence, to the detriment of the notion of document. As for conceptual conceptions and characteristics, it is clear that Frohmann's criticisms of the idea of information autonomy are cited and the author's understandings are added to ensure the importance of emphasizing the document as a socio-technical artifact in "its autonomy, externalization and registration" (MARCONDES, 2010, p. 10.). Furthermore, Marcondes (2010) proposes an ontological analysis of the document, based on the following perspectives: evolutionary; socio-technical-cultural object; object itself, based on the premise that "documents can only be seen in themselves with extreme care, as objects of analysis." (MARCONDES, 2010, p. 14).

In the defense of the imminently interdisciplinary characteristic of Information Science, especially with the Social Sciences, Araújo (2010) makes use of Frohmann's studies (2008) and his critical and cultural perspective of information to support this defense. Based on this, it seeks to demonstrate how the fields of Librarianship, Archivology and Museology are integrated. Regarding conceptions and characteristics, Frohmann (2008) is mentioned literally to support the defense of the interdisciplinary nature of Information Science and its intrinsic relationship with Social Sciences, highlighting its social perspective and the integration of Librarianship, Archivology and Museology.

In the article by Arboit et al., (2010), the focus is given to the analysis of works that address epistemological issues in Information Science. With regard to conceptions and characteristics, the authors identify the use of Frohmann (2008) in works of epistemological nature in the field of Information Science based on the social aspect of his approaches. According to the authors: "It is necessary to consider the conceptions of authors as [...] Frohmann [...] arising from aspects that privilege the social, historical and political aspects of CI." (ARBOIT et al., 2010, p. 33). The authors understand Frohmann's contributions to these works because his approaches are more of a social nature, including treating Information Science as a Social Science, contributing with reflections about the author's theoretical contribution to the construction of the bases of the analyzed articles.

In the study by Delaia and Freire (2010), there is the foundation in the concept of information regime by Frohmann (1995) as a way to subsidize the implementation of information management policies in a research institution. The conceptual conceptions and characteristics show the concept of the Frohmannian information regime presented in a literal way that is characterized in "[...] a set of networks where information is transferred from its producers, through determined channels, with the mediation of organizational structures to specific communities or consumers." (DELAIA; FREIRE, 2020, p. 109), consisting only of supporting the construction of the information management policy referred to in the studied institution.

Aiming to constitute bases for the construction of a science of the document, Moura and Lara (2012) resort to precursor studies involving the concept of document, passing by scholars called neodocumentalists, such as Frohmann (2008). The author is referenced as to the conceptions and characteristics of the document concept in order to reinforce the question of the absence of the Otletian reference in the analyzes involving the documentary method. Furthermore, regarding the concept of information, the author serves as a basis for deconstructing the idea of objective information, since its extraction from the content of the documents would not trigger the "[...] full disclosure of the facts". (FROHMANN, 2008, apud

MOURA; LARA, 2012, p. 14). In the Frohmannian conception, indicated by the authors, the character of the fact would be subject to its relationship with other facts, which indicates the error of isolating it from the documentary method.

In Presser and Fukahori (2012), the focus is on the information needs arising from the tasks practiced by the coordinators of graduate courses from the sociocognitive perspective. In this context, Frohmann (1992) is used as a critical basis for cognitive studies because they privilege “[...] the individual user at the expense of the broader social context”. (FUKAHORI; RESSER, 2012, p. 33). As for conceptual conceptions and characteristics, it was identified that Frohmann's (1992) critical perspective, regarding the cognitive paradigm, is mentioned to support the study that considers not only the users' mental needs, but also their searches for information as a result of social interactions they establish, thus focusing on the socio-cognitive approach.

In the article by Pimenta (2012), the focus is on the concepts of information from a cognitive point of view in Information Science. The author uses Frohmann's (1992) criticisms of cognitivism to establish a counterpoint to her approach and demonstrate that it is not a point of view fully accepted in the field for the study of information and the document. The conceptual conceptions and characteristics demonstrate that Frohmann's (1992) critical conception of the cognitive paradigm is used by the author to broaden the view regarding the processing of information in the minds of individuals. Thus, the author's premises are presented in a literal way, however, they are used by the author to clarify that the process of appropriation of information in the minds of individuals goes much further: “[...] operating as a power effect through different discursive procedures.” (PIMENTA, 2012, p. 49). With this view provided by the criticisms of Frohmann (1992), Pimenta (2012) highlights the different conceptions and ideologies that operate in science and, more specifically, in Information Science.

In an interdisciplinary study between the cognitive perspective of Information Science and Cognitive Psychology to understand the work of the indexer from the sociocognitive context, Boccato (2012) uses the perspectives of Frohmann (1990) in proposing an approach that goes beyond the point from a cognitive point of view in the focus of his study. Understanding of this CI as a social practice. Regarding the conceptual conceptions and characteristics of the concepts, to support the critique of cognitivism, the author uses Frohmann's (1990) postulates about the indexing work, which, in the author's view, occurs in two moments: in the first, documents are implicitly represented by indexing terms, characterized mainly by a mental operation, and in the second, the transition from indexing terms to the lexicon of a controlled vocabulary occurs. The studies by Frohmann (1990), in this sense, are appropriated by the author to support the defense that the work of the indexer goes beyond individualistic cognitive models, since “[...] these cognitive processes of the individual are associated with social, cultural and historical contexts [...]” (BOCATTO, 2012, p. 78).

The focus given by Dal'Evedove and Fujita (2013) goes through the studies of human cognition in Information Science to approach the actions of information professionals in a subjective perspective. In this sense, Frohmann (1992) is used as a counterpoint to cognitive studies in the field for making a critique of the associative and idealistic perspective represented by the cognitive paradigm. The conceptual conceptions and characteristics demonstrate that Frohmann's (1992) studies regarding criticisms of the cognitive paradigm are used by the authors to support the sociocognitive perspective that should support the practices of information professionals, but without adding too much to the author's arguments.

Freire and Serafim (2013), as for the focus, aimed to carry out a mapping of information competences in Brazilian higher education using the perspectives of the concept of Frohmann's information regime (1995). As for conceptual conceptions and characteristics,

studies on the concept of information regime are only mentioned by the authors, and are not developed in more depth in the work.

Regarding the approach, Gomes and Silva (2015) analyze the various information concepts existing in the field of Information Science, using Frohmann's notions (2008), regarding that concept. In the regarding conceptual conceptions and characteristics, Frohmann's (2008) perspectives on the concept of information are presented to other authors through a table, aiming to defend that the subjects of information are endowed with a cognitive sense and, at the same time, they are inserted in their respective social realities, thus making it possible to understand the real meanings and effects of information. The idea of materialized information defended by Frohmann (2008) is cited literally, when investigating the role of documentation, materializing by institutional and technological means.

With a focus on studying Bibliology as a discourse on the organization of knowledge, Saldanha (2015) uses Otletian, Peignotian and Estivalsian bases. Thus, neodocumentalist perspectives are visited, such as those by Frohmann (2004; 2011), to support the approach. With regard to conceptual conceptions and characteristics, Frohmann (2004; 2011) is used in the work as an author of the neodocumentalist conception that resumes studies on the document at the center of discussions in Information Science, understanding the information in its materialized perspective. Saldanha (2015), however, adds to his own considerations the fact that Frohmann belongs to an English-speaking context, which ends up building the expression “information science”, bringing the questions and discussions involving the very concept of information.

Bezerra et al., (2016) discuss the concepts of information regime from the perspective of CI using the inaugural studies by Frohmann (1995) to support the discussion in its practical application, by identifying the presence of information regimes in three different spaces of information. The conceptual and characteristic conceptions show the studies of Frohmann (1995) regarding the concept of information regime that is quoted in a literal way, demonstrating that this makes it possible to expand the reductionist vision of information policies focused only on governmental aspects. They also mention the appropriation of the concept of device, proposed by Michel Foucault and worked on by Frohmann (1995), to refer to the power devices built beyond issues related to the state, also passing through the formation of discourses that emerge from the materiality of the subjects and documents. The authors also establish a comparison between the concept of information regime developed by Frohmann (1995) and Braman (2004), identifying approximations and distinctions between these relationships. Furthermore, they do not fail to mention the influences of Bruno Latour's Actor-Network Theory (TAR) on Frohmann's theoretical incursions regarding the concept of information regime, since it considers human and non-human aspects to establish the concept, evidencing its great divergence with other conceptions.

In the focus of Bezerra's work (2017), the culture of algorithms in the new global information mediation regime is studied from the concept of information regime developed by Frohmann (1995) to highlight the devastating effects of this new regime on culture and human privacy. As for the conceptual conceptions and characteristics, the concept of information regime by Frohmann (1995) is worked on literally and also its association with the Actor-Network Theory. (TAR). Frohmann's studies support Bezerra's (2017) understanding regarding the constitution of information policies: to understand them, it is necessary to undertake an analysis of the concept of information regime and this analysis inevitably passes through the present constructivist look at TAR. In this way: “Frohmann's (1995) concerns, therefore, focus on the processes by which artifacts, networks and their relationships are built in the midst of the current information regime.” (BEZERRA, 2017, p. 71).

Medeiros (2017) makes an interpretation of the concept of Michel Foucault's device, and its subsequent appropriation by CI authors, for the construction of the conceptual body related to information and the document. It also refers to the concept of information regime, among them, the one developed by Bernd Frohmann. The conceptual conceptions and characteristics deal with the concept of the Frohmannian information regime, which, in the view of Medeiros (2017), allowed a view beyond the concept of information policy, which would be reduced to the role of the state. The conception of a document in Frohmann (2009) is also mentioned, enabling Medeiros (2017) to identify the relational character of the idea of a document and also to argue that the document “[...] carries the communication of information” (MEDEIROS, 2017, p. 172).

In the article by Araújo and Berti (2018), the focus is on the study of users in a social perspective of CI and Frohmann (2008) is mentioned as one of the authors who are anchored in a social epistemology of information. are used to defend the social condition of information and Frohmann (1995) is cited to support this defense. The actions of informational subjects, in this sense, attribute certain intentionalities to this information, in addition to supporting the postulate that there is no ideal information, since it is impregnated with personalities and intentionalities.

Saldanha's work (2018) proposes to discuss possibilities of systematizing a philosophical method, ranging from the philosophy of information to the organization of knowledge. As one of the authors who stuck to Wittgenstein's philosophical incursions to discuss the materiality of information, Frohmann (1990; 2009) is cited by the author, which leads to the conceptual conceptions and characteristics through which Frohmann (1990; 2009) is referenced as one of the authors who delves into Wittgensteinian studies. In the perspective of Saldanha (2018), however, this study is carried out in reverse: “going from criticism to the mentalism of the organization of knowledge to the philosophy of information.” (SALDANHA, 2018, p. 82).

In Cavalcante et al., (2018), the focus is on the document and audiovisual information, involving, above all, the issue of producing this type of document, since it starts from materialized information, as they argue. For discussing issues involving materialized information, they use neo-documentary conceptual bases with a Frohmannian background (2008). used by the authors in a literal way to build the neodocumentalist theoretical bases on audiovisual documentation. When talking about digital documents, Frohmann (2008) provides the necessary basis for authors to establish their constructs regarding audiovisual documentation, understood as the materialization of information that is processed by the textual dimension of audiovisual information.

Ortega and Saldanha (2019) seek to understand the notion of document in CI, going through the classic approach of Documentation and a possible neodocumentalist perspective. Bernd Frohmann (1990; 2011) is studied in this work as a representative of the Anglophone current, discussing the document in its applications for access to information. The conceptual conceptions and characteristics are approached by the authors from the neodocumentalist perspective of the referred author, which is cited and, to his incursions, the perception that Frohmann (1990; 2000; 2006; 2011) is added to the classic notion of document, realizing in the Otletian context, the conceptual tools to discuss the diffusion of documents on now technological platforms. In addition, the authors add to the author's conceptions, regarding his studies on information, the recurring criticism of scholars who superimpose the philosophy of information over the philosophy of the document. In view of this, the ‘document’, in a line of reflection ‘neodocumentalist’, with a Frohmannian background, reflects plural political conditions and in constant social struggle.” (ORTEGA; SALDANHA, 2019, p. 203), which ends up hampering the perception of the social role of documents today.

The focus given by Gonzalez de Gomez (2019) is the conceptualization of the information regime in CI, proposing reflections on the concept and using the perspective of Frohmann (1995) regarding his propositions for the concept. As for the conceptual conceptions and characteristics, the concept of information regime by Frohmann (1995) is mentioned by the author presenting itself as one of the pillars for it to be discussed throughout the work.

In the course of the analyzes, it is possible to infer and perceive issues that pervade different themes in the context of Information Science. These themes show converging conceptual aspects addressed by the authors, explained below:

Frame 2. Themes with convergent conceptual aspects among the analyzed authors

AUTHORS	CONVERGENT CONCEPTUAL ASPECTS
Marcondes (2010), Araújo (2010), Pimenta (2012), Gomes and Silva (2015), Saldanha (2015), Medeiros (2017), Araújo e Berti (2018), Saldanha (2018), Cavalcante et al., (2018), Ortega and Saldanha (2019), Gonzalez de Gomez (2019)	Information concept. Materialized information. Information from the material, social, cognitive point of view;
Marcondes (2010), Moura and Lara (2012), Ortega and Saldanha (2019)	Document as a socio-cultural object. Document science. Documentation.
Araújo (2010), Marcondes (2010), Arboit et al., (2010), Boccato (2012),	Epistemological studies in Information Science. Interdisciplinary aspects. Cognitive paradigm. Social perspective.
Delaia and Freire (2010), Freire and Serafim (2013), Bezerra et al., (2016), Bezerra et al., (2016), Bezerra (2017), Medeiros (2017), Gonzalez de Gomez (2019)	Information regime concept. Information policy.
Moura and Lara (2012), Boccato (2012), Dal'Evedove e Fujita (2013)	Information Organization. Documentary studies. Sociocognition.
Presser and Fukahori (2012), Gomes and Silva (2015), Araújo and Berti (2018), Araújo and Berti (2018),	Sociocognitive perspective. User studies. Informational subject.
Freire and Serafim (2013), Bezerra (2017),	Competence in Information. Information Mediation.
Saldanha (2015), Saldanha (2018)	Knowledge organization.
Bezerra et al., (2016), Bezerra (2017), Medeiros (2017),	Device – Michel Foucault; Actor-Network Theory (TAR) - Bruno Latour

Source: prepared by the authors.

The concept of information is characterized from Frohmann's incursions, but also opposed to the context of Information Science as a way of reflecting the various factors of materiality, institutionality and language, ranging from epistemological approaches to the discussion of the concept itself, passing through who discuss the nature of Information Science as well as its own object, considering the social approach of this concept and, in parallel, with

mentalist conceptions and referring to the cognitive model, mainly in the reflections about the information professional and the activities carried out in the treatment process information..

Thus, the concept of document is approached in a way that contemplates discussions around the support and implications that this document comes to have as a material element that contains targeted information and addressed according to the context in which it was produced. It also promotes discussions in relation to the object of Information Science and a rethinking of informational practices.

It is also possible to observe that the concept of information regime is treated as a guiding element in epistemological discussions and on technological, power and information policy issues, which surround the characteristics from which this information will be shaped and worked in the various spheres institutional. Cross-sectionally to the main objective of this study, the topics addressed discuss the sociocognitive issues of users and information professionals, organization of information and knowledge, user studies, information policies, information competence, information management, information mediation.

The approaches of Bernd Frohmann's studies pervade all the themes and axes of Information Science and show themselves as an important perspective to discuss from classic aspects of science to the current issues that emerge around these very specific and important concepts for Information Science.

4 FINAL CONSIDERATIONS

The perception of the way in which the authors researched in this work approached Bernd Frohmann was fundamental to deepen and broaden the understanding of neodocumentalism and the trajectory of the aforementioned author in his studies. As one of the precursors to returning to the document as an object of central study in Information Science, Frohmann contributed to transforming the paradigms of the field, which, in the 1980s, were poring over the concept of information without establishing relationships with their contexts, be they political, social, historical (ORTEGA; SALDANHA, 2017).

In order to substantiate this contextualization, Frohmann attributed several essential aspects to the information, which concern its materiality, made possible by documentary practices; the power relations established by the documents, which constituted its institutionality; the autonomous agency of documents, operated by the power that these objects have to affect social practices through their information effects; in addition to historicity, that is, the historical contexts that determine documentary practices. In this way, he also inaugurated studies on the concept of information regime, fundamental for discussions involving information policies in CI.

These aspects are explored in the analyzed articles, providing a solid theoretical basis for these texts in order to achieve their objectives. It was noticed a wide use of Bernd Frohmann's concepts of information and document and the immediate identification of this author to neodocumentalism, in addition to studies involving the concept of information regime by the same author. It was also noted that the studies pervade all the themes and axes of Information Science, bringing reflective research on the way in which the information, the document and the information regimes act and interfere theoretically, epistemologically, in the practices of the information professional and in relation to users of information.

In addition to the literal use of the Frohmannian concepts, it was possible to identify the presence of conceptions by the authors themselves, confronting them with those of Frohmann or even expanding the approaches of the neodocumentalist author. It was also identified a relationship between these uses and an expansion of the discussions about

information in contemporary society, which is evident in the speech of González de Gómez (2019, p. 156): “By giving visibility to the historical scenario that contextualizes these uses from the concept, traces of the strengths and weaknesses of the conceptions of network societies emerge and the debate on the regulatory architectures of contemporary societies is gaining relevance.”.

It is considered that the discussion of informational studies based on Frohmann also evidences the understanding of information under the bias of the social paradigm. In other words, for Bernd Frohmann and for the analyzed authors, the information is alive, since the documentary practices are established with and from it, and thus, social relations, power relations, are constituted.

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