

When politicians and the experts collide: Organization and the creation of information spheres

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Abstract

This paper explores collaborative information behavior in the context of highly politicized decision making. It draws upon a qualitative case study of project management of a contentious public sector infrastructure project. We noted the creation of spaces for the development and exchange of information by experts and conceptualize these as information spheres. We postulate that these were formed to bypass power-induced information behavior that excludes expert power, such as information avoidance. This approach contrasts with the expected project management and information norms, rules and behavior, however, provides a language that can be used to explain the phenomena of bounded information spaces which complement and may be used as a development of adjunct to small world's theory.

1 | INTRODUCTION

This paper contributes to scholarship into collaborative information behavior (CIB) by providing a fine-grained exploration of practice (Lloyd & Olsson, 2019) within the context of local government teams developing managing complex projects. These teams work in complex and uncertain political environments, a condition exacerbated by the need to address public policy goals that are inherently resistant to definition (Boyne, 2002; Head & Alford, 2015). This provides a research environment in which the social, affective, and contextual issues that shape information use (Burnett, 2015) are illuminated, and allows a contribution to the developing literature on CIB (cf. Pilerot & Limberg, 2011). Reflecting on the decision making and information flow between a project board predominantly consisting of politicians, and a project board made up of professional planners, it illuminates the sometime problematic nature of information exchange between experts and politicians, an issue

amplified and brought to wider public attention by the response to the COVID-19 pandemic (Duarte, 2020).

Much of the foundational work into project management has assumed that all projects are fundamentally analogous highlighting a standard set of activities such as planning, design, monitoring, and risk management (Winter et al., 2006). Formal project management methodologies (such as PRINCE 2) are based on the rational theories of power providing a universal and deterministic model which emphasizes planning and controlling uncertainty (Svejvig & Andersen, 2015). These project norms have been inscribed into management information systems designed to support projects and project management standards and practices which are in turn legitimized and maintained through training, certification processes, and accepted practice (Hodgson & Cicmil, 2007). Such normative project management approaches, tools and techniques place a particular emphasis on information as a neutral object and are predicated on concepts of making the “right decisions at the right time”

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and that “accurate and timely information” is an essential determinant of “success or failure” (Cleland & Ireland, 2002). This view also resonates with traditional models of information behavior which emphasize cognitive models of decision making based on a rational process of information seeking and use (Allen, 2011; Dervin, 1983; Kuhlthau et al., 2008).

This, however, contrasted sharply with the practice of the first author who, as a project manager in local government, had observed very different project management and concomitant information behavior. The research project was, therefore, initiated by the first author to explore the practice of local government teams developing large infrastructure projects focusing on the initial stages of the project: the concept stage where the plan for the building was agreed.

The research question addressed was, “What is the information behaviour of project teams involved in local government construction projects at the concept stage?”

The research uncovered the covert and bounded information behavior within small groups of individuals involved in the project development. We described this behavior as occurring in “information spheres.” We defined information spheres as tools that allow groups to manipulate both the temporal and spatial elements of expected decision processes. Information behavior was observed to be a deeply political process. Power asymmetries outside the sphere were moderated in favor of those within it by CIB, whereby information was shared openly with those within the “sphere” but either selectively, not at all, or by through a delayed transmission to those outside the sphere. Spheres enabled actors within the project domain to subvert the formal project structure and norms of information behavior by excluding those who would otherwise be key members of the project domain including project sponsors, whose influence may undermine the open exchange of information.

The focus of this paper is twofold. Firstly, to provide a fuller description of the concept of information sphere, briefly described above, and its emergence in this research. Secondly explore the inter-related factors which lead to their formation of the information sphere, and how the differing organizational norms and group values motivate and shape changes within information behavior.

2 | LITERATURE REVIEW

Much work in organizations is not undertaken in isolation, but within the organizational structure of teams, indeed collaborative working is central to the activity of a project team. Yet the information behavior of teams,

and collaborative settings has not been a strong focus of information behavior research (Hertzum & Hansen, 2019; Khatamian Far, 2019; Sonnenwald & Pierce, 2000). The models developed to conceptualize information behavior have instead focused primarily on the individual (Perez, 2015). The terminology that has been used by research that has explored group-based approaches has varied significantly with the terms collaborative information seeking (Hertzum, 2008; Shah, 2013), collaborative information sharing (Widen & Hansen, 2012), social information behavior (Jaeger & Thompson, 2004), collaborative information synthesis (Blake & Pratt, 2006), and CIB (Karunakaran et al., 2013; Perez, 2015). These have been used both as synonyms and in cases to provide a slightly different emphasis. Poltrock et al. (2003), for example, have defined CIB as, “activities that a group or team of people undertakes to identify and resolve a shared information need.” This suggests that the process of collaboration is highly interactive, largely intentional and likely to be mutually beneficial (Shah, 2013). Reddy and Jansen (2008) have defined CIB as, “activities that a group or team of people undertakes to identify and resolve a shared information need.” Both definitions include two critical constituents: working together in collaboration and resolving information needs, which includes seeking, retrieving, and using information (Reddy & Jansen, 2008). In public construction projects these activities are more likely to be conceptualized as collaborative working to solve a problem need defined by the organization. For the purpose of this research the more comprehensive CIB definition provided by Karunakaran et al. (2010) is used:

“totality of behavior exhibited when people work together to identify an information need, retrieve, seek and share information, evaluate, synthesize and make sense of the found information, and then utilize the found information.”

This builds upon Wilson's (1981) definition of information behavior as the “totality of human behaviour in relation to sources and channels of information” (p. 49). The definition includes active and passive information seeking and information use, which recognizes that information behavior involves the creation, acquisition, use, and sharing of information (Karunakaran et al., 2010).

The focus of this paper is on collaborative behavior in a particular work context; that of project teams which include public sector professional groups. For the purpose of this research, the term professional is adapted from Leckie et al. (1996) who have argued that exploring diverse work-related contexts will enable information

science to ground its theories and information processes. The definition of professionals used includes service-orientated professionals, with extensive post-college education working within standards set by a professional body and or adhering to nationally recognized codes of ethics (Leckie et al., 1996). It has been argued that professionals share common ethical and normative frameworks, with any power differentials dependent on expertise rather than hierarchy (Sloane, 2008).

There has been limited research on the information behavior of professionals within government, and little within local government. Outside of academia the health care sector has been the most researched areas of information behavior among professions providing significant contributions to our understanding. Intermediaries, working on behalf of managers, are crucial as they also process and validate the information. Isah (2008) suggested that learning and work practice are entwined. Physicians construct their information, which is embedded in the context of their learning in work practice, which is mediated through tools and artifacts (op cit.). The study found that meaning is created through negotiation, which is dynamic. In common with other models, it was found that understanding and the interpretation of events is done collectively (Karunakaran et al., 2010). It recognizes the role of politics with emerging contradictions stabilized through the intervention of symmetrical and asymmetrical power relationships (Isah, 2008). Jette et al.'s (2003) research suggests that initial judgments were shaped by sharing information within teams; however, final validation and use requires consideration of the situational constraints placed on the optimum solution by the organization.

Research by Leckie et al. (1996), built on earlier studies to explore the information behavior of a range of professionals including doctors, dentists, nurses, engineers, and lawyers. Many, if not most, information behavior models seek general applicability (Ford, 2015; Niedźwiedzka, 2003; Wilson, 2016) and focus on the activities of an individual engaging in information transaction (Byström & Järvelin, 1995; Kuhlthau, 1991). In contrast, the model developed by Leckie et al. (1996) assumes that information seeking is related to work role and the tasks that arise from it. These roles and tasks result in information needs that are modified by prior knowledge, the availability of information sources, domain knowledge, and the nature of the information seeker and his or her context. It is an iterative model with the experience of each information use episode going on to inform knowledge schema that underpins subsequent information needs.

The importance of such models in understanding and analyzing information behavior cannot be understated;

however, where these models involve some form of collaboration, it is assumed that the motive to engage fully with the respondent is without political behavior (Reddy & Jansen, 2008). Collaboration also assumes that information and the practices of sharing and exchanging it are overt, as well as aligned behind a singular objective (González-Ibáñez et al., 2012).

3 | METHODOLOGY

To understand work-based information behavior, it is important that we understand work activity in its context. Cultural historical activity theory (CHAT) provides a framework for analyzing professional work practices and is the principal methodological approach used in this research for given that it is contextually focussed and designed to understand historically specific activities that mediate tools and social organizations (Vartiainen et al., 2011).

Context is often treated as a symbolic and an abstract concept, independent of any deep-seated managerial practices and socio-political structures that are habitually taken for granted. CHAT recognizes that social interaction is not homogeneous. In practice, it is composed of disparate elements, whose multiplicity can only be understood in terms of the historical layers of activity which sediment base, the historical meaningful distinctions of our contextuality (Engeström, 1993).

CHAT was originally developed in the 1930s by Russian psychologist Vygotsky (1978) and later by his student Leont'ev (1978) to address the fundamental question of what is the relationship between humans and their environment. In doing so Vygotsky's assertion that our interactions with the world are mediate broke the accepted direct link between stimulus and response, actor and object, and added an intermediate link often referred to as tools, instruments, or artifacts (Marken, 2006). Thus, CHAT is inherently a dynamic structure, with its components subject to constant change motivated by tensions and contradictions within the activity system which also serve as a means through which new knowledge about the activity system can emerge (Engeström, 1987).

Engeström (1999) supplemented Vygotsky and Leont'ev developments to create a third-generation Activity Theory model (see Figure 1) including a specific focus on rules, community, and hierarchies (division of labor). Triggering actions; such as the perceived failure of the project manager or a major regulatory change affecting the stability of the project epitomizes the contradiction inside the activity stream or between parallel activity systems (Engeström, 1999). While focused primarily on human activity, the ability to inculcate artifacts and tools

as mediating devices within the activity relations enables the focus of the project management debate to shift from computer systems, widely adopted within construction project management, as the focus of interest toward an understanding of technology (and techniques) as part of a wider scope of human activity (Kaptelinin & Nardi, 2009). Such artifacts are constituted through cultural and historical processes which both mediate activity while achieving their functionality through it (Suchman, 2000). In terms of its relevance to this research and its context CHAT has several benefits as it is:

- Highly contextual and give due regard for historically specific practices;
- Avoids a standard linear theory of development and the assumption that there is singularly correct sequence leading to a course of action;
- Focuses on collective work as the principal unit of inquiry and analysis; and
- Examines internal and external contradictions and tensions by way of understanding motive and change, it avoids taking unity of purpose for granted even within the same organizational unit.

In this research, CHAT (Allen et al., 2011, Ibrahim & Allen, 2012, Pang et al., 2020) underpinned both the development of the research questions asked, description of findings and the analysis of data. An important element of third-generation activity theory is the exploration of rules and norms (identified as in Figure 1 above through the shorthand of rules). While formal rules are often easily identified and explicit, social norms are more intractable and difficult to surface. To address this challenge, the research used by bi-polar surveys with each participant based on Kelly's (1991) personal construct theory. The bi-polar surveys of the interview respondents offered a method of identifying

the motives of the project actors by contrasting the situational and the personal, namely norms and values, across 14 constructs thus providing corroboration for hidden motive (see Table 1).

In the bi-polar questionnaire, respondents were asked to indicate to what extent the constructs match what happens in the team at present. The bi-polar survey is designed to capture the norms "as is" within the team (T) as affected by situational and contextual factors emanating from the project domain. The next question is about what "should be" the case, in order to capture the values of the individual respondent (I) (Frese, 2015). The marks placed by the respondent on the horizontal line are converted to scores of between +49 and -49 these were then placed within one of four categories as shown in Table 2.

The bi-polar analysis led to the development of a number of spider diagrams to provide a visual description of the bi-polar constructs of each respondent.

In this paper, we draw upon data from a single case study with interviews gathered from a project team and project board engaged in a local government-led infrastructure project. Such projects have a high-monetary value and have a significant impact on a community by, for example, replacing community-used municipal buildings. They also often have oversight from elected politicians, involve private sector partners, and participants are acutely aware that their decision making can sometimes be the subject of legal scrutiny, often after the project has been concluded. It is difficult to understate the

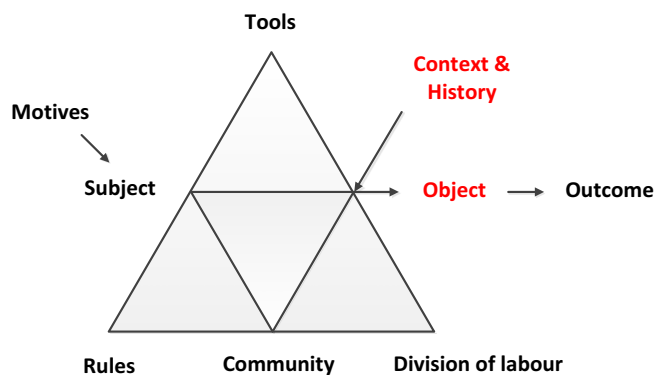


FIGURE 1 Activity Theory model (adapted from Engeström, 1987)

TABLE 1 Bi-polar constructs

Position versus experience	Short term versus long term
Autonomy versus control	Experience versus systems
Individual versus collective	Implicit versus explicit
Diversity versus uniformity	Iron triangle versus stakeholder
Milestones versus relationships	Trust versus ease of access
Self-selecting versus imposed	Close versus distant
Uncertainty versus certainty	Shared versus divergent values

TABLE 2 Scoring of bi-polar categories

Narrative label	Score
Strong support	35–49
Clear support	21–35
Support	61–20
Equivocal	5 or less

difficulty faced when attempting to get access to either case organizations or interviewees in this context. Selection of the case was problematic both because of access issues and because of the very limited number of potential cases which were at the concept stage of development when data collection needed to occur. The case discussed in this paper was one of the few that was willing to collaborate with the research.

The case selected focused on managing a public cultural project, funded primarily by local government in the pursuit of their regeneration agendas. The intervention of a public authority was seen as necessary to encourage economic and cultural activity within areas where there is market failure or little or no interest by the private sector—hence a market choice “solution” to the ambiguity is not available (Boyne, 2002; Jałocha et al., 2014). The aim was the development or redevelopment of a public building to house cultural services which are not simply low-cost equivalents of private sector services but are activities which must have, at least ostensibly, a regard for equity and equality (Usherwood, 1994).

The local authority used a project management methodology based on PRINCE 2 which relies heavily upon documentation and is predicated upon open, transparent, and frequent information sharing and collaborative behavior. All the respondents were aware of this methodology and the imperative to use it, through training and interaction with others.

The researcher initially approached the project team and the board as a single entity, with the same motivation of agreeing the form of the new building. The project team was the focus of the day-to-day activities of the project, while the project board provided oversight and was the decision-making body. Data gathered included interviews, document analysis, and bi-polar surveys. Despite organizational support for the project, access to the team and board was particularly difficult. The decisions being made were highly sensitive and while the “front stage” of the minutes to meetings were available the “back-stage of actions” was undertaken in the shadows. Access to individuals was closely guarded and interviewees were often initially reluctant to openly discuss their information behavior or actions. As Liu (2018) notes such elite groups are relatively unstudied because of their ability to use their positions and authority to protect themselves. Utilization of professional networks provides one mechanism to access elites (Dicce & Ewers, 2020) and in this case personal networks and recommendations from professional colleagues became the only way in which limited access was granted. The respondents and their role within the case study are outlined in Table 3.

Ten interviews (and bi-polar questionnaire responses) were gathered from these respondents. Other “informal”

TABLE 3 Case study participant roles

Participant	Ref.	Domain
Sarah-Project Manager	R101	Projects; PT
Gillian-Program Manager	R102	Programmes; PT, PB
Steven-Director of Assets	R103	Asset Man.; PB, LM
Adam-Head of Libraries	R104	Libraries; PT, LM
Nancy-Head of Communities	R105	Communities; PT, LM
Frank-Projects Director	R106	Projects; PB, LM
Graham-Executive Director	R107	Deputy CEO; PB, LM, sponsor
Peter-Director of Culture	R108	Culture; PB, LM

Notes: Domain participation: PT, project team; PB, project board; LM, line manager (business as usual service). Employment: All respondents are employed by the council. Actual names and job titles have been changed to protect anonymity.

interviews were conducted where permission to take notes or record was not given. To complete the scope of the case, nonverbal communication was recorded independently by the researcher. Other observations were undertaken during visits to the offices of the participants, one within a main council building used to house most council staff, and the building upon which the project is focused. The activity within and external to the community building was observed by visits to all of the publicly accessible areas of the building. Secondary observations and analysis came from documentary analysis, including council reports, project documentation, and reports in the local press. After reviewing over 100 documents and other pieces of information, 27 were chosen to contribute to the case study. Nvivo10, a qualitative data analysis software, was used to code the interview transcripts, observations and documentary evidence. A constant comparison method was used to form categories, establish boundaries, discern conceptual similarities, and to discover patterns (Boeije, 2002). A condition of access to gather data was that the respondent's identities and that of the case would be anonymized in any publication, therefore, the data used in this paper will be anonymized interview data.

4 | FINDINGS

The aim of the project in the case was to re-purpose a large historic building of significant public interest in itself and which contained a branch of library service which was valued by the local community. The project had a long history of starts and failures, highlighting the

disjunction between a rational desire to improve the service operating from the civic building involved, and the politics of enacting those wishes within the context of competing issues and resources.

Much of the project history supported Dvir's (2005) contention that public projects are not stopped, because of the competing interests of the various parties and the politicization of contentious projects. There was an explicit political steer that the library service should remain within the building, but this contrasted with a competing implicit proposition that something more transformational and ambitious should be sought even if that meant controversially replacing the library with a new, more sustainable, commercial use in the building. The officers (members of the project team), gathered evidence which supported the transformational approach or at least the opportunity to explore it. The information gathered was in opposition to the viewpoint held the politicians involved the project board. The intended outcome of the project, therefore, differed between the board and the project team.

The wider contradictions and tensions that developed during the project development process are seen in

Figure 2 below. The red nodes in the diagram indicate primary contradictions within an element of the work system and the red lines show where there are secondary contradictions between elements of the activity system.

The lack of a single vision (Node A2 in Figure 2) within the council failed to allow the project team “come into its own” and have “something to deliver against” in the face of a multilateral project board (Node A4 in Figure 3), and an uncertain political environment (Node A3 in Figure 2), where analytical processing and information validation were contradicted by a wider political narrative which preferred risk aversion and the outward appearance of unity. This in turn limited the scope for the overt consideration of alternative options for the building.

This conflict between political information values (A3 in Figure 1) and project values (A1 in Figure 2) resulted in uncertainty about the relevance of the project team, who were described as “invisible” by some project board members. Other board members argued that the project team's establishment was premature, driven by the need to be seen to be doing something in the face of public demands for change, and the actual or perceived

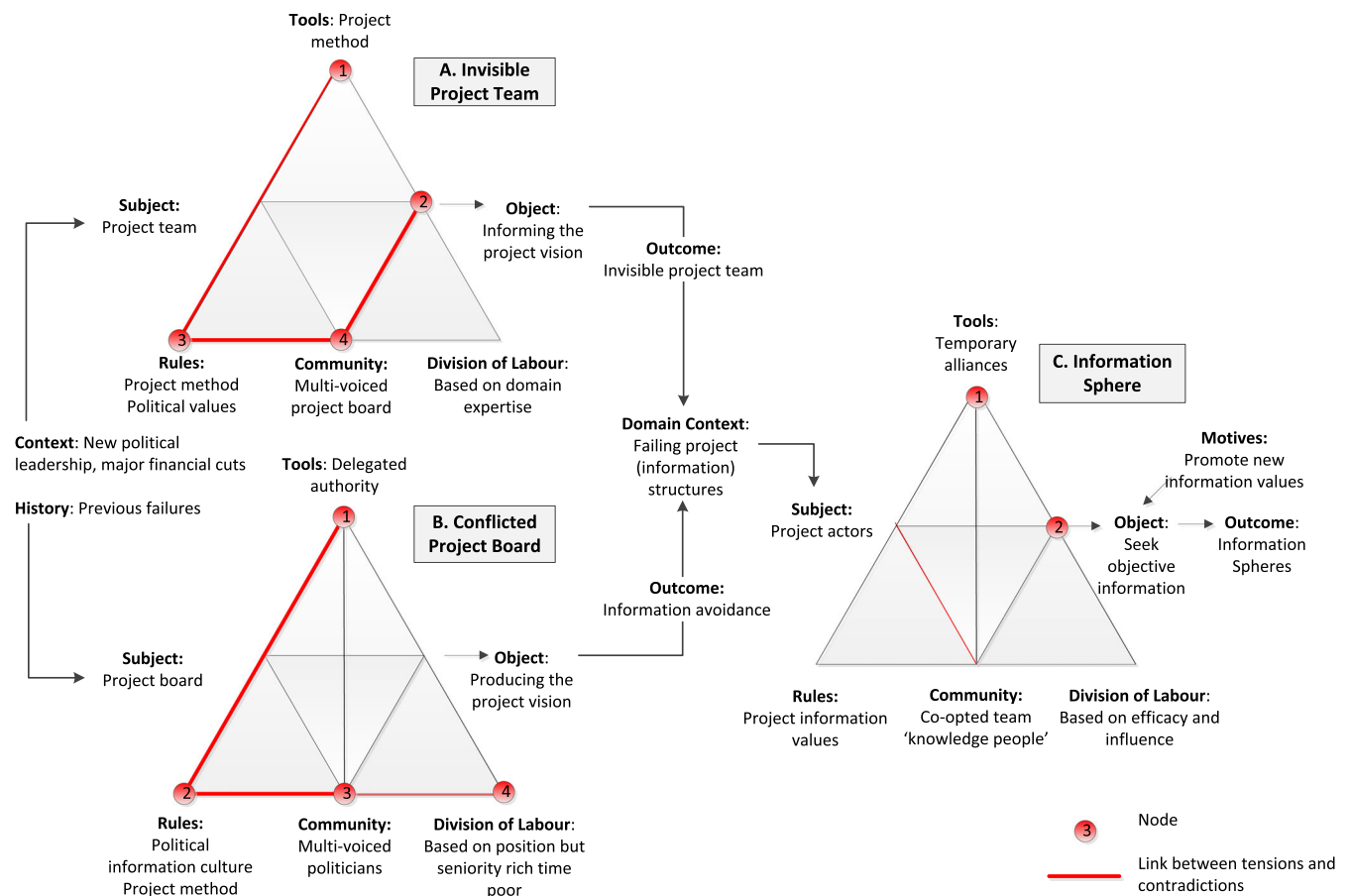
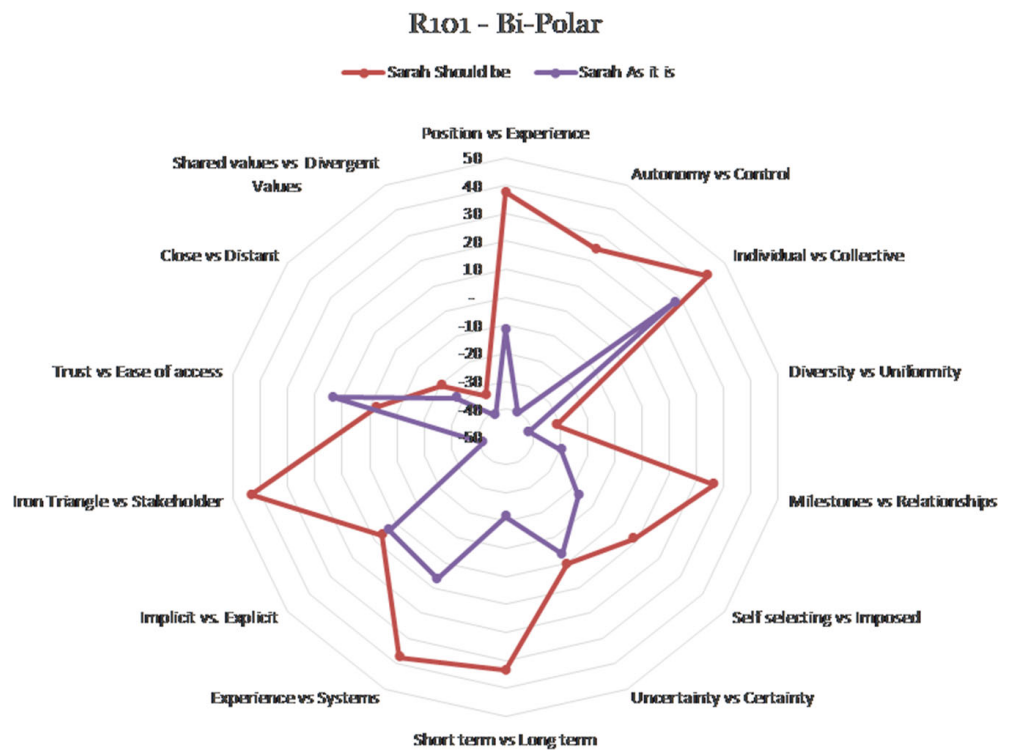


FIGURE 2 Contradictions and tensions leading to information spheres

FIGURE 3 Bi-polar diagram contrasting the organizational norms (as is) with the personal values of the project manager (as it should be)



views of politicians. Other tensions arising from this conflict meant highlight reports focusing on progress, risk and scheduling, remained unread, “it’s a multi-stream report but the problem is it gets submitted to the board, no one reads it” [PB Member6]. It was also argued that information provided by the project team was also “retrofitted” by members of the board to suit the prevailing political view point to enable audit trail evidencing.

The team’s function as a tool and source of rational information was undermined by a lack of trust from the board who evaluated their project and political cues perceptually, relying heavily on their intuition and delegated powers, rather than the expert power of the team (B1 in Figure 2). This lack of more objective project information limited informational power of the project team and the ability to bring about change through an informed resource, who were largely excluded from board meetings. This created a more homogeneous project team separated from the project board working in parallel to the board without oversight from the board: moving from being seen as an “invisible” project team to forming a separate project team which was intentionally “invisible” to the board.

This lack of the project team’s social presence at board meetings also exacerbated the situation by limiting the contextual benefits of a real-time of exchange of information both contextual and project focused. This assumption was reinforced by the bi-polar survey and interviews which confirmed that decisions by the board

were based primarily on experience and perception. As the project manager put it, some reports were, “...more based on a gut feeling of the politicians as to what they wanted and where” [PT Member 1].

Motivated perhaps by the distance in hierarchy between those who knew the politics and reputational risks caused by the uncertainty, those with legitimate power restricted access to sensitive political information. This caused tensions between the project team and project board which directly impacted on the ability of the project manager to do her job:

“Somebody on that project board knows a little bit more about politically what’s on the horizon or opportunities that might be coming on the horizon which they can’t outright come out and say...” [R101].

The research also revealed a disconnect between organizational norms and value as they were in the organization and the values held by the norms and the personal values of the respondents within the project team and project board, as a whole. Of the 14 constructs measured by the bi-polar questionnaire (see Table 1), the only congruence between the organizational norms (as it is) and personal values (as it should be) was that the achievement of project objectives depended mainly on the actions of individuals. The diagram in Figure 2 below illustrates this by describing the difference between

organizational norms (as it is) and the values (as it should be) one of the project managers.

While this could have reflected the lack of leadership, the privileging of this personal responsibility may also point to a belief in the self-efficacy of the individuals within the project domain, if not the normative structures that framed it. A stark difference between the project board and the project team was that the individuals in the project team worked in concert, shared information with each other and collaborated in an open manner.

A political information culture within the council (B2 in Figure 3) caused tensions within the project organization (team and board) as actors sought to compensate for this over-reach and retain the objectivity called for by project method. This position was exacerbated by a lack of clarity and transparency on the political aims (B3 in Figure 3) and by senior service managers, appointed to lead, but who were time poor (B4 in Figure 3). Notwithstanding this, project orientated staff-built alliances to reconcile these tensions (C1 in Figure 3):

“I’m going to be kicking off a bit of collaborative work with this other regeneration team on Friday just not necessarily involving any of the [service people] people but I will bring that back in towards the end of the month because again I think this is classic” [PT Member 3].

The more uncertainty within the project the more the project actors persisted in the search for information that could break the deadlock by “going back and finding the knowledge people” [PT Member 1] (C3 in Figure 3). Seeking to find the information reflected the belief that the political information culture could be challenged by workable options supported by information,

“... members can be very strong-willed and strong-minded, and I think it’s quite easy to get batted down into a position of submission but if the facts are there then obviously it becomes a different discussion” [PT Member 6].

In this case, we can see two distinct “information spheres,” the first of the project team and the second within the project board. Information was collaboratively gathered and shared within the project team to create a common view of the project—within the team. This related to actions and information behavior which occurred in the shadows and to the extent that the project team were “invisible.” The project team was influenced by a motivation that the information would be shared with the board and would influence their decision

making. Within the board, we saw another information sphere where information was valued, shared, or avoided as part of a political process.

5 | DISCUSSION

Whilst the definition of collaborative information used within this paper (Karunakaran et al., 2010), suggests matching representation with understanding cannot be assumed, the model does not deal with how disagreements are resolved or where agreement takes many years and the situational backdrop to the information problem changes. The model also implies that equal weight is given to each individual assessment of the information and that dialog is based on the public space, devoid of politics. Taken in conjunction with Sloane’s (2008) view that in professional work power differentials dependent on expertise rather than hierarchy this suggests that information should flow based on expertise and be apolitical. Indeed, most definitions of CIB assume that those in collaboration have common goals. However, even within a single organization with well-defined codified frameworks tension existing within and between services mean that attaining a common goal can be problematic. Added to that within project team’s information may be centered on achieving strategic and tactical goals that may or may not accord with, and therefore be differentially affected by, the cognitive framework of those supposedly in collaboration and the information systems designed to support them.

This research, in contrast to the extant literature, found that CIB both within and between groups was highly political. We suggest that information spheres are created by groups where information is shared only with those within the sphere. This is explained as a mechanism to protect open information behavior within the group and to counterbalance power asymmetries. These information spheres are created by strategic information behavior, where individuals and groups (subjects) position themselves and the tools at their disposal to leverage their influence (and power) to directly or indirectly achieve a change in the information behavior in others (the objects), which promotes the information values supported by the subject (Riley, 2018).

Information spheres, as noted earlier, are designed as “a mechanism to protect open information behaviour within the group and to counterbalance power asymmetries.” In this they are distinct from the ideas of “filter bubbles” and “echo chambers.” The filter bubble, as defined by Pariser (2011), the originator of the term, is the “personal ecosystem” defined by the algorithms of search engines and social media sites, which collect

information about the user and use that information selectively to determine what *may* be of interest to the searcher or user. In other words, the filter bubble is an algorithmic construct, whereas the information sphere is constructed by its members and involves face-to-face communication to a significant extent.

The echo chamber is somewhat similar to the filter bubble, in that it is most closely associated with the Internet and may involve algorithmic systems to some extent. It differs, however, in being more dependent on online interaction with information sources, particularly political sources. Sourcewatch (2019) defines the echo chamber as “a colloquial term used to describe a group of media outlets that tend to parrot each other’s uncritical reports on the views of a single source, or that otherwise relies on unquestioning repetition of official sources.”

Also, we define information spheres as “safe spaces” for CIB, while filter bubbles and echo chambers may be very unsafe for those involved in or affected by them.

Clearly, members of an information sphere may experience filter bubbles and echo chambers, but the concept is quite different, relating, in the case discussed in this paper to the need for project team members to distance themselves from their political masters. In this respect, it seems quite reasonable to suggest that information spheres may play a role in any situation where the worlds of practice and politics may collide. For example, during the pandemic experienced while this paper was in the final stage of preparation, the UK’s Prime Minister and his Cabinet constituted an information sphere that sought to distance itself from the scientific advice provided by SAGE—the Scientific Advisory Group for Emergencies, in order to find a balance between a health strategy and the economic health of the country (Sample, 2020). Within organizations, also, communities of practice may function as information spheres where pressures from senior management point to courses of action that may be at variance with professional practice. Macpherson et al. (2020) point out that senior management’s attitude toward the communities of practice they have established can be “equivocal.”

Within project teams, the visible manifestations of strategic information behavior are more apparent in domains which lack coherence and a singular project narrative to shape the information behavior of the actors within the project domain. The unevenness of the strategic information behavior processes may indicate underlying tensions within a project; hidden by the normative project structures and validation processes. The work supports the view of Pinto (1996, 2014) that micro-politics is an important consideration in project success and in the design of its processes.

Information spheres are thus tools which create surreptitious and safe places where the power asymmetries

outside the sphere are moderated in favor of those within it. Actors within the project domain area then able to use the spheres in the project structure by excluding those who would otherwise be key members of the project domain.

While those within information spheres make decisions about their own information behavior; their decision making does not replace formal decision making within the project itself. As Abernethy and Vagnoni (2004) noted, the decision rights represent formal authority and the deliberate choice by senior management to delegate particular types of decisions to lower-level management. Those within the information spheres have none of this formal authority, apart from that they hold as individual officers. Crucially, within the sphere this authority is not blunted by those outside the sphere. So, in seeking to reconstitute the information and knowledge resources available to the project domain (including external sources), participants within the information sphere seek to re-shape the power balance and downplay the importance of referent or legitimate power. As such, this new instrumentality evolves rather than being designed.

An important element of the behavior of the board was information avoidance, to the extent that individuals that acted as information intermediaries (the project team) were explicitly excluded from the project board. Information avoidance on the basis that provision of information by the project team at this stage of development may lead to the delivery of politically “uncomfortable” information, helped to create the information sphere. Most studies of information behavior focus on the benefits of acquiring information and many, with the notable exception of Wilson (1999), do not consider that information-seeking will not take place in scenarios where knowledge is lacking (Ellis, 1989; Kuhlthau, 1993). Where it is considered the literature is fragmented (Savolainen, 2007). Whilst the concept of avoiding information has a long history in the literature on communication and psychology (Case et al., 2005) avoidance is generally still under-theorized within the information behavior literature (Choo, 2017).

The concept of information spheres clearly resonates with two theories of information behavior: Chatman’s “small worlds” theory and Burnett and Jager’s concept of information worlds. Both theories emerged from very different contexts, those of the information poor (Chatman, 1999) and the macro- and micro-level information behavior that shapes political and social discourse in democratic societies (Burnett & Jaeger, 2008). They both, however, illuminate the significance of the collective on behavior. Chatman’s “small worlds” theory arose from her observations that social barriers to information

access were not being fully recognized within the literature (Chatman, 1999).

Chatman argued that an individual's perceptions within a framework of shared social norms, means that information may not actually be unavailable to the individual or group but that they perceived it as being of little or no assistance (Chatman, 1999). Thus, while outsiders may withhold information privileges it is the insider whose self-protective behavior leads to the repeated separation of the information poor from the information they need (Chatman, 1996). While this infers a certain degree of distrust of information from others, as they cannot see the world from their perspective, Chatman posits that as social beings we invariably adopt social networks with those around us sharing similar views (Thompson, 2009). Trust is also a central tenant of Chatman's small world's theory where the members of the group share similar concerns and meaning is shared because of the customs and language they uniquely share (Dankasa, 2016).

The value of Chatman's approach to small worlds was to provide more substantive development and refinement of works by previous scholars. This is particularly relevant in the case of Schutz (1972) whose life-world was refined by Chatman and by Wilson's (1983) notion of cognitive authority in which people construct knowledge based on personal experience and trusted others who within a given sphere of influence in which they can speak with authority (Savolainen, 2009). Cognitive authority has a number of implications for information behavior and the trust we place in information sources. In particular when working outside of one's comfort zone and coming into to contact within information sources whose veracity cannot be verified through previous experience (unlike case one where they worked together) other sources of validation have to be found. In dynamic context, such as project team where new knowledge is being reconstructed and appraised by a variety of interested parties finding this sense of what is right is more challenging and even where quality control mechanism exists these also require a degree of familiarity before acceptance. Thus, trust in others and their sphere of influence is important in, as are their own norms, values, and information ontologies.

Burnett and Jaeger's (2011) theory of Information Worlds builds upon Chatman's work, together with that of Habermas' Lifeworld, to address the following challenges: Chatman's perceived narrow focus on only the smallest of worlds, all information activities are socially situated within and shaped by social factors, in addition to cognitive factors and the information needs of the individual. Information worlds overlap and interact with each other and the differences in perception that might lead to conflict. Information worlds introduce the notion

of boundaries defined by information values, renamed from Chatman's world view. These information values are agreed upon by those within the world but these values may differ. While information world theory does not deny the importance of individuals or their preferences, it does privilege social over personal information values, as individuals act within a set of norms and values that are social in nature—but they are never fully free to act.

The research outlined in this paper identified the emergence of hidden activity that remains, unobserved by most outsiders. Within functional teams where there is generalized trust proximity between norms and values which encourages collective actions and where ontological ambiguity is limited, project teams exhibit many of the characteristics described by Chatman's "small world" theory (Chatman, 1991) and follow the project world's extant norms of information access and exchange (Burnett & Jaeger, 2008). Where there is ontological diversity and tension between the politics of the parent and project organizations, the coherence required for small world evaporates within formal structures and actors have to enable information exchange through alternative structures to maintain information values and the cognitive authority of their peers. This is enabled by the co-construction of a new instrumentality shaped by the project and shared values unfettered by organizational hierarchies. Information spheres are thus transcendent and represent this new instrumentality by enabling discrete informational values outside of existing structures or processes.

6 | CONCLUSION

In this paper, we illuminate the sometimes problematic nature of information exchange between experts and politicians providing a view of their behaviors and practices which are normally hidden from sight. Exploring this phenomenon as a form of CIB the research provides a novel explanatory and descriptive concept: the information sphere. Underpinning this construct are findings which challenge the paradigmatic consensus that the dynamic process of generating new information and then reconciling it to the information needs of the organization is overt, open, and aligned behind a singular objective (González-Ibáñez et al., 2012). Our findings suggest instead that, in this politicized context, the process of alignment is often covert, closed, and that alignment is required with multiple positions that are highly subjective. The creation of information spheres was, in this case therefore, an overtly political act allowing transparency within the sphere to explore ideas, collaboratively seek

and share information without observation or sanction (in the case of the project team) or protect and maintain a particular world view and the information basis for pre-determined decisions (in the case of the project board).

This also adds to our knowledge by providing evidence, which suggests of CIB can occur over time but that collaboration is bounded and limited. The research area of CIB has been described as being both relatively young and as still searching for its main concepts and models (Hertzum & Hansen, 2019). This work may, therefore, provide further areas for research and suggests the need for definitional adjustment.

This work also provides further evidence of information behavior within a particular context: that of the work place, a context in which there is a need for new theories and models (Byström et al., 2019). The concept of information spheres allows researchers to observe, analyze, and report on matters within work which normally remain hidden.

While there are a growing number of researchers using activity theory to understand work, technology, and information behavior (Dennehy & Conboy, 2017; Iyamu & Shaanika, 2019; Kelly, 2018; Li et al., 2019) this also provides a methodological contribution by combining both activity theory and the heuristic of personal construct theory to understand norms and values.

This article was started by Franklin and David and completed by David and Tom after Franklin's untimely death in 2020. This article is a development of a conference paper presented at ASIS&T SIG-USE in 2019 entitled Information Spheres: CIB within project teams (Riley & Allen, 2019). The paper is based on Franklin's PhD research.

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