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HOW INSIGHTS FROM THE FIELD OF INFORMATION BEHAVIOR CAN ENRICH UNDERSTANDING OF KNOWLEDGE MOBILIZATION

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ABSTRACT

Design/methodology/approach

We conducted a narrative review using an exploratory, non-keyword 'double-sided systematic snowball' method. This is especially useful in our situation when the two traditions targeted are broad and relies on distinct vocabulary.

Purpose

We review the literature on information behavior, an autonomous body of work developed mainly in library studies, and compare it with work on knowledge mobilization. We aim to explore how information behavior can contribute to understanding knowledge mobilization in healthcare management.

Findings

We find that the two bodies of work have followed similar trajectories and arrived at similar conclusions, with a linear view supplemented first by a social approach and then by a sensitivity to practice. Lessons from the field of information behavior can be used to avoid duplication of effort, repeating the same errors, and reinventing the wheel among knowledge translation scholars. This includes, for example, focusing on sources of information or ignoring the mundane activities in which managers and policymakers are involved.

Originality

The study is the first known attempt to build bridges between the field of information behavior and the study of knowledge mobilization. The study, moreover, foregrounds the need to address knowledge mobilization in context-sensitive and social rather than technical terms, focusing on the mundane work performed by various human and non-human agents.

HOW INSIGHTS FROM THE FIELD OF INFORMATION BEHAVIOR CAN ENRICH UNDERSTANDING OF KNOWLEDGE MOBILIZATION

Introduction

In this paper, we contribute to the literature on knowledge mobilization in healthcare management and administration by establishing connections with the adjacent body of literature on information behavior. Knowledge mobilization refers broadly to the field of studies interested in "the proactive process that involves efforts to transform practice through the circulation of knowledge within and across practice domains" (Swan, Newell and Nicolini, 2016: 2).

The aim of our narrative review is twofold. First, we examine how concepts from the information behavior literature may enrich the understanding of the knowledge mobilization process in healthcare. Information behavior (Case, 2007) is a well-developed corpus of research that is little known in healthcare, especially among healthcare management scholars. By creating bridges between the health service research literature and information behavior, we prevent "rediscover(ing) the wheel in a new empirical or theoretical context" (Abbott, 2006: 64). In so doing, we follow previous authors who showed the benefits of putting different research traditions in conversation (Ferlie, Crilly, Jashapara and Peckham, 2011; Oborn, Barrett and Racko 2013).

Second, we endeavor to learn from comparing the historical developments in the two bodies of literature. The similarities found in the arcs of development of the two autonomous bodies of literature support the idea that much is to be gained in understanding and promoting *managerial* knowledge mobilization as a context-sensitive and social process rather that an effort to "moving around" a substance-like object ("moving knowledge to where it can be most useful" Ward, 2107: 477). This, in turn, requires abandoning the still prevailing view that knowledge is a thing that people 'have' and that can be passed around, substituting it with a

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processual view that relates knowledge to what people do and who they are (Cook and Brown, 1999; Waring et al., 2013). We emphasize the word "managerial", as our paper focuses on healthcare managers, and we remain agnostic on whether our findings apply in full or in part to clinical decision-making.

Advancing the understanding of how knowledge can be mobilized and put 'into active service for the broadest possible common good' (SSHR, 2008) is theoretically and practically important. Scholarly debates on the nature of knowledge and its mobilization underpin different, and at times contrasting, views on the applicability of the evidence-based approach to management and policy practice in healthcare (Bogdan-Lovis and Sousa, 2006; Ferlie, McGivern and Fitzgerald, 2012; Fitzgerald and Harvey, 2015). The debate also maps unto different ways policy decision-makers view the process whereby knowledge is produced, circulated, and appropriated (or "used", depending on where you stand). This, in turn, directs to alternative ways of supporting the process and taking action, as demonstrated in the case of the Covid-19 pandemic (Capano et al, 2020; Yang, 2020).

The paper is organized as follows. We start by examining the main concepts and arc of development of the field of information behavior. We then offer a brief recap of the literature on knowledge mobilization. We find that while the two bodies of literature developed independently, their development followed similar trajectories, with a linear view supplemented first by a social approach and subsequently by a sensitivity to practice. In the discussion section, we examine the theoretical and practical implications of these findings. First, however, we outline the methodology used in our investigation.

Methodology and literature selection

We conducted a *narrative review* using the exploratory, non-keyword 'double-sided snowball' method, which is especially useful in situations when 'the traditions targeted are broad[er] and

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each relies on distinct vocabulary and conceptualizations' (Contandriopoulos, Lemire, Denis and Tremblay, 2010). This fitted our aim of producing insights by comparing scholarly conversations on knowledge mobilization and information behavior.

We started the review process by identifying key conceptual contributions in each field. Given our interest in healthcare management and administration in the field of knowledge mobilization, we limited our focus to studies and concepts explicitly discussed in relation to managerial work (Crilly, Jashapara and Ferlie, 2010) or immediately relevant to managers (e.g., mindlines: Gabbay and Le May, 2011). Consequently, we excluded most of the vast corpus of research focusing specifically on the supply and take-up of clinical evidence by frontline clinical staff (Davidoff, Haynes , Sackett and Smith, 1995; Estabrooks, Thompson, Lovely and Hofmeyer, 2006; Greenhalgh et Al., 2004; Mitton and Adair, 2007; Sackett et al. 1996; Tetroe et al., 2008; Walshe and Rundall, 2001)

Similarly, we limited our exploration of the evidence-based management literature (Briner, Denyer and Rousseau, 2009; Crilly, Jashapara and Ferlie, 2010; Rousseau, 2006) in which few studies address how healthcare managers, in particular, integrate individual expertise and evidence from management research. To trigger a snowball in the field of information behavior, we built on highly cited reviews (Ferlie, Crilly, Jashapara and Peckham, 2011; Fisher, 2009; Wilson, 1999).

The review proceeded as follows. After establishing key references in each domain, we used the ISI Web of Science Citation Index to map the existing literatures retrospectively (i.e., targeting key references in seminal papers, as well as other references cited in later articles) and prospectively (i.e., targeting papers published after the selected seminal paper). This resulted in 349 papers. Working together, two of the authors selected 102 publications for further analysis based on congruence with our aims and on the number of citations (e.g., excluding those with fewer than five). They then read all the abstracts and worked together

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iteratively to cluster articles according to underlying assumptions, paradigms and adherence to particular intellectual traditions. One author then identified and synthesized key themes from the two literatures. Next, the third researcher, who had not been involved thus far, cross-examined and validated the preliminary analytical results and the emerging narrative pattern (Lemire, Demers-Payette and Jefferson-Falardeau, 2013). The joint analysis revealed similarities, partial overlaps, and differences. Importantly, it also indicated a similar historical arc in the two loosely connected academic domains. In the final phase, we selectively searched for recent publications to shed further light on our conclusions. This continued in the writing stage.

In the next two sections, we introduce this shared historical arc, summarized in Figure 1. We then discuss the implications of this common evolution for the overarching question of how to put knowledge into active service for the broadest possible common good.

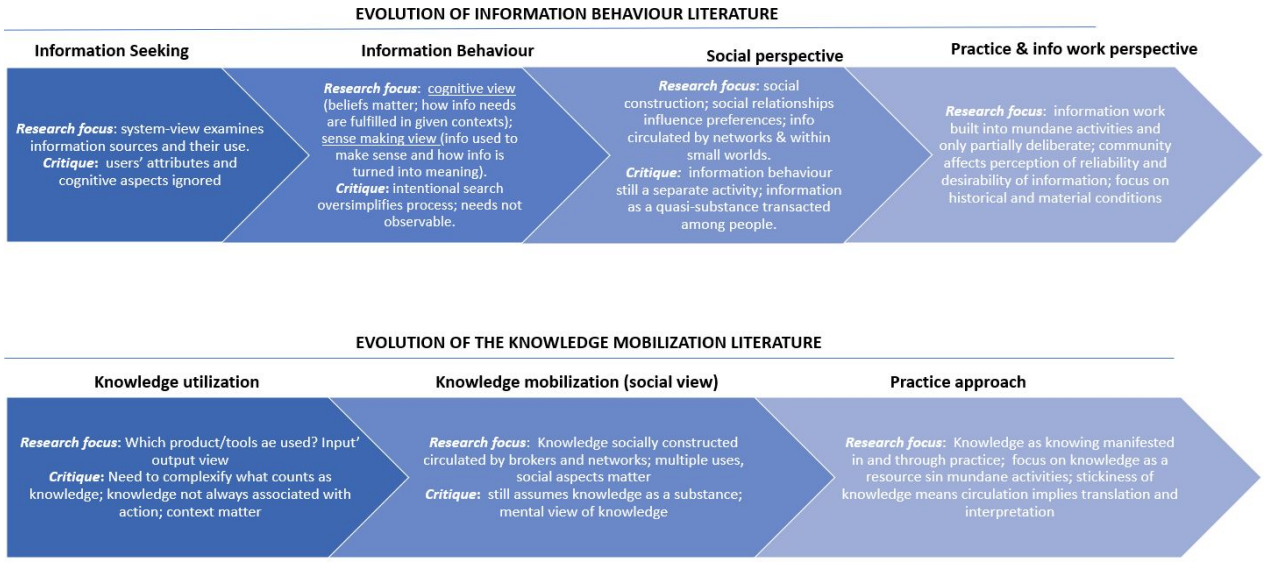

Figure 1. Summary of the evolution of the two literatures

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The arc of development in the literature on information behavior

Information behavior: an overview

The term 'information behavior' refers to how people seek, source, utilize, and, more broadly, interact with information. It is the currently preferred term used to describe the study of the many ways in which human beings interact with information (Bates, 2010: 2074). This area of study emerged at the intersection of library science, information science, social informatics, and management. It has been suggested that 'librarians wanted to understand library users better, government agencies wanted to understand how scientists and engineers used technical information to promote more rapid uptake of new research results, and social scientists generally were interested in the social uses of information in a variety of senses.' (Bates, 2010: 2381). Of interest here is the idea that, like knowledge mobilization, information behavior is motivated by a desire to promote more rapid uptake of new research.

Importantly, information behavior scholars have already highlighted an arc mirroring the shifts also noted in knowledge mobilization (Bates, 2010; Bates 2017; Case, 2007; Fisher, 2009; Pettigrew, Fidel and Bruce, 2001; Savolainen, 2007). Specifically, the system-based approach focused on decision-makers' information sources and the needs and motivations of information users. However, a major shift occurred in the 1990s when attention turned to contextual and social factors. In time, this view made room for the realization that information behavior cannot be treated as a separate activity and should be conceptualized as a type of work that people do as part of their daily activities. Hence, information work should be researched as a form of habitualized practice.

Information seeking: a systems-oriented view

Prior to the 1980s, information behavior research adopted a systems-oriented approach. This focused mainly on identifying which information systems, sources, and artifacts were used to retrieve information by different professionals and how often (Vakkari, 1999). For example, according to Urquhart (1948), the aim of information seeking is to reveal how information is sought, for what purpose, and whether users perceive the information to be relevant. This type of research was fairly common, and library studies often employed surveys to understand aspects of the user experience, such as reading habits, information sourcing, and catalog use. Citation analysis was primarily engaged (satisfaction analysis more rarely). The data took the form mainly of resource lists (i.e., tools or informational resources used most often), rankings, and resource maps, which were used and sponsored by institutional and academic administrators to develop information systems and services. The system view was not abandoned, rather, it was integrated by subsequent approaches and continues to be used. An example is the study of infodemiology, "the [quantitative] study of the determinants and distribution of health information and misinformation" (Eysenbach, 2002: 763), which can be considered as a late application of the system view of relevance for healthcare managers and administrators. Using metrics that capture both the supply and demand side of healthcare information on the internet ("infoveillance"), the approach aims to assist healthcare administrators in improving public health by identifying gaps between available evidence and what people do, monitoring the quality of information, and counteracting the spread of misinformation (Eysenbach, 2020).

From information seeking to information behavior

The systems orientation was critiqued for failing to account for attributes of individual users and, therefore, not considering 'how an individual will apply his or her model or view of the world to the process of needing, seeking, giving and using information' (Pettigrew, Fidel and

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Bruce, 2001). This is visible in the example of infodemiology above. Especially in its early formulation (see Eysenbach, 2020 for a discussion), infodemiology, like other systems-oriented views, while useful for some purposes, tended to pay insufficient attention to why people search for health information, and how the social milieux affects how information is interpreted and put to work.

The criticisms towards the systems orientation triggered a shift toward a more person-centred study of information seeking and introduced a strong cognitive focus into the research. Studies started to explore information users' cognitive states and individual characteristics (Belkin, 1990; Dervin, 1998; Wilson, 1981). Scholarly interest moved from the systems used to retrieve information to individuals' knowledge, beliefs, and their interactions with information – in other words, from externally observable environmental conditions to internal cognitive and affective processes (Belkin, 1990). For this purpose, researchers turned to understand 'the phenomena and situations of relevance in terms of representations (usually mental) of knowledge, intentions, beliefs, texts and so on' (Belkin, 1990: 12). The cognitive approach relies on three key concepts: individual needs and motivations, personal knowledge structures, and actions (Case, 2007). Information seeking begins with a perceived need or motivation arising from some imbalance in knowledge structures, for example managerial knowledge among medical staff or medical knowledge among managerial staff may prompt information seeking across professional boundaries. Information behavior fulfills this need, which is perceived either cognitively or affectively, through strategies that combine contextual factors and individual preferences. Hence, the narrow focus on information seeking shifts to the overall behaviors used by individuals to fulfill their informational needs, which may or may not be successful (Wilson, 1981).

Specifically, the literature suggests that fulfilling information needs proceeds through a number of stages. First, the need becomes conscious and rationalized. Second, the individual

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must decide to take action. Finally, because individual actions occur amid contextual conditions that enable and constrain options, individuals must make choices and evaluate the ratio between effort and expected benefits. Keeping informed is therefore, a compromise between individual information needs and contextual opportunities. This implies that the process may be concluded when an individual is satisfied rather than when the information seeking itself is complete (i.e., all needs are met, or all possible information is found: Prabha, Connaway, Olszewski and Jenkins, 2007).

Over time, authors extended this view by embracing non-calculative motivations to explain why people search for information, including emotional and sense-making motivations. In this view, information behavior is motivated not only by thoughts and actions but also by feelings and emotions (Kuhlthau, 1994). These include feelings of curiosity or uncertainty associated with the need to search for information. As the process continues, individuals may experience further emotions, ranging from doubt and frustration at the beginning of the search, to confidence, relief, and satisfaction if the information is retrieved successfully (Wilson, 1998).

Dervin (1983) extended the range of motivating factors that trigger information behavior, positing that information behavior is triggered primarily by a need for sense making, rather than only motivational and cognitive needs. Here, sense making is conceived as a situation featuring information problems (i.e., a gap between what is and what is desired), an outcome (i.e., the consequences of the sense-making process), and a bridge (i.e., the means of reaching the outcome: Wilson, 1999). Information behavior scholars thus aim to explore how people encounter problematic situations and try to make sense of them through questioning and seeking answers from various sources. This, in turn, calls for an appreciation of the situational conditions in which actors deal with information and turn it into meaning.

The shift from resources to motivations and sense making allowed scholars to move from descriptive studies, as in the system-oriented approach, toward explanatory models of why

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people search for information. The evolving assumption is that a better understanding of the motivating factors may help design more effective information systems customized to users' needs. However, the cognitive view also raises empirical and theoretical concerns. First, needs and motivations are not observable, only inferable. Second, this view does not account for unintentional information. In other words, this approach discounts the possibility that information behavior may go beyond just seeking. Third, the activation mechanisms that link a need with acting on that need (e.g., self-efficacy or risk/reward) remain opaque.

The social perspective on information behavior

At the turn of the millennium, authors began to claim that information should be understood as a 'human artifact, constructed and reconstructed within social situations', rather than as an 'objective independent entity' in the 'real world' (Cornelius, 2002). This required scholarly attention to shift to interpersonal relationships and contextual social conditions as 'carriers of meaning' (Pettigrew, Fidel and Bruce, 2001). In short, contexts influence how individuals deal with information. In particular, scholars argued that contexts influence preferences and choices in relation to information behavior; they affect the transmission and movement of information; and they play a critical role in how it is analyzed or interpreted. To operationalize the idea of context, information behavior scholars turned to symbolic interactionism and the work of Anselm Strauss (1978). For example, Chatman (1991; 1999), conceptualized contexts as 'small worlds', which individuals inhabit and which influence information behavior in terms of how information is organized, used, and communicated. Small worlds are the situated contexts and communities in which people's everyday routine activities occur (Burnett, Besant and Chatman, 2001). Information behavior in small worlds is thus oriented toward norms and shared beliefs recognizable by community members. Hence, from this perspective, to understand information behavior it is necessary to examine the context in which it takes place.

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This perspective also implies seeing information behavior as a range of social activities, 'from the informal exchange of information among friends to the posting of fliers to the active avoidance of information that is for some reason deemed inappropriate or dangerous' (Burnett and Jaeger, 2008). It is viewed as a social activity, something that people do with and through others. For example, according to Anderson, an 'actor's network of social ties creates opportunities for social capital transactions, but the mere fact of a tie implies little about the likelihood that social capital effects will materialize Anderson, 2008). Thus, scholars should examine network ties, as well as personality traits and information behavior characteristics (time, diversity, and amount of information), and how these factors are correlated. From this perspective, information behavior is also a dialogical accomplishment that can be understood in the context of a specific discursive activity (Tuominen and Savolainen, 1999). To understand how people deal with information, we cannot study actors in isolation. In summary, the shift from information seeking to information behavior affords increased emphasis to the role of context and interactions, marking a move toward a social, collaborative and interactional view of information activities (Lloyd and Olsson, 2019).

From information behavior to information *practices and information work*

As the socialized view of information behavior developed, it was also subject to critique. Specifically, scholars have stressed that it still depicts information behavior as a separate activity and sees information as a quasi-substance transacted among people. Moreover, foregrounding verbal interaction and discursive means largely overlook the material nature of the information. To distance themselves from this view, scholars from the practice perspective have emphasized that information practices are always embedded in broader work or life practices (Savolainen, 1995). Therefore, from the latter perspective, information behavior is seen as one of the 'dimensions of social practices' that inform and are informed by individuals'

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participation in the social world (Talja and Hansen, 2006). Information practices are a ubiquitous type of work 'part of the routine accomplishment of work tasks and everyday life' (ibid: 114). This has several important consequences.

First, to understand how people stay informed, we must expand our attention to the information practices that people live by (Tuominen, Savolainen and Talja, 2005). In this sense, the approach resonates closely with work in management studies and especially by Mintzberg (2009), who, without referring to the field of information behavior, also emphasized that information work is a defining characteristic of management and that to understand how managers deal with key information conundrums we need to observe their work in situ and in real-time.

A good example of the benefits of studying information in terms of daily practices is the idea of 'information grounds', defined as social settings where information is shared while attending to everyday activities (Pettigrew, 1999). Familiar information grounds include train carriages and doctors' waiting rooms. These social situations act as 'environment(s) temporarily created when people come together for a singular purpose but from whose behavior emerges a social atmosphere that fosters the spontaneous and serendipitous sharing of information' (1999: 811). For example, a serendipitous elevator conversation can provide information about a steering group meeting. The concept of information grounds enables us to conceive of becoming informed as emerging from ordinary practices rather than a separate, isolated activity

Second, the practice perspective invites us to revisit the idea that information seeking is only intentional. For example, McKenzie states that the word 'seeking' misrepresents the practice it purports to describe because it does not account for the unintentional gathering of information along with the active 'seeking' (McKenzie, 2002). Information gathering can occur through serendipitous encounters, browsing or being given information, and active seeking (McKenzie,

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2002). Therefore, information practices should range from more to less intentional (Erdelez, 1999; Hektor, 2001). Relatedly, this allows us to distinguish between pragmatic and orienting information work. Pragmatic information work is used to answer a specific problem and involves active and practical information seeking, whereas orienting information work enables us to make sense of the world and keep abreast of current events. The two co-exist but are very different in nature. The former is fundamentally episodic and often results from some form of inquiry. The latter consists of the habits and practices that feed an existential infoscape, such as reading the newspaper or chatting to get the latest office gossip. Orienting information work may also be fortuitous and occasioned. For example, we may derive orienting information from encounters with ostensibly different goals. In this sense, information seeking is less active conduct and more openness to information.

Third, the practice perspective provides an alternative explanation for the preference for or relevance of certain kinds and sources of information and how these result from individual and social information practices (Cox, 2013; Pilerot, 2014). Savolainen suggests that people operate within specific perceived information environments that determine which information sources are deemed accessible, establish their perceived reliability and desirability, and set preferences for these sources (Savolainen, 2008). For example, for a manager working in a Clinical Commissioning Group (CCG), information may be gathered about managerial practices of other CCGs through conversations and counted as reliable, accessible, and easy to deploy. However, this information may not fit the parameters of reliability from a health care research perspective, for whom the information environment may look very different. Perceived information environments, as 'the set of information sources of which the actor is aware and of which he or she may have obtained use experiences over years'(Savolainen, 2008), are in turn enacted in habits and social practices that delimit them and make them stable and resistant to change (e.g., so-called 'echo chambers').

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Finally, the practice approach adopts an explicit ecological view by positing that information literacy is the outcome of combining information work and information sharing and bringing together explicit and tacit ways of knowing in a manner applicable to the context (Lloyd, 2010). From this perspective, being in the know 'reflects the social, historical, political and economic ways of knowing the shape and characteristics of a specific site'. Scholarly focus is thus not on people and their information needs and preferences, but rather on the ecology of socially and materially perpetuated information practices and their people.

In summary, the practice approach engages information work as 'something essential, dynamic, on-going and social that intermixes with, complements, supports and is supported by other kinds of work' (Savolainen, 2008: 40; see also Lloyd, 2010).Therefore, information work cannot be separated from other forms of work. In other words, to study information work empirically is to study actual work practices: 'the work of living' (Hogan and Palmer, 2005).

The arc of development in the literature on knowledge mobilization

The trajectory towards a practice-based understanding of information behavior parallels the development of scholarship on knowledge mobilization. The scholarly debate on knowledge mobilization also proceeded through three stages that led to the increasing abandonment of instrumental and objectual views (knowledge as a substance or a product: Cook and Brown, 1999) to sensitivity to social interactions, and the adoption of a processual view of knowledge as historically situated and socially shared mastery (Swan, Newell and Nicolini, 2016). We called the three stages *knowledge utilization*, connoted by an instrumental and linear view; *knowledge mobilization*, where the interactional and social nature of knowledge takes center stage; and the *practice view*, which requires the two previous approaches to be integrated with scholarship that views knowledge as a form of historically situated and socially shared mastery.

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Early developments in the debate on knowledge mobilization: knowledge as substance that can be utilized by managers and policymakers

For several decades, and well into the 1990s, research on knowledge mobilization by policy experts, managers and decision-makers was conducted chiefly under the heading of 'knowledge utilization'. Its aim was to create research-based interventions to solve human problems through knowledge use (Backer, 1991) and close the research-policy divide (Weiss, 1978; 1979). 'Knowledge utilization', examines the use of knowledge generated through research for policy and practice decisions (Rich, 1991). Two different perspectives exist (see Figure 2). The product view identifies knowledge 'products' as crucial to specific decisions (Landry, Amara & Lamari, 2001: 297, Estabrooks, 1999). Knowledge is utilized in three distinct ways. Instrumental utilization is when there is a clear association between a piece of research and a specific decision. Conceptual utilization takes place when a single study influences the decision-making context without changing the decision directly (Landry et al., 2001: 297). Symbolic utilization, finally, is where a piece of research is used as a persuasive and/or political tool to legitimate a decision, position, or performance (Beyer & Trice, 1982).

PRODUCT UTILIZATION PERSPECTIVE	PROCESS UTILIZATION PERSPECTIVE
Identifies knowledge "products" as key to specific decisions (Estabrooks, 1999; Landry, Amara and Lamari, 2001).	*Links knowledge to aspects of the decision-making process. Uses models and scales to identify/measure how research is used (Knott and Wildavsky, 1980).*
Knowledge utilized in three distinct ways: **Instrumental utilization**: clear association between a piece of research and a specific decision. **Conceptual utilization**: A single study influences the decision-making context without changing the decision directly (Landry, Amara and Lamari, 2001) **Symbolic utilization**: research is used as a persuasive or political tool to legitimate a decision, position or performance (Beyer and Trice, 1982)	Knowledge utilization mostly builds on an **input-output model**: knowledge in some form is inputted into the decision-making process to generate the decision output (Weiss, 1979)

Figure 2: two main knowledge utilization perspectives

The process perspective, in contrast, links knowledge to aspects of the decision-making process using an input-output model. This is the idea that knowledge in some form is inputted into the decision-making process to create the decision output (Knott & Wildavsky,1980; Weiss, 1978). The product view has been criticized by for offering a simplified, abstract, and over-rationalized depiction of decision making (Rich, 1991; Rich, 2000). The process perspective, which evolved in response to the limitations of the product perspective, has been similarly critiqued by scholars for offering a view of decisions as a single output event rather than as processes that must be 'viewed longitudinally' (Rich, 1991). This makes it difficult to pinpoint when and where knowledge has an effect on decisions. Knowledge may also have multiple effects, which the input–output model does not acknowledge, nor does it consider that knowledge may not be created simply for use. Finally, when knowledge is put to use, the input–output model does not consider the negative or unintended consequences of its utilization (Rich, 1991; Rich, 2000), or that the process 'may or may not lead to a specific action by a particular actor at a given point in time' (Rich, 1997).

From utilization to mobilization

The utilization models of the 1980s and 1990s view knowledge from a distinct perspective referred to as the knowledge as possession' epistemology (Cook and Brown, 1999). Knowledge is viewed as a thing, or a substance that can be accumulated, transferred, diffused or utilized, while the social nature of knowing is all but ignored. To take account of this forgotten dimension, 'knowledge mobilization' was introduced as a discursive way to advance a more social perspective on policymakers' use of scientific research. Knowledge mobilization is defined as:

> Moving knowledge into active service for the broadest possible common good. Here knowledge is understood to mean any or all of (1) findings from specific social sciences and humanities research, (2) the accumulated knowledge and experience of

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> social sciences and humanities researchers, and (3) the accumulated knowledge and experience of stakeholders concerned with social, cultural, economic and related issues (SSHR, 2008).

The term highlights the interactive and social nature of knowledge work, emphasizing its multiplicity and its contextual, political, and long-term aspects. This view implies that knowledge takes different shapes, has multiple uses, and exhibits wide-ranging effects that may be slower and less direct. It is mediated through social and political processes and brokered through mediators and third-party organizations that contribute to its spread (Levin, 2008; Kislov, Wilson and Boaden, 2017). Indeed, knowledge and practice affect each other in a two-way relationship, which should be conceived in terms of knowledge interaction (Davies, Nutley and Walter, 2008).

The knowledge mobilization perspective also stresses that the circulation of knowledge depends on existing social relations. In a healthcare-specific example of an observational study in primary care, it was found that, rather than using evidence, subjects used 'collectively reinforced, internalized tacit guidelines' (Gabbay and Le May, 2004). These 'mindlines' were created from a combination of the practitioners' early training, reading and interactions with other practitioners and stakeholders. These were then refined 'by acquiring tacit knowledge from trusted sources, mainly their colleagues, in ways that were mediated by the organizational features of the practice' (Gabbay and Le May, 2004: 1016; see also Pedersen, 2016).

The concept of mindlines, alongside similar constructs like social networks and knowledge networks (see Phelps, Heidl & Wadhwa, 2012 for a review) signals a shift toward a more social understanding of knowledge. Here, knowledge is understood as social in character. Social networks are crucial to carrying knowledge, and their structures are crucial to how knowledge is taken up, for instance, through the work of boundary spanners and brokers. The intricacies of social life, including politics, power, pressure, and interests, play a clear role in the diffusion and use of knowledge. In summary, the evolution from knowledge utilization to mobilization

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marks a shift from an instrumental, entity-oriented view to knowledge as a fundamentally social and socially-mediated phenomenon.

Toward a practice perspective on knowledge as situated

Importantly, the social view of mobilization also has acknowledged limitations. In some versions, this approach still depicts knowledge as a substance that travels through social networks and can be used as a resource for action if delivered in the right circumstances. Therefore, to go beyond this idea that knowledge equals impersonal research findings, scholars have increasingly adopted a practice perspective (Greenhalgh and Wieringa, 2011; Nicolini, 2013) which builds on scholarship from Social Studies of Science and Technology (Suchman, 1987), anthropology (Lave and Wenger, 1991), and feminist scholarship (Haraway, 1988). The approach questions the idea that knowledge is a quasi-substance that has no history, no disciplinary origins, is unquestioned and constitutes a form of objective evidence that just needs to be 'translated to be used by managers' (Sackett et al., 1996). In its place, the practice perspective advocates focusing on knowing rather than knowledge. Knowing is manifested in and through practices as knowledge-in-action. It is a form of expertise situated in the sociocultural, material, and historical contexts from which it arises. Knowing is always "knowledge-in-practice-in-context' (Gabbay and Le May, 2011), and as such, it is provisional, contested, and contestable. Although knowing is manifested in various ways, such as narratives, bodies, symbols, and artifacts, it should not be confused with its traces, i.e., representational knowledge as in the utilization perspective. It is only in situated practices that knowing manifests and agency is possible. Understanding how the results of previous knowledge processes are brought to bear in a specific activity – what the other two main approaches call knowledge utilization and knowledge mobilization – requires sensitivity to the processes and contexts that underpin knowing at individual and collective levels. This includes how different forms of knowing and media enable an activity's local accomplishment.

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Knowing is not transferred or mobilized so much as re-constituted in situ, with the help of mediatory resources that make the results of previous work present in the scene of action.

Accordingly, this perspective gives further importance to knowledge brokers, boundary spanners, boundary objects (Melo and Bishop, 2020), and the boundary work necessary to bridge between communities of practice (see Nicolini, Omidvar, Pyrko and Spannellis, 2022 for a review). Knowledge brokers are human actors who enable knowledge sharing across communities, for example, clinician-managers or nursing managers who can straddle the medical and managerial domains (Chew, Armstrong and Martin, 2013; Oborn, Barrett and Racko, 2013; Williams, Radnor, Aitken, Esain and Matthias, 2021). They act as liaisons, gatekeepers, coordinators, representatives, and itinerant brokers (Gould and Fernandez, 1989; Long, 2013; Waring, Currie, Crompton and Bishop, 2013; Williams, Radnor, Aitken, Esain and Matthias, 2021). Boundary spanners are human actors and other-than-human agents, like objects and technologies (boundary objects), that enable cooperation or shared knowing across boundaries (Carlile, 2002). Boundary work refers to the 'purposeful individual and collective effort to influence the social, symbolic, material, or temporal boundaries, demarcations, and distinctions affecting groups, occupations, and organizations (Langley et al., 2017: 704). Knowledge brokers, boundary spanners, boundary objects, and boundary work are critical to overcoming the 'sticky' nature of knowing (Szulanski, 1996), the implication being that knowing can only be shared through joint activity, learning, and participation (Currie and White, 2012; Lave and Wenger, 1991; Waring, Currie, Crompton and Bishop, 2013). As a result, occupational cultures, organizational routines, and professional socialization may all impede knowledge mobilization (Currie and White, 2012; Waring, Bishop, Marshall, Tyler and Vickers, 2019). At the same time, the idea of knowledge brokers, boundary spanners, boundary objects, and boundary work offers a practice-based solution to the challenges of

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knowledge mobilization, illustrating key foci through which translation of knowledge in the course of day-to-day professional practice can be accomplished (Currie and White, 2012).

In summary, the practice-based view completes the shift that started with the social view and requires radical revisions of the normative views of the traditional - and still dominant views of knowledge utilization and mobilization. A practice-based invites to substitute the idea of utilization and mobilization with a view that focuses on how the results of prior skilled work are mediated in a new context and translated to support or expand the extant activity. To facilitate knowledge "utilization" and "mobilization", one must therefore understand the nature of the on-going work, the rules governing its nature, local criteria for what is considered plausible, the socio-material arrangements of the practices, and the power relations manifested in different types of knowing (Stevens, 2011). The practice-based perspective emphasizes the need to accommodate the mediation strategies to the nature of the boundaries that need to be crossed (Waring et al., 2021) and making new knowing relevant to those involved in different activities. 'Scientific' evidence alone can never mechanically guide administrative and policy decision-making because what evidence points at is always up for grabs and results from this complex process of practical interpretation (Authors, forthcoming).

Discussion: what lessons can knowledge mobilization take from studies of information behavior?

In this paper, we have traced the literature on information behavior and compared it with work on knowledge mobilization in healthcare administration and policymaking. In doing so, we respond to scholarly invitations for healthcare researchers to 'cross disciplinary boundaries and tap into existing resources so that concepts do not have to be "reinvented" in neighboring fields' (Oborn, Barrett and Racko, 2013: 412). Our narrative review has allowed us to identify that the two bodies of work broadly overlap in terms of research foci, and are separated mainly by historical disciplinary boundaries, as shown in Figure 3.

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INFORMATION BEHAVIOR	KNOWLEDGE MOBILIZATION
Disciplinary origin: Library studies	*Disciplinary origin*: Healthcare research policy
Main focus: How people access and interact with information	*Main focus*: How to move knowledge to where it can be most useful
Key aim: Exploring the knowing side of the equation	*Key aims*: Addressing the knowing–doing gap
Use and usability of information and knowledge are central in both.	

Figure 3. Overview of knowledge mobilization and information studies research foci

The two research literatures followed similar development arcs, which can be described as shifting from a systems to a social to a practice-based orientation. Both streams also recognize the limitations of an individual approach and advocate addressing the issue from a relational angle. However, the field of information behavior has been quicker to recognize the limitations of stressing the nature of the information or source – the so-called systems orientation. Interestingly, while both literatures have turned toward a more social orientation, they have done so in distinct ways. Highlighting the exact nature of these differences enables us to identify lessons that health service scholars and policymakers can take from the information behavior literature.

First, when it comes to the 'social turn', studies of knowledge mobilization have focused particularly on the idea that social conditions bound access to information and exchanges and interpretation of information. This is especially visible in studies of social networks (Borgatti and Cross, 2003) and the roles of formal and informal networking processes. The former link knowledge mobilization with positions in networks of social relationships and the nature of social links with various nodes (D'Andreta, Marabelli, Newell, Scarbrough and Swan, 2016; Fitzgerald and Harvey, 2015; Liebowitz, 2007). The latter foreground the role of mandated and

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professional networks (Ferlie, McGivern and Fitzgerald, 2012; Gabbay and Le May, 2011; Newell and Marabelli, 2016; Racko, 2018).

Scholars in the information behavior tradition have instead turned their attention to other social aspects, including cultural norms and situations. On the one hand, information scholars have examined how access to and acceptance and adoption of specific information and knowledge derive from belonging to specific, bounded 'small worlds', created and sustained by interaction and communication processes (Strauss, 1978). Here, everyday information seeking and sharing are oriented by recognized norms (Burnett, Besant and Chatman, 2001). This implies that knowledge mobilization scholars and policymakers should attend to understanding what such 'small worlds' might be in relation to distinct information sources and how they may influence take-up. This includes investigating negotiations within specific 'small worlds' to explore how communities agree on what constitutes acceptable information and adoption.

On the other hand, information scholars point to the importance of specific situations as occasions for information and knowledge sharing. As discussed above, attention to the social nature of information behavior has revealed the importance of interactionally-created 'information grounds' as sources of information and knowledge. This suggests a promising avenue for future health care management research and policymaking regarding knowledge mobilization not as a fundamentally individual effort but as a dialogical and discursive co-achievement. This can be operationalized by asking who is implicated in such processes, what are their respective roles, and what are the consequences for eventual outcomes?

Second, despite its 'social turn', much of the knowledge mobilization literature has retained its instrumental underpinnings. Too often, the focus of this approach is limited to sources and sourcing of evidentiary knowledge, and how to make such knowledge readily available. As a result, efforts are devoted largely to putting out clear and persuasive information using easily

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accessible channels – the 'push' idea of knowledge mobilization that still drives much policymaking in this field. The assumption is that knowledge and new ideas will be adopted for their perceived promised value (Rogers, 2010). Information behavior scholars challenge this view, stressing that human actors only use information when they need it. This means that if information is pushed to people who cannot find any relevant connection between it and their daily activity at that moment, the information simply will not stick.

Relatedly, information behavior research alerts knowledge mobilization scholars and policymakers to the need to conceive 'needs' in a broad rather than instrumental way. Managers seek information both to make decisions and to make sense of their daily situations and tasks. In adopting a narrow view of knowledge utilization, we overlook the mundane, unintentional efforts of knowledge mobilization. By the same token, focusing on decisions when studying knowledge mobilization is greatly limiting, as this permits us to observe only the tip of the iceberg when it comes to the mundane activities through which managers stay informed. This calls for investigations of managerial work as it happens over time, recognizing also that while information may be accessed at certain times, its exact need may only be identified later. Furthermore, the same information may satisfy different needs. However, distinguishing such information may be impossible without an appreciation of information work as it happens.

Finally, our review has shown how sensitivity to the social and interactional nature of knowledge mobilization and information behavior has prompted increasing attention to mundane practices. Both literatures agree that to understand knowledge mobilization and information behavior, we need to integrate studies of macro processes with detailed analyses of the daily practices and work underpinning the two phenomena. Specifically, studies of information work, defined as how managers deal with information and knowledge in the course of their daily activities, suggest that to understand how managers and other organizational members deal with information, we must embrace a wider view of what counts as information.

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Implications for research

The approach advocated here encourages empirical research efforts in health care management, focusing on everyday ways of engaging with data, information, and knowledge to perform situated actions with and through the resources necessary for their accomplishment (Tuominen, Savolainen and Talja, 2005). Practices are also mobilized to explain preferences for certain sources and how these become habitualized.

A lesson for researchers and policymakers wishing to learn from information scholars is that knowledge mobilization should be investigated in the exact settings and actions in which distinct information may find relevance. This means shifting attention to which information is used, how it is packaged and put to use, and when and for what situational reasons. Methodologically, it also implies paying attention to how information is obtained in the midst of occupational practices, *not* as a separate activity. For example, in one study, chief executives of health care organizations often complained that they 'didn't do any work today; I just talked' (Nicolini and Korica, 2021). However, as the information behavior literature clarifies, such non-intentional engagement is as important to information behavior as intentional engagement. They both constitute managerial work *and* information work done in conjunction.

Importantly, this approach also encourages researchers and policymakers to ask how specific combinations and assemblages of routines, practices, social relationships, and dedicated or mundane artifacts actively constitute informational environments, delimit horizons of visibility, and create both inclusion and exclusion effects. Recognizing that such performative assemblages, referred to as managers' personal knowledge infrastructure (Nicolini, Korica and Ruddle, 2015), tend to work in the background and produce all manner of intended and unintended effects opens up the possibility of investigating minute and mundane potential facilitators or obstacles to knowledge mobilization.

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This approach also invites us to remember the invested nature of knowledge and the contested nature of practices (Carlile, 2002). Knowing, sharing, and acquiring information are inherently implicated in the process of (re)producing power relationships. Examining processes of knowledge mobilization without asking whom they derive from or whom they benefit, or how they reproduce, sustain or threaten power arrangements is likely to downplay both interests and conflict and thus produce unrealistic accounts.

Implications for practice

Our invitation to adopt a more constructivist notion of knowledge mobilization also has practical implications. This is because different perspectives on knowledge, information and the nature of the knowledge mobilization and information behavior imply contrasting views on the possibility of extending the principle of evidence-based medicine to the administrative and management issues on which we focus (Sackett et al., 1996).

In particular, if we consider knowledge mobilization (and use) largely as a utilitarian problem of efficient assimilation and use of 'best information' as in the knowledge utilization and systems view in information behavior, we are likely to be sympathetic to the idea of evidence-based management. The focus will thus be on the effective transfer of information so that managers can make decisions guided by 'scientific findings', 'organisational information', 'practitioner judgment', and 'stakeholder concerns'(Rousseau, 2020). Maximizing information transfer and removing barriers will be critical. In contrast, the social, constructive and practice-oriented approaches suggest that organizational realities seldom map unproblematically onto their idealized 'evidence-based' representations (Dopson and Fitzgerald, 2005; Hurst, 2019). These views problematize the 'persistent mismatch between the rational, linear, scientistic approach that the [evidence-based] movement demands and the pragmatic, workable approach demanded by the messy world of practice' (Gabbay and Le May, 2011: 32). As indicated in our review, from these perspectives knowledge mobilization appears as the result of a

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multiplicity of processes rather than a single chain of actions. It also involves eclectic sources beyond individuals, such as informal networks, collaborations, professional associations and institutions, all moved by specific interests. Evidence-based and informed decisions require efforts that are simultaneously epistemic and political (Swan, Newell and Nicolini, 2016). Evidence alone can never act 'as a guide to truth' (Kelly, 2008) because both evidence and truth are multiple. As we saw in the unfolding of the Covid 19 pandemic, different views of knowledge and information lead to a very different course of action.

Conclusion

In this paper, we have identified a number of research foci, concepts, and analytical choices developed in the literature on information behavior that may be of benefit to the literature on knowledge mobilization in healthcare management. Although their respective arcs of development have been broadly similar, the literature on knowledge mobilization retains some assumptions and foci that may serve it well when it comes to policy development but do not reflect the daily realities of managers' information work, and, thus compromise its positive impact. The information behavior literature offers analytically nuanced means to bridge this gap more effectively without having to reinvent the wheel. We hope our paper provides helpful guidance to facilitate such important work.

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