Levels of critique in models and concepts of human information behaviour research

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Abstract

Purpose – To elaborate the nature of critique presented in the models and concepts of human information behaviour (HIB) research by identifying the issues to which the critique is directed and the ways in which the critique is conducted.

Design/methodology/approach – Conceptual analysis focusing on 58 key studies on the topic. First, the objects and ways of conducting the critique were identified. Thereafter, three levels of depth at which the critique is conducted were specified. The conceptual analysis is based on the comparison of the similarities and differences between the articulations of critique presented at these levels.

Findings – At the lowest level of depth, critique of HIB research is directed to the lack of research by identifying gaps and complaining the neglect or paucity of studies in a significant domain. At the level of critiquing the shortcomings of existing studies, the attention is focused on the identification and analysis of the inadequacies of concepts and models. Finally, constructive critiques of research approaches dig deeper in that they not only identify weaknesses of existing studies but also propose alternative in which the shortcomings can be avoided, and the conceptualizations of HIB enhanced.

Research limitations/implications – As the study focuses on critiques addressed to HIB models and concepts, the findings cannot be generalized to concern the field of Library and Information Science (LIS) as a whole. Moreover, due to the emphasis of the qualitative research approach, the findings offer only an indicative picture of the frequency of the objects critiqued in HIB research.

Originality/value – The study pioneers by providing an in-depth analysis of the nature of critiques presented in a LIS research domain.

Keywords Critique, Concepts, Human information behaviour, Information seeking, Models

Paper type Research paper

Introduction

Critique is an integral element of scientific discourse and a significant factor the advancement of research. The word *critique* originates from Greek *kritikē̄*, a noun derivative from *kritikós*, i.e. "discerning, capable of judging" (Merriam-Webster, 2020b). *Criticism* – a related word–usually means "the act of criticizing" or a "remark or comment that expresses disapproval," but criticism can also refer to the activity of making judgments about the qualities of books and movies, for example (Merriam-Webster, 2020a). In common usage, the terms critique and criticism primarily mean to make a negative assessment of something, merely finding fault or complaining (Boland, 2013, pp. 2–4). In scientific discourse, however, the above terms can be interpreted more broadly because they mean an appraisal of both the negative and positive aspects of an issue. Critique not only reveals vague concepts and methodological flaws also offers constructive ideas about how to avoid such shortcomings and how to enhance a research approach. In this regard, critical notions presented by peers are particularly important, and the nature of critique evidences the maturity of a research domain (Frawley, 2015).

The present study was inspired by the observation that so far, the picture of the nature of critique exercised within library and information science (LIS) has remained unclear. This is also evident in individual LIS domains such as human information behaviour (HIB) research – the context of the present investigation. This domain was chosen for the object of study because since the 1960s, HIB research literature offers a rich body of texts incorporating critical notions about the shortcomings of studies on information needs, seeking and use, as well as they ways in which HIB research could be enhanced. The critique directed to HIB research appears at diverse levels of abstraction. Many of the most radical criticisms deal with the metatheoretical assumptions of studies on informational phenomena. For example, Hjørland (2004) and Frohmann (2004) have objected the antirealist, idealistic and nominalist tendencies in HIB research by asserting that they remove the attention from reality to subjective phenomena such an individual's cognitive structures having no real explanatory power. More recently, Talja and Nyce (2015) critiqued research approaches which take the construct of task as a point of departure – a popular approach in studies on work-related information seeking and retrieval. Another recurrent topic of critical discourse is the lack of HIB theories. Vakkari (1997) reviewed information seeking literature up to mid-1990s and concluded that research conducted in this domain suffers from the lack of theoretical growth and is often plagued by unspecific definitions of basic concepts and their relations. More recently, Willson *et al.* (2020) crystallized the long-time problem of HIB research by pointing out that "while there is a long and rich tradition of creating models and frameworks in information behaviour ... this has not been the case with the development of theories". Nevertheless, during the two last decades, there are examples of studies indicating progress in this regard. Cole (2013, pp. 4–5) noted that since the 1990s, a paradigm shift has occurred giving rise to more sophisticated research in theorizing HIB. This is due to the growing interest in the development of scientific models so that the research can move beyond straightforward descriptions of phenomena to the ability to predict and explain phenomena related to HIB.

The above examples form only a part of the critical notions presented in HIB research. They are indicative of diverse objects of critique, for example, vague conceptualizations of HIB phenomena (Vakkari, 1997) and the narrow focus of the models for work-task related information seeking (Talja and Nyce, 2015). The above examples also suggest that the nature of the critique presented in the domain of HIB can be best examined by concentrating on the models and concepts of human information behaviour. Therefore, to substantiate the picture of the nature of critique in this domain, conceptual analysis was made by focusing on the critical notions directed towards individual concepts and models of HIB research. To achieve this, an attempt was made to identify the objects of critique, as well as the ways in which researchers criticize such concepts and models. Furthermore, attention was devoted to the levels at which the critiques are presented. It is suggested that at the lowest level of depth, critiques are confined to the identification of gaps in prior research, while at the deepest level, critical notions also incorporate constructive ideas about how to elaborate a concept or refine model, for example. The findings of the present investigation contribute to HIB research by demonstrating how the critique manifests itself at various levels of depth and how the critical notions are articulated in scientific discourse.

The rest of the article is organized as follows. First, to give background, the nature of critique is characterized, followed by the explication of the research framework, research questions and methodology. The main part of the article will be reserved to the communication of the findings. The last sections discuss the findings and reflect their value.

Background
Approaches to critique
Since the Enlightenment, critique has played an overarching role in how Western society understands itself and its basic institutions. Kant pioneered by approaching critique in terms of reflective examination of the validity and limits of a human capacity (Raffnsøe, 2015).

Importantly, Kant also set the agenda for the major strands of critique in contemporary philosophical thought, culminating in the works of Husserl, Popper, Habermas and Foucault. They have approached critique as a systematic inquiry into the conditions and consequences of a concept, a theory or a discipline, attempting to understand their validity and limitations.

From the perspective of social sciences, critique can generally be understood as the discourse of discontent (Werneck and Loretti, 2018). There is a small number of studies examining the features of critique presented in diverse domains of research such as sociology, management science and psychology. Savage (1981, pp. 1–61) analysed the critiques directed to the sociological theories of Talcott Parsons. The critiques were identified by two major criteria: the object of critique and the "technique" of critique, that is, the fundamental conditions of existence of diverse modes of critique in relation to the conceptions of knowledge and discourse. Five modes of critique were found: the critique of the subject, the realist mode of critique, the epistemological critique, internal critique and evolutionist critique. Frawley (2015) examined the issues critiqued in the domain of happiness research. Three major criticisms were identified: the culture-bound and normative character of happiness, "bad science" and scientism, and diminished subjectivity and individualization. More recently, Rudolph et al. (2020) made a systematic review of critiques addressed to research on "healthy leadership". The study revealed several weaknesses, for example, unclear construct definitions and operationalizations of "healthy leadership" behaviour.

In the domain of HIB research, there are no prior studies directly comparable to the investigations made by Frawley (2015) and Rudolph et al. (2020), for example. However, there are a few examples of related work. First, at the level of metatheoretical and methodological discussion, researchers have critiqued the ontological and epistemological assumptions of the traditional user studies which draw on institution-centred viewpoint (Dervin and Nilan, 1986). Second, at a more concrete level of discussion, there are investigations focusing on the critique of individual HIB concepts such as information need (Wilson, 1981) and information use (Kari, 2007). In addition, there are a few studies identifying shortcomings in individual models for information seeking (e.g. Case and Given, 2016, pp. 148–175; Wilson, 1999). On the other hand, HIB studies such as these are limited in that they do not discuss in more detail the nature of critique directed to a concept or model. For example, the level at which the critique is presented is not reflected. However, these studies offer fruitful research material for the present investigation because the critical notions articulated in prior HIB studies allow the analysis of both the objects of critique and the ways in which the critiques are presented.

To bridge this gap, Boltanski's (2011) approach to critique is particularly relevant for the present study because he suggests that critique applies to all forms of descriptions or judgments on reality. Drawing on Boltanski's ideas, Ward (2020, pp. 55–56) developed an analytical tool which specifies the degrees of critique in a particular domain of public discourse, that is, vaccine criticism. First, critique on vaccination can manifest itself in *doubt* presented by the critic. Ultimately, doubt is based on the pervasiveness of uncertainty which gives people a "grip" to express their dissatisfaction or discontent. Underlining uncertainty in an opponent's claims to factuality represents the lowest degree of critique. Second, the critique manifesting itself in *re-prioritizing* goes deeper because the critic proposes a different evaluation of the importance of the statements on reality in their opponent's discourse. Third, *side-stepping* consists in pointing out an important element that is not taken into consideration by the actor who is criticized. The critic does not only re-evaluate the importance of one or several aspects of reality as they are presented in the discourse of the criticized; the critic also identifies significant elements of reality which are ignored. Sometimes, the critique can proceed to the ultimate degree, resulting in the *revealing of the unknown*. The critic demonstrates that the actor whose discourse is being criticized fails recognize the element put forward by the critique as existing, as real. Thus, taking a novel viewpoint to an issue at hand, the critic reveals a fundamental divergence on what constitutes the world.

Research framework

The prior section suggests that critique is a multifaceted discursive phenomenon that can be approached from diverse viewpoints. For example, attention can be directed to the ways in which researchers have critiqued the theories proposed by a scholar (Savage, 1981) or how researchers have criticized studies conducted in various domains (Frawley, 2015; Rudolph *et al.*, 2020). The research framework of the present investigation mainly draws on Ward's (2020) study discussed above. Although the categorization indicative of the degrees of critique was developed for the analysis vaccine criticism, Ward's approach is sufficiently generic for the examination of critical scientific discourse in the domain of HIB research.

However, to be better applicable for the needs of the present study, Ward's categories were used selectively, and they were modified to some extent. First, the term *level of critique* was preferred over the expression of "degree of critique" because the former is more indicative of the depth of criticism. The word "degree" is less clear in this regard because it may also refer to extent to which an issue is critiqued, for example, partially or wholly – an aspect which will not be examined in the present investigation. Second, Ward's category of "doubt" was excluded from the study because doubt tends to be a pervasive element of all critique, independent of its level of depth. Third and most importantly, Ward's three other categories were used in a modified form in the research framework. As these categories are indicative of different degrees of critique which does not merely refute an existing conceptualization but also proposes a constructive alternative, the categories of "re-prioriziting", "side-stepping" and "revealing the unknown" were combined and named as *critiquing constructively to enhance research approaches*. In the combined construct, the component of "re-prioritizing" suggests that the object of the critique can be conceptualized more adequately by taking an alternative way. The component of "sidestepping" identifies significant elements worth further attention, and the component of "revealing the unknown" is indicative of the ways in which prior studies have failed recognize how a research approach can be elaborated further. As the above three components are often closely intertwined in the articulations of constructive critiques, the combined construct was preferred because the specification of such critiques into three sub-levels would not have offered added value to the analysis.

The research framework was substantiated further by adding two categories which were derived inductively from the preliminary analysis of the research material. First, the category of *critiquing the lack of research* exemplifies criticism at the lowest level of depth because critique of this kind merely indicates research issues that have been neglected in prior research. Second, critical notions can appear at a deeper level when the critic identifies and analyses flaws in existing HIB concepts ad models. This category was named as *critiquing the shortcomings of existing studies*.

Summing up: based on the modification of Ward's (2020) approach plus adding two new categories specified above, three levels of critique in HIB research were identified:

(1) Level 1: *Critiquing the lack of research.* The critic identifies the lack or paucity of research on a relevant issue by depicting gaps in prior HIB models and concepts.

(2) Level 2: *Critiquing the shortcomings of existing studies.* The critic identifies and analyses weaknesses of HIB concepts and models by focusing on their flaws.

(3) Level 3: *Critiquing constructively to enhance research approaches.* The critic not merely identifies and analyses the weaknesses of existing studies but also presents an alternative approach to enhance the conceptualizations and models of HIB.

Moreover, drawing on Savage's (1981, pp. 1–61) study, the research framework was substantiated by two key aspects constitutive of critique. First, the *object* of critique is generally understood as something towards which cognition is directed, as contrasted with

the thinking subject, that is, the critic. An object of critique may be, for example, a vague concept or a narrow model for HIB. Second, based on the preliminary analysis of the research material, the research framework was finalized by adding the aspect indicative of the *approach* used in the critique, for example, fault-finding or the analysis of the limitations of a HIB model. The research framework is presented in Figure 1.

Figure 1 suggests that critiques can be examined by focusing on three levels at which researchers present critical notions about the shortcomings of HIB research. At the lowest level of depth, such critiques may be directed to the lack, neglect or insufficiency of HIB research in a domain. As the findings section indicates, critique of this kind is very common in HIB research. Researchers may contend, for example, that prior studies have largely ignored research topics such as affective factors of HIB (Fourie and Julien, 2014). Second, the critic may dig deeper when he or she identifies shortcomings in the conceptualization of key concepts such as information use (Kari, 2007). Finally, at the deepest level of critique, scholars may present constructive critique focusing on individual research approaches, conceptualizations and models. Critique of this type is not only based on fault-finding but it also offers an alternative viewpoint from which a phenomenon may be approached more fully. For example, Niedzwiedska (2003) presented critique of this kind while evaluating the relevance of Wilson's (1997) general model for information behaviour.

Research questions and methodology

Drawing on the research framework depicted in Figure 1, the present study seeks answers to the following questions:

RQ1. At various levels of critique, what are the main objects of critique in HIB models and concepts?

RQ2. What is the quantitative share of diverse objects of such critiques?

RQ3. At various levels of critique, what kind of approaches are used while critiquing such objects?

To sharpen the focus of the study, three major limitations appeared to be necessary. First, no attention will be devoted to critiques directed to the metatheoretical, that is, ontological and epistemological assumptions of HIB research. Examples of such critiques can be found in Dervin and Nilan's (1986) review of the institution-centred approach to user studies and
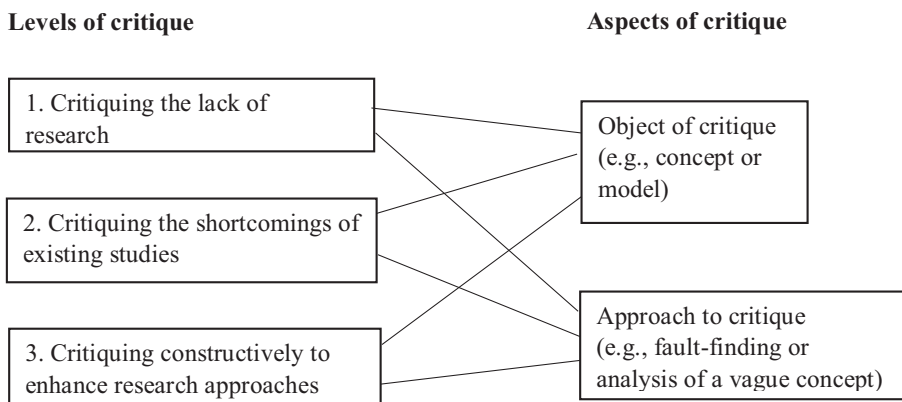
Figure 1.
The research framework

Frohmann's (2004) critical notions for the dominating position of the cognitive viewpoint in information science. Second, the present investigation excludes the critiques directed to the methodological approaches of HIB research (e.g. Davenport, 2010; Hertzum and Hansen, 2019). Third, due to the qualitative approach adopted in the study, the quantitative features of critique are characterized only in a limited sense by depicting the frequency of diverse objects of critique (RQ2). This is because a more detailed analysis specifying the quantitative relationships between the objects, approaches and levels of HIB critiques would require a separate study.

The research material was identified by conducting literature searches in eight major databases: Academic Search Ultimate (Ebsco), Google Scholar, Lisa, Sage Journals Online, Science Direct, Scopus, Springer Link and Wiley Online. The search terms included critique, criticism, lack, neglect, shortcoming, weakness, information behaviour, concept and model. It appeared that these searches extensively identified literature relevant to the research topic. Moreover, diverse databases such as Lisa, Science Direct and Scopus retrieved the same items, thus suggesting that the initial sample of studies is saturated and that additional searches from other databases would not have resulted in the identification of new material directly relevant to the topic. In addition, the review articles published in the volumes of Annual Review of Information Science and Technology in 1966–2011 were examined to obtain relevant research material. The searches resulted in the identification of 92 potentially relevant investigations from the period of 1966–2020. A closer reading revealed that 38 of these studies are less relevant for the analysis because they mainly describe the findings of prior investigations or fail to specify sufficiently the object of critique referred to in RQ1 or the approach used in the critique (RQ3). Therefore, these studies were excluded from the final sample which thus includes 58 investigations published within the period of 1966–2020. Of them, most are journal articles (50 items); the sample also includes three books, four book chapters and one conference paper.

The research material was examined by means of evolutionary concept analysis (Rodgers, 2000). This method emphasizes the dynamic nature of concept development by examining the application of concepts within a given context or group of contexts in order to identify its attributes within that context (Fleming-May, 2014, p. 205). The analysis includes six major steps:

(1) Identify the concept of interest and associated expressions.

(2) Identify and select an appropriate setting and sample for data collection.

(3) Collect relevant data to identify the attributes of the concept and the contextual basis of the concept.

(4) Analyse data regarding the above characteristics of the concept.

(5) Identify an exemplar of the concept.

(6) Identify implications for further development of the concept.

In the present investigation, the concept of interest is *critique* as an element of HIB research (step 1). The data collection is described above (step 2). As to step 3, the terminology proposed by Rodgers (2000) was slightly modified in that the present study prefers the term constituent, not attribute, while examining the characteristics of critique presented in HIB research. At the next phase (step 4), the constituents of such activities were analysed. More precisely, five constituents specified in Figure 1 were examined, that is, the object of critique, the approach of critique and the three levels of critique.

To achieve this, the research material containing altogether 58 items was first read carefully as a whole to obtain an overview. Thereafter, the research material was coded by

the present author by identifying sentences and text paragraphs indicative of the objects of critique and the approach to critique. To strengthen the reliability of the coding, only explicit expressions indicative of the object of critique or approaches to critique were coded. Moreover, the initial coding was refined by repeated reading of the research material. In this regard, the study drew on Miles and Huberman (1994, p. 65). They proposed that check-coding the same data is very useful for the lone researcher and that code–recode consistencies should be at least 90%. Following this advice, the coding was refined until it was found that the codes appropriately describe the data and that there are no anomalies.

In the coding, particular attention was directed to text portions in which the critics expressed their discontent with an issue. Five main types of objects of critique were inductively identified from the research material: (1) Neglect or ignorance of a significant issue of HIB research, (2) Paucity of HIB research in a domain, (3) Vague conceptualization of HIB, (4) Too narrow HIB models or concepts and (5) Too general HIB models or concepts. Importantly, an individual study critiquing an issue may focus on one or more objects of critique. For example, Kari (2007) focused on the critique of the vague conceptualizations of information use, while Afzal (2017) concentrated on two objects of critique: the neglect of research offering an exact operationalization of the concept of information need and the vague conceptualizations of the above construct. In the coding, all relevant text portions were equipped by the above codes so that an individual code was used one or more times within an article or book. In the quantitative analysis of the objects of critiques, however, an individual code was used only once per article or book; other instances of the same code were ignored.

The coding was continued by identifying approaches to critique characteristic of the three levels of critique specified in Figure 1. To this end, the attention was directed to the depth at which the critique was presented, that is, whether the critic merely depicted neglected research topics and complained about the lack of prior research (level 1). At this level, a typical approach to critique is an identification of a HIB domain which is lacking research or a complaint about the neglect or insufficiency of research. For example, Fourie and Julien (2014) identified gap in research on the nature of affective factors in information seeking. Critiques presented at the level 2 focus on the shortcomings of existing studies. Two main approaches to critique characteristic of this level were identified: fault-finding and identifying and analysing the weaknesses of a study. For example, shortcomings of this kind deal with vague definitions of concepts such as information need (Wilson, 1981) and information experience (Savolainen, 2020) or the narrow applicability of a model for information seeking (Burnett and Jaeger, 2008). Finally, critical notions presented at level 3 offer a constructive alterative to enhance a HIB model or concept. Therefore, the approach to critique characteristic of this level is the identification and analysis of the weaknesses of a study, accompanied by a proposal for an alternative approach. For example, after having critiqued the limited applicability of a model for everyday life information seeking (Savolainen, 1995), the critic suggests how the scope of the model can be extended so that it more adequately depicts the ways in which people seek information in daily contexts (Ocepek, 2018a, b).

The coded material was analysed both quantitatively and qualitatively. First, to get an indicative quantitative picture of the objects of critique, the distribution of the codes assigned to five types of objects of critique was calculated by means of descriptive statistics. The analysis was continued by qualitatively comparing the characterizations of the objects of critiques and approaches to critique at levels 1–3. Then, exemplars depicting information seeking were identified regarding the three levels of critique characterized above (step 5). For example, at the level of critiquing constructively to enhance research approaches, Niedzwiedska's (2003) proposal to elaborate Wilson's (1997) general model for information behaviour served as an exemplar. Finally, implications for further analysis of

the concept of critique were identified (step 6); these implications will be reflected in the concluding section.

Findings

Objects of critique: a quantitative overview

To put the qualitative findings in a broader context, an indicative quantitative picture of the objects of critique is presented in Table 1, based on the distribution of 114 codes assigned to such objects in the sample of 58 studies.

Table 1 indicates that the critics most frequently expressed their discontent by asserting that prior studies have ignored or neglected an important research issue. Almost equally frequent were critiques addressed towards models or concepts that were assessed as too narrow to adequately capture the phenomena of HIB. Quite often, the critics also identified HIB issues plagued by the paucity of research, as well as directed attention to the vague conceptualizations of HIB phenomena. Finally, quite seldom, HIB models or concepts deemed too general were taken as an object of critique.

All in all, the quantitative findings suggest that the critical notions are most often presented at the lowest level of critique because altogether 50.8% of the codes assigned to the objects of critique deal with the neglect or paucity of research. The rest of the codes were assigned to objects that are characteristic of more sophisticated critiques presented at levels 2 and 3, that is, critiquing the shortcomings of existing studies and critiquing constructively to enhance research approaches. Of objects of this kind, the critical notions for the HIB models and concepts deemed too narrow are particularly important, similar to criticisms directed to vague conceptualizations of HIB phenomena. To elaborate the quantitative picture, the characteristics of critique are reviewed qualitatively in the following sections by proceedings from level 1 to level 3.

Critiquing the lack of research

In HIB research, the critical notions are often presented in contexts in which the critic asserts that earlier investigations have neglected a significant research issue. The object of critique is a gap in research and the way of critique is commonly the description of the content of such gaps. Afzal (2017) offers a typical example of critique of this kind by contending that there is "an apparent lack of conceptualisation and operationalization of constructs relevant to human information behaviour, including the construct of information need". In a similar fashion, Bronstein (2017, p. 935) asserted that "despite the central role that information plays in integrating immigrants into a new society . . . very limited empirical research exists that examines their information behaviours, needs, and practices".

The above examples are characteristic of the critique of this kind in that the critical notions deal with the relative lack of research in a domain. The analysis of the research material revealed no cases in which the critic identified a unique topic which has totally been neglected in prior HIB research. The gap in research is rather due to the fact that earlier studies have only indirectly or marginally dealt with the neglected topic because the main emphasis is placed on other phenomena. Cox et al. (2017) study exemplifies well the critique of

Neglect or ignorance of a significant research issue of HIB	28.9
Too narrow HIB models or concepts	26.3
Paucity of research in a HIB domain	21.9
Vague conceptualization of HIB	18.4
Too general HIB models or concepts	4.4
Total	99.9 (due to rounding)

Table 1.
The percentage distribution of codes assigned to objects of critique ($n = 114$)

the relative lack of research. They complained the paucity of studies examining the features of embodied experience in HIB. The critics first emphasized the "centrality of embodied experience to all aspects of human life" and then pointed out that "the relative neglect of the body in information behaviour studies is surprising and potentially problematic" (Cox *et al.*, 2017, pp. 386–387). To support their view, they asserted that in the major models of information, there is "virtually no mention of the embodied, though there are some hints" (Cox *et al.*, 2017, pp. 388). For example, studies of information grounds tend to focus on "people talking to each other and how the character of interaction is shaped by various conditions" (Cox *et al.*, 2017, p. 388). Surprisingly, however, "the information grounds idea does not attend to the physical realities such as proximity of the participants, their facial expression and gestures, and other practical matters such as being within earshot of another" (Cox *et al.*, 2017, p. 388). The critics concluded that "in a number of major theories and studies of serious leisure, while the body does not pass completely unnoticed, its role in information activities is never seen as central or fully theorized" (Cox *et al.*, 2017, p. 390). Interestingly, their conclusion indicates that the critique can be deepened to the next level even within the same sentence by indicating shortcomings of existing studies, for example, the failure to conceptualize a phenomenon in sufficient detail.

Other researchers have continued the list of neglected research topics such as affective aspects of HIB (Fourie and Julien, 2014), information use (Kari, 2007), information creation (Gorichanaz, 2019) and the concept of "everyday" in studies on everyday information behaviour (Ocepek, 2018a). As most research topics tend to be inexhaustible and there is always too little research on them, it is likely that the above list is endless, and that critique presented at this level will prevail in HIB research also in the future. Although critiques of this kind often appear in the form of complaining about the ignorance or neglect of a research topic, they can incorporate arguments by which the critics demonstrate why neglected issues such as information creation are worth further study (Gorichanaz, 2019). For a researcher, the critique of the lack or paucity of prior studies provides an opportunity to justify the choice of the research topic; his or her study at hand is badly needed because it will bridge a significant gap in research. For example, Afzal (2017) used this strategy. He first asserted that the gap in in-depth studies of information need can only be filled by conducting a detailed conceptual analysis of this construct. Thereafter, as a remedy, he proposed a methodology for the conceptualization, operationalization and empirical validation of the concept of information need.

Critiquing the shortcomings of existing studies
Critical notions for the shortcomings of existing investigations go deeper in that they reveal significant weakness in the conceptualizations of HIB research. Typically, the object of critique is a vague concept or a model that is too narrow or general for the needs of empirical research. The ways in which the critique is presented varies widely, ranging from fault-finding to the specification of the weakness of individual constructs.

Since the 1960s, there are numerous studies incorporating critique of this kind (Case and Given, 2016, pp. 351–359). Early critiques of HIB research were presented in the volumes of the Annual Review of Information Science and Technology (ARIST), more specifically, in the chapters reviewing the studies on information needs and uses. Many of these critiques concentrated on the methodological flaws of user studies, for example, their insufficient reliability and validity (e.g. Menzel, 1966). Paisley (1968) was among the first researchers devoting critical attention to the poor conceptualizations of user studies. In his view, they fail to take into account "the full array of information sources that are available; the uses to which information will be put; the background, motivation, professional orientation and other individual characteristics of the user; the social, political, economic and other systems that powerfully affect the use and his work; the consequences of information–for example, productivity" (Paisley, 1968, p. 2). The critique directed to poorly designed research settings

was particularly characteristic of the early ARIST articles. Later on, the role of fault-finding became less significant because the critiques of this kind became more analytic and the main attention was directed to the specification of the weaknesses.

Many of the critiques of the shortcomings of existing studies deal with insufficient and unclear definitions of the key concepts of HIB, most notably information need and information use. Kari's (2007) study on the conceptualization of information use offers a typical example. He asserted that information use is often defined vaguely, or not defined at all; therefore, it is no wonder that there has been a lot of confusion in the literature about the meaning of this concept. To support his argument, Kari cited the definition proposed by Bouazza (1989, p. 146): "information use is that seeking behaviour that leads to the use of information in order to meet an individual's needs". According to Kari, the main weakness of the above definition is that information use is purportedly approached in terms of two stages of the same process, but the latter stage is not even defined. Another object of critique was the definition of information use proposed by Hughes (2006). She suggested that information use covers information seeking, information skills, utilization of information, information literacy, information needs context and learning outcomes, as well as transcending information behaviour. In Kari's (2007) view, this approach "breaks all boundaries ... without proper justification, such an impressionistic notion really plumbs new depths and does a great disservice to the concept of information use".

The above examples suggest that the critique can be devastating if the attention is merely directed to the obscurity of individual definitions. Similar criticisms may also appear when researchers introduce novel constructs to HIB research. For example, Fourie and Julien (2014) critiqued that the terms "affect" and "emotion" are often used interchangeably and typically left undefined. Researchers tend to opt for an intuitive, or an "yknow" interpretation of such concepts by characterizing them in a "cursory manner with ad hoc connotations" (Yu, 2012, p. 2). More recently, Savolainen (2020, p. 673) assessed critically the use of the novel concept of "information experience". He contended that researchers examining such experiences have seldom reflected the nature of the second part of the compound word, that is, experience; it tends to be taken as a black-boxed or self-explanatory concept.

The critiques directed to the shortcomings of studies have sometimes been extended to deal with the consequences of such weaknesses. For example, Savolainen (2020, p. 673) concluded that the unreflective use of the concept of information experience tends to reduce its discriminatory power and result in a vague understanding of the phenomenon which is being studied. The question of the consequences of the shortcomings also arises in contexts in which terminology originally developed outside the domain of HIB research is applied in empirical research. Perhaps the best example of critical notions of this kind can be found in Davenport's (2010) study. In her view, the application of the sense-making methodology (SMM) developed by Dervin (1999) is not without problems because some of its terms such as "verbing" are idiosyncratic in nature and they exemplify "linguistic sleights of hand" (Davenport, 2010, p. 551). Similarly, Savolainen (2006, p. 1,124) observed that the use of idiosyncratic SMM lexicon may result in "translation problems between the vocabularies of sense making and other approaches". Thus, the findings of SMM studies can be reliably compared only with themselves and not with mainstream HIB research.

Researchers have also critiqued the shortcomings of individual HIB models. Many of the critical notions deal with the abstract features of such frameworks. For example, Ingwersen and Järvelin (2005, p. 62) hold that Dervin's (1983) sense-making metaphor of situations, gaps and uses "does not say much about information seeking in various contexts and does not suggest testable hypotheses". This problem is rendered more difficult if the model is both abstract and excessively complex. Similarly, Godbold's (2006) general model for information behaviour has been critiqued because the model attempts to merge together various aspects of the frameworks proposed by Dervin, Wilson, Ellis and Kuhlthau, resulting

in a "quite complicated figures that are hard to translate into a study design or even into an explanation of how and why people behave as they do" (Case and Given, 2016, p. 173).

On the other hand, HIB models and theories have been critiqued for their simplicity and narrow applicability. Burnett and Jaeger (2008, 2011, p. 164) identified a number of shortcomings in the small world theories proposed by Chatman (1999, 2000). The main weakness of her theories is that they do not adequately consider the interactions between small worlds and the broader society within which they exist, nor do they account for interactions across and between multiple small worlds. More recently, Case and Given (2016, p. 150) drew critical attention to the limitations of Krikelas's (1983) model for information seeking, because it just exhibits "one-dimensional flowchart in which all of the arrows travel in one direction, i.e. there are no two-way influences among the boxes and no one part of the process encompasses another". In this case, as Case and Given (2016, p. 150) put it, the model's "simplicity implies oversimplification". Sometimes, the critical notions for the limitations of a study appear in the form of self-criticism. For example, Liu (2017, p. 683) reflected critically the limitations of his unifying model for human information behaviour, based on equilibrium analysis. He cautioned that the framework of equilibrium analysis may not be able to incorporate detailed facets of problematic situations, resources and social environments which contextualize individuals' information practices. Moreover, as Liu's model is constructed basically from an individual's perspective, it does not take into account the fact that information seeking is often a social process.

Finally, the shortcomings of HIB models have been critiqued by drawing on novel empirical evidence which contradicts with the assumptions of a framework. In a study on collaborative information behaviour among students Hyldegård (2006, p. 294) demonstrated that contrary to the assumptions of Kuhlthau's (2004) Information Search Process (ISP) model, negative feelings were not replaced by positive feelings such as clarity during the information-seeking process. This finding suggests that the ISP model works best as a framework depicting information seeking among solitary actors, but the model is less applicable if information seekers act as members of a collaborative group. Savolainen (2015) addressed more explicit critique to the ISP model while examining how it conceptualizes the construct of uncertainty. The ISP model draws on a traditional view on the nature of uncertainty in that the focus is placed on the negative (undesirable) uncertainty causing anxiety among users. However, recent studies have shown that there can be a positive impact from uncertainty as well (e.g. Chowdhury et al., 2014). Positive (and arguably desirable) uncertainty may influence the information-seeking process because the individual is motivated by eager anticipation to find new or related sources of information.

Critiquing constructively to enhance research approaches
Constructive critique is not merely confined to the identification of flaws in prior studies but digs deeper by suggesting alternative approaches about how to avoid similar weaknesses and how to enhance the research approach. Again, the objects of critiques vary considerably, ranging from individual concepts to diverse models for HIB. Similarly, the approaches to critique vary regarding the depth by which the critic first analyses the flaws of a study and then presents the constructive alternative.

Examples of constructive critique can be found since the 1960s. Paisley (1968) – after first having identified numerous shortcomings in studies on information needs and uses – proposed a research framework which enables a more systematic investigation of individual, social and cultural factors affecting information seeking among scientists and engineers in particular. In early HIB research, one of the most radical constructive critiques was presented in Wilson's (1981) study. He objected the shallow characterizations of the

concept of information need – a factor commonly used to explain why people engage in information seeking. Wilson (1981, pp. 5–6) asserted that the association of the terms "information" and "need" causes confusion; "this association imbues the resulting concept with connotations of a basic 'need' qualitatively similar to other basic 'human needs". To avoid this problem, Wilson (1981, p. 8) advised to "to remove the term information needs from our professional vocabulary and to speak instead of information-seeking towards the satisfaction of needs". Wilson's alternative approach draws on the identification of human needs of three types: (1) physiological needs, such as the need for food, water and shelter, (2) affective needs, such as the need for attainment or for domination and (3) cognitive needs, such as the need to plan and need to learn a skill. The novel approach would not only enable the avoiding of the vague term "information need" but also offer a firmer (psychological) basis to examine how the satisfaction of human needs may incorporate attempts to seek information.

According to Ellis (2011, pp. 21–22), Wilson's (1981) critique was influential in that it "more or less demolished the concept of information need as a valid starting ground or basis for explanations of information behaviour". On the other hand, this effect seems to have remained temporary only. Wilson's constructive critique did not result in the removal of the concept of information need from the vocabulary of HIB research; on the other hand, the alternative view advocated by Wilson got no wider support among HIB researchers. As before, the term of information need was used in the ARIST chapters on "information needs and uses" (e.g. Dervin and Nilan, 1986). In fact, Wilson himself returned to the use of the term information need in his later studies and employed the above term in the general model for information behaviour (Wilson, 1997). This suggests that critiques – despite their constructive intent – may not resonate in the research community if the alternative approach is not regarded as a remarkably better way to conceptualize an aspect of HIB.

One of the most detailed constructive critiques directed to HIB models is presented by Niedzwiedzka (2003). Based on detailed conceptual analysis, she evaluated Wilson's (1997) general model for information behaviour by presenting critical remarks on the content and graphical presentation of his framework. The critique was motivated by the practical need to categorize factors and mechanisms that ought to be taken into consideration while investigating the information behaviour among managers. The critique was directed to three main issues indicative of the shortcomings of Wilson's model. First, Niedzwiedzka (2003) asserted that Wilson's model does not clearly differentiate the phase of the occurrence of information need from the phase when a decision to seek information is undertaken. This notion is important because not every need for information experienced by the individual leads to information seeking. Second, Wilson's diagram separates the component of "context" from the intervening variables, which influence information behaviour. However, this is not logical because the intervening variables themselves form a context of information behaviour. Moreover, Wilson's diagram suggests that the intervening variables influence the user only at the stage of information acquisition, while such variables may also influence when an information need is experienced, and information is processed and used. Third, Wilson (1997) treated the features of information source as a separate class of variables, while the source is an element of information environment (context); thus, information sources can be included in a general class of environmental variables.

The constructive elements of the critique are based on the assumption that Wilson's diagram can be elaborated so that it illustrates better the nature of contextual factors and takes into account the features of information seeking characteristic of managers. Niedzwiedzka (2003) argued that especially top-level managers tend to obtain a considerable part of work-related information through intermediaries such as secretaries. To finalize her critique, Niedzwiedzka (2003) created a new version of Wilson's diagram by

adding novel components depicting the role of the intermediaries. Moreover, Wilson's diagram was restructured by placing the intervening variables as components of the context of information behaviour. Finally, in the modified version, a phase of the need occurrence was separated from a phase of making a decision to seek information, thus suggesting that also at this stage the activating mechanisms can play a significant role.

Niedzwiedzka's (2003) study offers a rare example of attempts to enhance existing HIB models by means of constructive critique, rather than proposing still another new framework to depict information seeking among a particular group of people. However, similar to Wilson's (1981) critique of information need, the framework being criticized, i.e. Wilson's (1997) model retained its central position in HIB research, while the modified version proposed by Niedzwiedzka (2003) is referred to relatively seldom. According to Google Scholar (23 November 2020), her study has been cited 201 times since 2004, as compared to 1,395 references to Wilson's (1997) article within the period of 2004–2020. The above scores are not directly comparable because Wilson's (1997) article reviews a number of other HIB models, too. On the other hand, as Wilson has also presented his model in other articles (e.g. Wilson, 1999), the total number of studies referring to his framework is even higher than the above score.

In addition to individual models, constructive critique can be directed more broadly to HIB research conducted in a particular domain. Ocepek (2018a) urged recently that research on everyday information behaviour (EIB) should be strengthened by reflecting more deeply the nature of everyday phenomena. A more elaborate approach is needed because major theoretical works in EIB such the theory of life in the round (Chatman, 1999) and the model for everyday life information seeking (ELIS) (Savolainen, 1995) are limited in that they focus on the context immediately surrounding an individual's information behaviours. Therefore, they fail to articulate the rationale for exploring the everyday or how it relates to information behaviours in other contexts.

Ocepek's (2018a, pp. 399–400) constructive alternative is based on the assumption that everyday is more than simply non-work contexts. To support her argument, Ocepek (2018b) draws on the ideas of Lefebvre (2008) in particular. Lefebvre (2008, p. 31) characterizes the everyday as the nexus of work, leisure and family life, approaching them in "their unity and their totality". Therefore, EIB research should focus on the banal and quotidian parts of life along with the more traditional EIB domains, such as serious leisure. By studying how individuals use information in the quotidian parts of life, an everyday-focused EIB could gain deeper insights into how all people interact with information in diverse mundane domains such as the grocery store because of the similarities in the ways in which individuals typically approach these domains. The broader perspective would also open possibilities to renew EIB research by removing artificial borders between work and non-work contexts. The novel approach is justified further by taking concrete examples from Ocepek's (2018b) empirical observations about how people make use of sensory-based information sources in the quotidian task of grocery shopping. Her study indicated that sensory-based information about products obtained through sight, taste, touch and smell exemplifies a new type of information source which can be examined in relation to information seeking, encountering, sharing and browsing.

In a similar critical spirit, Dalmer (2019) urged that the construct of ELIS proposed by Savolainen (1995) needs to be re-evaluated while examining the issues of health-related information seeking, for example. This is because Savolainen's approach "dichotomises work from everyday life and excludes the workful character of finding, using, or managing health information in people's everyday life" (Dalmer, 2019, pp. 715–716). Thus, there is a danger that studying individuals' everyday health information practices in non-work contexts forces a false dichotomy between work and non-work and removes some contextual cues and richness in fully understanding people's everyday health information practices. As a remedy,

Dalmer (2019, p. 716) proposed that health information practice-based ELIS studies investigate participants' work (paid) contexts "not only to examine the skills, habits, and resources that arise from paid work environments, but also for the organisational constraints and coordination that work contexts establish and impose on people's experiences of their everyday health information practices".

Interestingly, constructive proposals such as these may be questioned by counter-arguments, thus suggesting that presenting an alternative viewpoint is not necessarily the final world in a debate about how to interpret HIB concepts and models. Taking the ELIS model as an example, Dalmer's (2019, pp. 715–716) key argument that the above model forces "a false dichotomy between work and non-work" may be contested by checking how the above issue was approached in Savolainen's (1995) study. Contrary to Dalmer's interpretation, Savolainen emphasized that "the concept of ELIS should not be interpreted as an attempt to create a false dichotomy between processes of job-related and 'other' information seeking because job-related information seeking and ELIS complement each other" (Savolainen, 1995, p. 266). Later empirical studies have supported Savolainen's view on this issue (e.g. Dankasa, 2016). Drawing on an investigation of ELIS among university students Given (2002, p. 28) demonstrated that for all of these students, everyday experiences also provided information solutions for academic work. Similarly, the academic context initiated new ELIS needs (e.g. child-care) that they would otherwise not have held. Their experiences reinforced Savolainen's (1995) call to avoid the "false dichotomy" between the everyday and other life contexts in favour of an examination of the complexities of individuals' information-seeking behaviours. All in all, the above examples suggest that in order to build an alternative approach on a firm basis, the object of critique should be depicted correctly because otherwise the constructive elements of the critique may lose their potential to renew HIB research.

Discussion

The present study contributed to HIB research by examining the nature of critique addressed to the concepts and models developed in the above domain. To achieve this, research question 1 focused on the main objects of critique, while research question 2 examined the quantitative share of diverse objects of critique. Finally research questions 3 dealt with the ways in which the critique is conducted. The objects and approaches were then examined at three levels of depth. As the emphasis of the present study was placed on the qualitative analysis, the answers to research questions 1 and 3 are summarized in Table 2.

Table 2 suggests that at the lowest level of depth, critiques are directed to the lack of research by identifying gaps and complaining the neglect or paucity of studies in a domain. The quantitative findings presented in Table 1 suggest that critique of this kind is quite common in HIB research. Critical notions such as these typically appear in the introductory section of a study where the researcher justifies the choice of the research topic by asserting it has been neglected in earlier studies. However, merely critiquing gaps in prior studies tends to offer a weak or sometimes even trivial justification for the choice research topic because there are always issues that have been insufficiently researched so far. The qualitative findings indicate that the objects of critique at this level of depth vary widely, depending on the topic of the study at hand. However, many of the critiques of this kind deal with the lack of in-depth studies on information need and information use in particular. The dearth of investigations on these topics suggest is probably due to that researchers avoid them because information need and information use are notoriously complex phenomena and thus hard to conceptualize and operationalize. The findings also indicate that critique of this kind is addressed to the relative lack of research; there may be a few prior investigations but they are only indirectly relevant for the research topic. Characteristic of critique of this kind, the

critical notions are presented in a descriptive way by depicting the gaps identified by the critic. Typically, researchers do not speculate further about why a gap exists in prior HIB investigations. However, such reflections can be found in critical studies on metatheoretical issues. For example, Frohmann (2004) and Olsson (2006) asserted that certain research topics are neglected, due to the dominating position of the cognitive viewpoint in particular.

Critiques of the shortcomings of existing studies dig deeper in that they analyse the flaws of an individual investigation. At this level, too, the objects of critique vary widely, ranging from vague concepts to overly abstract or narrow models for HIB. Critiques of this kind appeared to be fairly common since the 1960s. Early critiques were often confined to the fault-finding, that is, merely identifying flaws in the conceptualizations of HIB phenomena or demonstrating that the research approaches are narrow or biased in some way. Later on, analytic approaches became more common, as the critics explained in more detail why a construct or model is inadequate. Similar to the critique of the lack of research, many of the critical notions revealing weaknesses in existing research focus on the conceptualizations of "difficult" issues such as information need and information use.

Finally, the constructive critiques of research approaches represent the most sophisticated form of the critical evaluations. In this case, too, the objects of critique vary a lot, but many of the most detailed critiques are addressed to the conceptualizations of information need and the limitations of individual HIB models. Different from the critiques discussed above, constructive critiques offer remedies by which the shortcomings of the conceptualizations and models can be avoided. Most importantly, constructive critiques suggest an alternative viewpoint to the object being criticized. On the other hand, constructive critique may represent the most radical form of criticism because the critic suggests that an existing construct or model should be elaborated by adding new components or restructuring them in a novel way. Therefore, constructive critiques often incorporate normative elements because the critic advocates that the novel approach proposed by the scholar should be adopted in order to renew a research approach, as perhaps best exemplified by Dalmer's (2019) study.

All in all, supporting the view of Werneck and Loretti (2018), the findings suggest that independent of the level of depth, critiques are based on the discourse of discontent. Discontent is expressed when the critic identifies a gap in research, finds ambiguity in a concept or doubts that a model is too narrow to capture the richness of HIB phenomena.

Level of critique	Object of critique (RQ1)	Approach to critique (RQ3)	Illustrative examples of studies
1. Critiquing the lack of research	Neglect or ignorance of a significant research issue Paucity of research in a domain	Identifying and depicting areas lacking research Complaining about the neglect or insufficiency of research	Afzal (2017) Bronstein (2017) Gorichanaz (2019) Ocepek (2018a)
2. Critiquing the shortcomings of existing studies	Vague concepts Too general or narrow HIB models and theories	Fault-finding Identifying and analysing the weaknesses of a study	Burnett and Jaeger (2011) Kari (2007) Paisley (1968) Savolainen (2020)
3. Critiquing constructively to enhance research approaches	Vague concepts Too general or narrow HIB models, and theories and research approaches	Identifying and analysing the weaknesses of a study plus proposing an alternative approach	Niedzwiedzka (2003) Ocepek (2018a) Paisley (1968) Wilson (1981)

Table 2.
Summary of the research findings

The findings also support the assumption that critique is an integral constituent of HIB research and potentially one of the factors enabling the renewal of the research domain. However, as the studies of Niedzwiedzka (2003) and Wilson (1981) exemplify, even the most constructive critiques may not result in the adoption of a new terminology or a refined model. Nevertheless, it is evident that critiques presented at various levels of depth are useful, independent on whether they appear in the identification of the lack of research on a significant issue, in the demonstration of the shortcomings of existing studies or in the constructive evaluation of a concept or model. The critical notions keep research in motion and motivate scholars to avoid complacency and intellectual laziness.

It is also evident that the critiques presented at diverse levels are not necessarily separate. For example, the critique of the gaps in research may be followed by critical notions about the shortcomings of related research, as exemplified by Cox *et al.* (2017). To begin with, they criticized the paucity of research on the phenomena on embodied experience and then demonstrated that certain studies relevant to this topic have failed to conceptualize the issues of embodied experience in the context of information behaviour. Similarly, a critique directed to the shortcomings of a model is a necessary point of departure for the presentation of a constructive alternative, as exemplified by Niedzwiedzka's (2003) proposal for the elaboration of Wilson's (1997) general model for information behaviour.

Due to the lack of investigations examining the nature of critique presented in the domain of HIB research, the findings cannot be directly compared to prior studies on similar topics. This is mainly because earlier HIB investigations with an explicit critical intent have concentrated on the critique of metatheoretical or methodological issues (e.g. Davenport, 2010; Dervin and Nilan, 1986; Frohmann, 2004; Olsson, 2006). However, a few comparative notions can be made to investigations made in other fields of study, despite the facts that such investigations are heterogeneous regarding their topics and methodological approaches (Frawley, 2015; Rudolph *et al.*, 2020; Savage, 1981). Most importantly, the above studies share a common feature with the present investigation in the objects of critiques deal with the content of research which is interpreted as inadequate in some respect. For example, in studies examining healthy leadership, scholars have criticized the unclear conceptualizations of such leadership (Rudolph *et al.*, 2020), while HIB researchers have critiqued vague definitions of information use. This suggests that flaws identified in the content of research is a necessary point of departure of all scientific critique, independent of the research domain. In philosophy, as well as in human and social sciences and HIB studies in particular, an important precondition for the critique of such a content is the existence of diverse views, constructs and models. As suggested above, critiques addressed to them keep research in motion and able to continually renew itself.

Conclusion
The study offered a unique contribution to HIB research by identifying three levels of depth at which critiques to HIB constructs and models are addressed. However, as the present investigation represents one of the first steps to analyse the nature of critique, additional research is required to elaborate the picture of critical notions presented in HIB research. Quantitative investigations are needed to specify how the objects, approaches and levels of critique are related in this domain. To achieve this, quantitative content analysis and bibliometric methods hold good potential to examine the substantiate features of critiques addressed to HIB research. For example, approaching such critiques in terms of *negative citations* offers a relevant avenue for research (Catalini *et al.*, 2015). Negative citations are indicative of the limitations, inconsistencies or flaws of research and they may question or limit the scope and impact of a contribution or a scholar. One of the topics of further investigations is the ways in which critiques directed to HIB studies have influenced the

research domain and the extent to which such critiques are justified. For example, it is evident Dervin and Nilan's (1986) critical review of the institution-centred studies is one of the most influential contributions resulting in the renewal of HIB research since the 1990s, along with the lines of the user-centred approach (Vakkari, 1997). However, little is known about the influence of critiques presented by scholars such as Wilson (1981), Frohmann (2004) and Hjørland (2011), for example. Further studies on the nature and influence of critiques would also be useful in that they may reveal whether the ways of critiques are more constructive or radical compared to those presented in other fields of study, for example, communication research and sociology.

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