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Abstract

Patient-centered care (PCC) in French hospitals has become highly topical. As it challenges people's roles and positions in the health care system, it generates tensions that can produce paradoxes when elements perceived as contradictory are both present and persistent. However, the actors most often learn to deal with them. The aim of this research is to examine how actors cope with the paradoxes created by PCC. Linking the theory of paradox to the concepts of situated action and object agency, this paper studies the orthopedics department of a major PCC public hospital in Paris based on shadowing, interviews and secondary documents. It highlights three ways in which technical objects play a key role in managing belonging, learning, organizing and performing paradoxes generated by PCC: enactment, mediation and interpretive flexibility. It thus extends the dynamic equilibrium model of organizing in the theory of paradox developed by Smith and Lewis (2011).

Keywords

Patient-Centered Care; New Public Management; Hospitals; Paradoxes; Object Agency; Situated Action.

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[1] For anonymity reasons, the authors indicated X, Y Z. The exact names will be added if the article is published.

1. Introduction

Patient centricity and patient-centered care (PCC) have become major concepts in health care. According to Robbins et al. (2013), "patient centricity is a dynamic process through which the patient regulates the flow of information to and from him or her via multiple pathways to exercise choices consistent with his or her preferences, values, and beliefs." Patient centricity is now essential in drug development (Lowe et al., 2016), health care information systems (Paul et al., 2012), cost-effectiveness analyses (Goto et al., 2017), improved patient adherence (de Kok et al., 2018), and clinical research (Lamberti & Awatin, 2017). While patient centricity is customer centricity adapted to the field of health care (Palmatier et al., 2019), the concept of PCC has a narrower focus. It is defined as "providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions" (Institute of Medicine, 2001, p. 6). This care is "holistic, empowering and tailors support according to the individual's priorities and needs" (Royal College of General Practitioners, 2014, p. 4). It modifies the interaction between patients and their health care providers and thus between health care providers, as it implies the active involvement of patients in decision-making. In fact, patients are encouraged to make choices that are best suited to their specific circumstances (Levinson et al., 2010).

Still recent in France, this focus on the patient was pushed by the Ministry of Health. Over the last decade, it has led to a major transformation of French hospitals. They must now encourage patient and family collaboration, take into account their preferences and environment and provide clear and understandable information, education and support in addition to care. However, the implementation of PCC in public hospitals opposes customer centricity with health care values and rules, as well as with the strict normative and budgetary constraints inherent in bureaucratic organizations. As a result, it confronts hospital staff with multiple dilemmas and tensions.

Still, in most situations, health care staff are able to overcome these challenges by adopting locally effective behaviors that both support and empower patients. **How do hospital staff combine conflicting logics? How do they manage to reconcile them?** As illustrated in Figure 1, this paper studies tensions relating to PCC implementation as a set of facts that, although defying logic, can find acceptable outcomes, namely, paradoxes.

Insert Figure 1

According to Smith and Lewis (2011), the theory of paradox provides a particularly relevant framework during times of change and in complex and ambiguous environments, which is precisely the case for health care institutions (Beech et al., 2004). While the organizational science literature has traditionally focused on the analysis of human actors' games and the compromises they are compelled to make out of strategic interest, it seems interesting to study the role of objects, which are increasingly present in the hospital world. Therefore, the circumstances at the orthopedics department of a large public hospital in Paris will be examined, linking three concepts in an integrative theoretical framework: paradoxes, situated action and object agency.

The rest of this article is organized as follows. Section 2 provides a conceptual framework. Section 3 details the research methodology. Section 4 presents the findings, discussed in Section 5. The conclusion in Section 6 highlights the theoretical and managerial contributions, as well as the limits and avenues for future research.

2. Theoretical framework and relevant concepts

The literature review is primarily based on the theory of paradox (2.1.). It shows its relevance to study PCC but also some limitations in regard to explaining how tensions are actually managed. This leads us to broaden the theoretical perspective by including the situated action (2.2.) and the interactions between objects and individuals within this situated action (2.3.).

2.1. Theory of paradox

2.1.1. Paradoxical tensions

The implementation of PCC has ushered in a major change for hospitals. Research highlights the difficulties of the implementation process and the paradoxical nature of organizational change. Success appears to depend on stakeholders' ability and willingness to accept the complexity and manage the paradoxes inherent in organizational change. However, this situation is rarely viewed as paradoxical. Rather, stakeholders experience it as a logical contradiction or reduce it to a simple conflict of interest. They seek to impose one point of view on another without realizing that they will invariably find themselves trapped in the same dilemma.

A paradox involves an apparent contradiction between two elements that are mutually exclusive yet simultaneously present. The purpose of this section is not to develop the concept and characteristics of paradoxes in detail, as Watzlawick et al. (1967) and Quinn and Cameron (1988), among others, have done sufficient work in this regard already. It must simply be noted that when faced with a paradox, it is a question not of choosing the "best option" but of understanding the relationship between the elements of the paradox, accepting its underlying logic, and experimenting with the permanent balancing of its polarities. Once this is done, the complexity is recognized, and the paradox is taken onboard. In contrast, when the actors decide to reduce one pole in favor of the other and, in this way, eliminate the paradox, they are not dealing with the latter in a meaningful way. The past decade has seen the emergence of a new approach with the theory of paradox: by having A and B simultaneously coexist and, thus, favoring "and" over "or" (Calabretta et al., 2017).

Smith and Lewis (2011), two reference authors in this field of research, identify paradoxes of (1) belonging (identity and interpersonal relationships), (2) learning (knowledge), (3)

organizing (processes), and (4) performing (goals). The first paradox relates to identity tensions between the individual and the group. The second arises from change and innovation, creating temporal ruptures between the past and the future. The third stems from tensions in managerial approaches—for example, the opposition between collaboration and competition. The fourth type results from tensions between stakeholders and shareholders because they have, for example, opposing financial and social objectives.

2.1.2. Managing paradoxes in organizational life

Paradoxes are uncomfortable for organizations and individuals who are looking for coherence. Although paradoxes cannot be fully resolved, research shows that paradoxical tensions can be managed through different strategies.

Poole and Van de Ven (1989) classify four generic responses: acceptance of the paradox and related contradictions; spatial separation, for instance, via different organizational units; temporal separation, such as alternating periods of incremental and radical change; and synthesis, when a new perspective is adopted to overcome the paradox in a dialectical thesis–antithesis–synthesis approach. More recently, these strategies have been further developed (e.g. Andriopoulos & Lewis, 2009; Lewis, 2000; Lüscher & Lewis, 2008; Michaud, 2014; Smith & Lewis, 2011). Thus, in the strategies of acceptance, the actors consider the paradox an insoluble enigma and learn to work through it (Clegg et al., 2002; Lewis, 2000; Lüscher & Lewis, 2008). Smith and Lewis (2011) attempt to integrate these different conceptions into their "dynamic equilibrium model", and (initially latent) tensions become salient as a result of environmental changes and/or stakeholders' awareness. From there, these tensions can initiate either a vicious circle (inducing defensive reactions) or a virtuous circle (by accepting the paradox), leading to the implementation of resolution strategies in an iterative process of splitting and integration and, eventually, long-term success. Building on this work, Jarzabkowski et al. (2013) propose

a process model clarifying the recursive relationship between different types of paradoxes and the cumulative impact of paradox responses over time.

2.1.3. Contributions and limits of the theory of paradox for patient-centered care

The theory of paradox posits that the sustainability of organizations lies in their ability to manage somewhat contradictory demands (Ambituuni et al., 2021; Lewis, 2000; Lewis & Smith, 2014; Smith & Lewis, 2011). This suggests that dilemmas should not be seen as irreconcilable contradictions or alternatives from which the best option should be chosen but as paradoxes that need to be managed. It identifies different types of paradoxes, as well as generic coping strategies.

However, it does not provide a detailed understanding of how these coping strategies are implemented in practice or how the working teams manage the tensions in the course of action. Moreover, its focus remains primarily cognitive (e.g. Miron-Spektor et al., 2018), based on individual perceptions or relational dialog. Finally, its applications are mainly focused on managers (e.g. Lüscher & Lewis, 2008), if not top executives (Smith, 2014), far from our research field. It therefore calls for theoretical and empirical complements. Indeed, we postulate that paradoxes experienced at the operational level must be analyzed in real situations where they appear—in other words, in the context of situated action.

2.2. Embedding paradoxes in situated action

There are many different approaches relating to situated action, yet they all converge in terms of the problems they address and the research interests they pursue. Most of them focus on the link between action and cognition in context. Situated action belongs to modern learning theories (Lave, 2008). It emphasizes the emergent and contingent nature of human activity. The unit of analysis for situated action is neither the individuals nor their environment but the

interaction between the two: “the organization of situated action is an emergent property of moment-by-moment interactions between actors, and between actors and the environments of their action” (Suchman, 1987, p. 179). The material and physical environment is seen as a resource for action that amplifies actors’ capacities with regard to their intentions.

While research on situated action takes into account the material aspect of situations, most does not dwell on the properties of these objects. It focuses on human actors alone and hardly mentions the role that objects may play, even though research shows that objects contribute to organizational change (de Vaujany et al., 2015; Latour, 2005). Therefore, it does not permit us to reflect on how objects could contribute to managing paradoxes. The literature on object agency addresses this gap.

2.3. Object agency

For a long time, social analysis has ignored the role of objects in collective action. Generally, an object is defined in opposition to a subject. It is a concrete thing, supposedly inert and outside thinking beings, which specialists in organizational science have little inclination to study. However, the world of organizations is not populated by active subjects and passive objects. It is driven by interactive relations between social subjects and material devices, as shown by the sociology of translation, a major stream in the study of science and technology (Latour, 1987, 2005). One of the proposals of this approach involves a symmetrical treatment of human and nonhuman actors that rejects any distinction between the social and the natural. These two kinds of entities are referred to as “actants,” a concept that describes any entity acting within the framework of a sociotechnical network of humans and nonhumans. Under the “principle of symmetry,” which means not taking a side in the nature/culture and social/technical division, the actant is defined based on how it behaves (its performance) rather than its natural or artificial essence. Nonhuman actants can be natural or artificial (artifacts). This paper focuses on the

latter category. The term “technical object” will be used in its broadest sense to refer to artifacts such as machines, architectures, instruments, or management tools. Classifying the latter as an object can be controversial. However, a dashboard, similar to an evaluation grid, has structures and headings—in short, a material existence (Chiapello & Gilbert, 2019).

Stating that objects have agency means they exert an action—they are endowed with a capacity to act on their environment and to modify it. How to account for the agency of technical objects? The literature, in particular, research on boundary objects, provides varied and complementary answers.

The concept of boundary objects originates in the sociology of translation. Using this theory, Star and Griesemer (1989) address the issue of coordination around research work. They underline the importance of “boundary objects” in the broad sense of the term object (standards, benchmarks, workflow processes, concepts, physical objects) to permit agreement, coordination and work sharing around an innovation. In particular, boundary objects must have “interpretive flexibility” (Star, 2010): They must be flexible enough to allow each group of actors to keep their own vision of the project and robust enough to enable delegation and work sharing. The concept of boundary objects highlights the need for less rationalized work methods and leaves more scope for flexibility and uncertainty in work coordination. Its use has spread widely in the social sciences, from the study of management to urban planning and the medical sector. This latter area includes, among others, the work of Popham (2005) on the introduction of forms in medical communication, Jensen (2005) on electronic patient records, Broom (2005) on the impact of the internet on the doctor/patient relationship, Allen (2009) and Sullivan and Williams (2012) on care pathways, and Bobillier Chaumon et al. (2014) on how information and communications technologies can improve the quality of life of the dependent elderly in residential home care units.

Research on object agency therefore shows the role of objects in collective action, identifying the functions that objects perform when interacting with humans. In particular, some objects endowed with interpretive flexibility manage to reconcile possibly divergent representations. They could therefore play a role in managing paradoxes.

2.4. Synthesis and conceptual framework

The main theoretical contributions of this literature review are summarized in Table 1. Using the theory of paradox enriched with the concepts of situated action and object agency, our research aims to shed light on the tensions inherent to the implementation of PCC in hospitals and on how these tensions are pacified, not only because of human actors but also of objects interacting with them. This conceptual framework directs us toward a comprehensive approach to situations through a qualitative research methodology based on an in-depth case study (Yin, 2017).

Insert Table 1

3. Research methodology

3.1. Research context: the orthopedics department of a Parisian PCC hospital

The researchers conducted a case study in the orthopedics department of a large public hospital in Paris recognized as a PCC hospital. The choice of the department is justified by the fact that unlike other surgical activities, orthopedics provides strong traceability. The intervention is visible, and continuous monitoring is ensured, in particular by means of radiography. Thus, pressure and uncertainty, a source of tension and paradoxes, arise beyond technical gestures.

Prior agreement was obtained from the head of the orthopedics department, the hospital management, and all the informants (staff and patients). The conformity of the methodology

and the purpose of the research were approved by the management of the academic institution and the research laboratory. All the data collected was anonymized.

The department under study is a referral center for bone oncology, sepsis, and pain. It has 160 medical, paramedical, and administrative staff members. The department also offers many other services (anesthesia, operating room, social assistance, supportive care, etc.). In total, approximately 200 people work for the department and report to different hierarchies. There are 75 beds, and approximately 4,000 operations take place every year. The department occupies five floors in the same building. One hospitalization room is dedicated mainly to trauma and osteoarticular infections and two others to scheduled operations, one of which is a "weekly hospital" where patients arrive on Monday and Wednesday mornings for surgery on the same day and are normally discharged on the Wednesday and Friday of the same week. The weekly hospital is closed over weekends. A postoperative geriatric unit (Upog) located in a neighboring building is dedicated to providing care to patients over the age of 75 years after their operations. There is also a multidisciplinary outpatient surgery unit (UCA), including orthopedics, which is managed separately on a neighboring site.

The case study was conducted as follows. After multiple contacts via a physician external to the hospital belonging to the researchers' network, the researchers interviewed the clinical pharmacist of the orthopedics department in September 2019, who then introduced them to the head of the department. They obtained permission to immerse themselves in the environment for three weeks in January–February 2020—in other words, just before the outbreak of the COVID-19 crisis at the European level. The researchers were dressed in the hospital's white coats and introduced by the head of the department at the surgical staff's morning meeting on Monday, 27 January 2020.

3.2. Data collection

The data collection was primarily based on shadowing, a research method that involves "following selected people in their every occupations for a time" (Czarniawska, 2007, p. 17). Because of its longitudinal and nonintrusive nature, shadowing is well suited to understanding hospital care practices. Field notes and audio recordings complemented the observation.

Multiple data sources were employed to increase the validity of the study (Gibbert et al., 2008; Goffin et al., 2019), namely, interviews, field observations and secondary data. During the immersion phase, the researchers alternated in an iterative process of mostly individual or sometimes group interviews (two to four people to facilitate the internal organization of the department) and observations with "prompted verbalization"—since most mental activity is unobservable, the researcher induces the subject to verbalize what is going on (Hoc, 1984). The researchers were careful to build trust, which gave them great freedom in terms of access to places and people who willingly confided in them. In addition, the researchers gathered secondary data, such as documents made available to patients and internal and academic documents provided by the interviewees. This information gave a better understanding of the complex environment, offering different perspectives.

In total, the research team collected 44 hours of interviews with 50 people, 25 hours of observation of situations and 294 pages of documents from the informants (see Table 2 for details).

Insert Table 2

The semistructured interviews enabled "to obtain both retrospective and real-time accounts by those people experiencing the phenomenon of theoretical interest" (Gioia et al., 2013, p. 19). Most were conducted by two researchers: one interviewed using a guide, and the other recorded verbal and nonverbal reactions. The interview guide had four themes. For health professionals, these themes were (1) career path; (2) main changes in the profession; (3) specific

characteristics of the department in comparison with other departments and other public, private, or foreign hospitals, depending on the informant's career path; and (4) vision of the future regarding practices and patient relations. For patients, the guide was also divided into four themes: (1) presentation; (2) reasons for receiving care; (3) feelings about the care received; and (4) areas for improvement. The individual and group interviews were recorded with the consent of those concerned and transcribed in full (663 typewritten A4 pages in total). The observations followed a grid including the start and end times, the context, a description of the places and protagonists, and the interactions. Detailed notes were taken, sometimes with photographs of the locations (without the interviewees) when possible.

3.3. Data analysis

During the immersion phase, the researchers regularly shared their interpretation with the two persons who coordinated the field (the clinical pharmacist and the external physician). To gain a deeper understanding, they subsequently adapted the list of people to be interviewed and sessions to be observed. This also helped them start conceptualizing the findings.

After the immersion phase, the data were analyzed through an iterative process between the data gathered and the researchers' emerging theoretical understanding, following a grounded theory approach involving open, axial and selective coding (Strauss & Corbin, 2014). An initial open coding was carried out to analyze in depth the transcribed interviews, the field notes and the secondary data. The researchers then followed Gioia et al. (2013)'s three-step process to build the data structure. (1) They grouped the codes into first-order themes expressed in the informants' voice, applying axial coding (Strauss & Corbin, 2014). (2) They then identified second-order themes at a more abstract level. (3) Finally, they returned to the literature and were able to bring to light aggregate dimensions. Figure 2 illustrates this process for the first dimension, "PCC, a paradoxical concept".

Insert Figure 2

The same process was followed for the two other dimensions, “Multiple paradoxes around PCC” and “Agency of objects in managing paradoxes”.

4. Findings

4.1. Patient-centered care, a paradoxical concept

The data show that, while patient-centered care is given for the medical, paramedical and administrative staff, it generates ambiguities on the caregiver and on the patient side.

4.1.1. Putting the patient at the center, an approach that gives meaning

All of the members of staff who were interviewed put the patients at the top of their list of priorities, which the observations confirmed. This priority is directly related to the staff’s job as caregivers, as it gives meaning to their job: “We have a very rewarding job because we change people’s lives: We get them back on their feet, we fix them” (medical staff). Good care requires having a relationship of trust with the patient, as emphasized by all the informants: “patients who trust us anyway and follow us, we could take them anywhere” (medical staff). This relationship with the patient is a real source of energy. It gives purpose and sometimes compensates for a perceived lack of recognition, especially among paramedical staff: “It’s a very tiring job. It’s very demanding, and there’s no recognition. I can bear it thanks to the patients: They’re the ones who thank me” (nursing staff).

The prominence of PCC for the staff is further reinforced, as it is one of the department’s core values, recognized under the label “Welcoming for better care”. The staff is proud to carry out this mission as part of the cutting-edge service they offer, which is renowned for the quality of care, teaching and research: “We operate those whom no one else dares to operate on; we have

incredible profiles: Here we've just implanted a hip prosthesis in a 104-year-old patient" (nursing staff).

4.1.2. Ambiguities around patient-centered care on the staff side

While patients are an undisputed priority in the department, some interviewees mention ambiguity in the purpose of PCC. For those who practice PCC (the medical and paramedical staff), they see it as a necessity. However, they wonder whether those who advocate it (the direction of the hospital, the politicians) give the same meaning: "It can also be a decoy. (...) The concept of patient centricity is sometimes misguided: When the aim is to guard against lawsuits, the relationship loses its authenticity" (medical staff).

It raises the question of what taking care of a patient truly means, as illustrated by the situation of consultations. On consultation days, each surgeon sees approximately 50 patients; to speed up the pace, they sometimes use several consultation rooms and spend only approximately 10 minutes with each patient. While the surgeons believe it is short, they consider it gives more patients a chance than if they saw them for longer but with larger delays. In the end, for them, this is basically what PCC is about.

> "If I saw patients in Canada the way I do here, they would immediately file a complaint of abuse. Because they would feel you can't just spend 10 minutes with a patient when you tell them they have cancer and you're going to cut off their leg. (...) But for the patient, it's better to be in France than in Canada. (...) I prefer a five-minute consultation that I have within two weeks and that is effective instead of a 45-minute consultation that I have in six months, even if there's a bit more pathos." (Medical staff).

4.1.3. Ambiguities around patient-centered care on the patient side

PCC also generates difficulties with patients. All the patients interviewed felt they were 'the focus of attention" and expressed great admiration for the surgeons: "The surgery changed my life! (...) I see doctors today as if they are demigods. After God come the doctors" (patient). However, the observation of consultations and visits has shown that some patients tend to take advantage of it and seek to monopolize caregivers' attention by increasing the number of requests. It is worth mentioning that one patient who was interviewed had a slip of the tongue and referred to the nurses' office as the "hotel reception". This point was prominent in the discourse of the paramedical and administrative staff: "People don't respect anything anymore; they come here and make demands; (...) they don't bring any belongings... because for them, we're welfare, so we owe them everything" (secretary).

Moreover, the informants felt that patients had become more aggressive in recent years. This tension can be inferred from the signage in the department, such as the red notices on each floor indicating that "any physical and/or verbal aggression toward hospital staff on duty will be prosecuted to the full extent of the law." In the basement, on the doors of the consultation boxes, signs stipulate that "patience is a virtue" and invite the patients to be courteous; if "doctors are sometimes late for their consultation" (1 to 2 hours, according to the surgeons and observations), "the reception staff cannot be held responsible."

Therefore, the notion of PCC sometimes requires reframing. As the head of department underlined, "patients have to be reminded that they cannot only claim rights but also have duties."

4.2. Multiple paradoxes around patient-centered care

The interviews and observations revealed deep and persistent tensions around the PCC, including all four categories of paradoxes identified by Smith and Lewis (2011).

4.2.1. Belonging paradoxes

Belonging paradoxes are linked with identity and interpersonal relationship tensions in Smith and Lewis's (2011) typology. Two particular situations illustrate them, the first relating to private patients and the second relating to the operating room.

Private patient development within the public health care system raises tensions in the staff. These "VIPs" are "called in and followed around by dedicated surgeons" in a secretary's words. It creates a dissonance with the mission of welfare, where "we must treat everyone, no matter who they are" (medical staff). The medical staff, health care executives and some senior nurses see it with pragmatism: having private patients is a way to limit the loss of physicians to private clinics and thus keep talents in the public hospital. However, for most nurses, health care assistants and secretaries, it is a betrayal of their mission: "I've always worked in the public sector, where everything is open to everyone. And I come in this department where there are VIPs. (…) Then you think: "I'm working for the public healthcare system, aren't I?" (Secretary). Caregivers, however, indicate that they do not differentiate between public and private care, as observed during consultation and hospitalization room visits. A surgeon states that "it's like traveling on a train: Regardless of whether they are in first or second class, everyone arrives at the same time, at the same place, in the same way, except that it's a little more comfortable to know that I take care of patients from A to Z – that's it." However, the paramedical staff often perceives these patients as more demanding.

The second situation illustrates relationship tensions within belonging paradoxes. During an operation, the surgeon tapped his foot and verbally assaulted the operating room nurse: "You piss me off, you piss me off!" And yet, right after the operation, this resident who had been yelled at, said: "this surgeon is adorable, the nicest of them all." The operating room nurse, who was visibly affected by the incident during the operation, commented the next day as follows, which shows as usual such situations are and how much worse they can be:

> "Surgeons are like big children who are stressed out in the operating room. Like yesterday, they can say "asshole" to a resident, but actually, no, you can't take it at face value. There are often two sides to surgeons: the operative side and the outside. This surgeon is very nice and has a heart of gold."

Theses belonging paradoxes not only create real suffering—a word that is often uttered—but also inefficiencies. Surgeons seem to lose precious information as they hardly exchange with the paramedical staff—due to lack of time according to surgeons, by lack of consideration according to paramedical staff. Specifically, "healthcare assistants are invisible to surgeons" (healthcare executive). Nevertheless, they could provide important elements, as one of them explains.

> "Nurses and healthcare assistants, in particular, are the closest to patients, especially because we have 'intimate' (for lack of a better word) moments with them when we wash them. When you're naked in front of someone, there is a kind of bond. I think it's a real shame there is no connection between doctors and healthcare assistants. (...) Surgeons lose half the info by not talking to us." (Health care assistant)

Thus, individuals are torn between their medical mission toward the patient, which is sacred to them, and what is experienced as a lack of managerial consideration.

> "The conditions for patients have improved, but the conditions for caregivers are miserable. They suffer due to the failure to take the teams' words into account, as well as hierarchical problems. I want the patient to be the focus, but I want the caregivers around them, the staff around them, to be considered as well." (Medical staff)

The focus on PCC underscores the little attention that all members of staff claim to get – surgeons, from hospital management; doctors, from surgeons; residents, from surgeons, doctors, and nurses; paramedical staff, from medical staff; nurses, from healthcare executives; and healthcare assistants, from nurses.

4.2.2. Learning paradoxes

The tensions around the development of the weekly hospital and of the outpatient surgery unit stress how innovation modified the relationship to time, demonstrating learning paradoxes. Indeed, the evolution of materials and techniques, the initial preparation of patients, and pain management have considerably reduced time spent in the hospital. A health care executive explained that "twenty years ago, hip replacement meant staying in the department for a fortnight; and for knee prostheses, patients would stay there for three weeks and have enormous pain". Thanks to injections performed during the operation, pain has decreased tremendously, and the patients can now leave on the same day or the next day.

However, because of this compression, the work pace has increased dramatically for paramedical teams and leaves them less time to get to know the patient. Somewhat sarcastically for the nurses and health care assistants, a surgeon reckons that "in the past, when a patient stayed for 10 days, it meant one day of work and nine days of greeting, but now, when they only stay for one day, they demand a lot of attention all the time, particularly with the outpatient department." As for the paramedical staff, they sometimes consider this speed to be at odds with their idea of care. Many of them express frustration with the lack of time and resources, which prevents them from being as close to the patient as they would like to be, especially since "things don't necessarily work out the way we learned in school" (paramedical staff). A nurse thus stresses that "time is what's missing the most. We'd like to sit down with all the patients and talk to those who need it. That is what is missing in our job."

In contrast, the surgeons who adopted the new techniques are very proud of the weekly hospital and of the outpatient surgery unit. For patients, based on the observations and interviews, many seem to appreciate the shorter hospital stays. Precisely because of technical progress, the

environment can be de-medicalized. Consequently, patients do not perceive that they are undergoing a serious operation and have less anxiety.

> ‘One thing people are very happy about is the outpatient surgery unit. Patients love that because they’re not really hospitalized. It’s a bit like going to the swimming pool, you see. You arrive at the reception desk, they give you a little locker with a key, you go to the locker room, they get you to the operating room, they take you back to the recovery room, and then there’s what they call the lounge, with armchairs, where they serve you a little snack, and then you pick up your belongings and leave.’ (Medical staff)

4.2.3. Organizing paradoxes

Managing this time pressure requires flawless organization, which creates organizing paradoxes. Reducing the time spent in morning and afternoon shifts makes the collaboration between teams more complex. This is particularly obvious when comparing the different units. Continuity of care is all the more difficult to ensure in hospitalization rooms with mobile teams, which have to change wards and schedules to ensure staff versatility and flexibility in workforce management, as opposed to the postoperative geriatric unit (Upog), the weekly hospital aisle or the outpatient surgery unit (UCA), which all have permanent teams. This creates many tensions between established protocols and agility, directive orders and cooperation, centralization and empowerment, vertical hierarchy and cross-functionality, and specialization and multiskilling. A nurse explained that she had burnout when the mobile team was set up five years before, as twenty of her colleagues left within six months: “With the big team, they broke everything up; they called it versatility. (…) When there’s too much versatility, no one cares about.” She was then able to move to the permanent team of Upog, where she feels she recovered a much better quality of work and efficiency. Upog is very often cited as an example of good organizational functioning, as it fosters teamwork, which reduces belonging paradoxes. As a health care

assistant explained, “the geriatricians are there virtually every day, all day long. (…) For treatment, if there are problems, the doctors can help us. There is teamwork, especially since we have permanent nurses there. The patients definitely feel it.”

Paradoxically, the fact that these wards are permanent makes them more agile than mobile teams because the paramedical members of staff are empowered, communicate better, and can self-manage. A nurse of the weekly hospital aisle confirms it: “We take care of ourselves, we organize our vacations among ourselves, we communicate. Having a smaller, permanent team helps. When you change hospitalization room every day, you don’t get to know your patients.” As a result, a new way of organizing is in the works to revert to permanent teams of nurses and health care assistants in the whole department, who will be assigned to a specific care unit. This should “personalize more, restore ties, and make the wards more responsible” (health care executive). However, this could feed into belonging paradoxes.

> ‘It will create clans, it’s obvious! They’ll say, for example, the weekly hospital aisle didn’t do it. The second floor will say they’re taking it easy on the fourth floor. The fourth floor will say, “Well, we’re overwhelmed...”’ (Health care executive)

4.2.4. Performing paradoxes

The aim of moving to permanent teams in the department is also to limit the many departures of caregivers, which the researchers noticed during their three weeks of observation. This leads to an examination of performing paradoxes.

All the members of staff emphasize the difficulty of reconciling economic requirements with quality of care, which is also connected to belonging paradoxes, as expressed by this surgeon: “The problem with the administration is that we often have people with a business-like approach and so on. If we endanger patients in any aspect of the process, it’s unacceptable.”

One indicator that keeps coming up in many interviews, documents, and observations is the average length of stay (ALS). Indeed, reducing the ALS leads to big savings. The cost, €1,300 per day, is displayed on every floor. A secretary confides that "the expense sheet is the only thing I left on the window so that the patients realize..." Tracking the ALS is then strategic. A geriatrician explains that he himself takes the trouble to calculate the ALS in his unit "because sometimes the administration comes up with completely absurd figures. (...) I have to be able to oppose their figures."

Consequently, the department had to adapt its practices to reduce the ALS, which can also improve patient care and make it possible to overcome the paradox between cost and care in a synthesis approach. Numerous innovations have been deployed in this respect, including the creation of a clinical pharmacist position in the department. Customizing prescriptions reduces complications and, therefore, the ALS. The dietician established a protocol to avoid malnutrition, which touches forty percent of the patients coming to the hospital and "means much longer scarring, more complications". The goal of the septic project in the unit receiving patients with severe bone infections for weeks or months is to "reduce the length of stays and increase the quality of care" (health care executive). Thanks to the care pathway nurse, surgeons are "satisfied with a single preoperative consultation because it protects them against the legal risk of a lack of information, the primary cause of conviction," while making life easier for caregivers and reducing the length of patients' stays. By taking into account the multiple pathologies of elderly patients and already anticipating their discharge to a rehabilitation center when they are admitted, Upog improves their chances of recovery and reduces ALS, as shown in scientific communication on Upog. "In fact, everyone benefits, including the physician and, above all, the patient" (medical staff).

This highlights the role of objects in managing paradoxes.

4.3. Agency of objects in managing paradoxes

Immersion in the service environment showed the role that certain technical objects play in managing paradoxes. The first one, the red badge, reveals one of them. The three others—ORBIS software, T-shaped cardboard cards for metal boards and enhanced recovery after surgery (ERAS)—contribute to resolving the four types of paradoxes.

4.3.1. How a piece of plastic can reveal a paradox: the red badge

The red badge worn by medical staff, as opposed to the paramedical staff's blue badge, is a revealing indicator of the belonging paradox. Observations within the hospital, particularly in the cafeteria and the wards, found that the red badge had a certain aura for both patients and staff, some of whom also spontaneously mentioned in the interviews.

> "The red badge is like magic. We don't necessarily feel it, but the nurses do... Here, they know their job very, very well. They're extremely competent in orthopedics and don't really need us to make good decisions. If a patient asks them a question, they're going to answer it very well, but the patient might not believe it. We're going to say exactly the same thing, but since we have a red badge, it will be heard differently." (Medical staff)

While it does not resolve the paradox, it is a first step toward accepting it.

4.3.2. How a software can resolve paradoxes: ORBIS

ORBIS is a single patient record database system deployed by the university hospital group. It shares its patient records among all its hospitals, making it the largest computerized patient record system in Europe. Thanks to ORBIS, certain functions on the periphery may receive some attention in the department again in a double resolution of identity tension (belonging paradox) and temporal tension (learning paradox). Thus, every day, physiotherapists log into the computer and check the surgery dates to identify which patients they should see to do the

first lift. They then just have to check with the nurses "that the blood pressure is good enough for the patient to stand up." This saves time for the nurses while demonstrating their added value.

On the medical side, consultation observation revealed that surgeons often use the time spent entering reports or printing prescriptions to give their patients time to digest sometimes technically and emotionally complicated information. "When we see they haven't understood very well (…) and we've been talking in a vacuum for five minutes, I type something on the computer, (...) I wait for them to speak again" (medical staff).

ORBIS is also a means of facilitating communication and protecting against legal exposure through traceability, thus managing both organizing and performing paradoxes. A nurse explains that to protect against complaints, they write patient statements in the computer, detailing "when they threaten us, when they attack us, when there is a conflict".

ORBIS thus helps manage all four kinds of paradoxes.

4.3.3. How an old tool can resolve paradoxes: the T-shaped cardboards

More surprisingly, the cardboard T-cards for metal boards also resolve some of the paradoxes. They include the names of hospitalized patients and contain color codes according to the type of patient, surgeon, pathology, private status or not and are placed on each floor in metal boards that indicate the different rooms. A position-of-care pathway controller has been created to optimize bed occupation in real time. Despite their status as a health care assistant, this person is in the first position on the surgical staff every morning and is on first-name terms with the surgeons, which resolves the belonging paradox. This individual can anticipate patients' movements during the meeting to better deal with emergencies at night. This saves considerable time for teams and health care executives and helps resolve the learning paradox. After the staff's morning meeting, placing the T-cards in the metal boards on each floor is an opportunity

to show the cooperation between everyone and to convey to the personnel what was said during the staff meeting, thus helping resolve the organizing paradox. Finally, the optimization of the use of the T-cards has made it possible to increase the department's activity despite a decrease in the number of beds from 120 to 75, which contributed to resolving the performing paradox. Clearly, a tool that is *a priori* obsolete can also lead to innovation. To date, none of the software tested to replace this system has fulfilled this mission as efficiently.

4.3.4. How pathways can resolve paradoxes: Enhanced Recovery After Surgery

Enhanced recovery after surgery (ERAS), which is a pathway for improved rehabilitation after orthopedic surgery that was designed in Denmark by Professor Henrik Kehlet, was deployed in the department by the chief orthopedic surgeon and the chief anesthetist in response to management's demand to close beds and reduce the ALS. ERAS provided a solution to the belonging paradox by breaking down the silos between doctors and management, orthopedists and anesthetists, and medical and paramedical staff. Thus, the leaflet for patients refers to "a multidisciplinary team comprising orthopedists, anesthetists, nurses, healthcare assistants, physiotherapists, dieticians, social assistance, secretaries, and healthcare executives." ERAS has provided an opportunity to organize events designed to motivate and unify the department. One such event took place during the research fieldwork, which was a "huge success", an anesthetist illustrated: "Such events help you to give them feedback and tell them: 'If we've succeeded, it's also thanks to you'."

Second, ERAS resolves learning paradoxes thanks to preparation and with the logistics associated with hospitalization. When patients arrive on the morning of their operation, their file is complete, and they are already prepped with Betadine for the operation. At home, they follow the protocols as detailed in a dedicated care pathway consultation, as well as a booklet they received, and on a phone call from the ward nurse 48 hours before hospitalization. This

preparation makes patients more serene because they know what to expect. It facilitates the relationship with and within the care teams and helps resolve the organizing paradoxes. It also contributes to managing performing paradoxes, as research conducted in the department shows that ERAS speeds up patient recovery. This is what made it possible to develop weekly hospital aisle, where each bed is occupied by two different patients each week, which is "much more profitable" (health care executive). Indeed, "thanks to ERAS, the patient is encouraged to be an actor; it's really beneficial if they play the game: They gain confidence and recover much faster" (nursing staff).

Therefore, ERAS plays a major role in the department to cope with the four types of paradoxes while demonstrating patient centricity.

5. Discussion

This research examined how medical and paramedical staff and patients in the orthopedics department of a public hospital in Paris perceive PCC implementation. In an economically, politically, and socially constrained hospital context, this practice entails dilemmas and tensions.

This paper identifies the paradoxes associated with this implementation and shows that the theory of paradox and the theory of object agency are suitable in a public and health context. Specifically, the hospital department studied is confronted with the four types of paradoxes identified by Smith and Lewis (2011): belonging, learning, organizing, and performing. The staff has been able to implement strategies to manage these paradoxes. Some of them are based on the responses identified by Poole and Van de Ven (1989), such as spatial separation through the creation of dedicated organizational units. For example, the weekly hospital is located in a specific aisle; Upog truly developed when it was able to move to a neighboring building; and the UCA involved the construction of a building on another site and lays claim to its de-

medicalized identity by using soft colors, woodwork, and music. ALS overcomes the paradox between cost and care in a synthesis approach, which is another strategy identified by Poole and Van de Ven (1989).

Nevertheless, coping with the paradoxes identified is as much a matter for technical objects as it is for the human actors' strategies with which they interact. As suggested by Chiapello and Gilbert (2019), the use of the concept of an object is extended to management tools and the ALS. This research identified three ways in which technical objects contribute to managing paradoxes. (1) Some play a role in raising awareness of the paradox, which is the first step toward accepting them: They embody it or enact it, like the red badges with the belonging paradox. (2) Other objects act as mediators, such as ORBIS or cardboard T-cards, which connect the different actors. (3) Finally, boundary objects offer interpretive flexibility that makes it possible to travel between different worlds based on the meaning that each actor attributes to them. In this way, ERAS allows each stakeholder to keep their own vision of the project: a possibility to reduce costs for hospital administration or an improvement in PCC for caregivers coupled with a clinical research topic for hospital practitioners. It has sufficient robustness to enable delegation and work sharing. ERAS has made it possible to set up a high-performance weekly hospital ward around a cohesive paramedical team, which has learned to manage itself and seems far from the disorganization sometimes observed in other wards. Thus, boundary objects seem to be powerful tools to initiate sustainable and adaptive response strategies.

By linking the theory of paradox with the concepts of situated action and object agency, this research reveals three roles of technical objects in coping with paradoxes: enactment, mediation and interpretive flexibility. This is a direct extension of the dynamic equilibrium model of Smith and Lewis (2011) in their theory of paradox. This extends the work of Jarzabkowski et al. (2013) by showing the interaction between the four types of paradoxes. More specifically, this research

enables us to address some of the limitations of the theory of paradox by considering paradoxes in a situated action that takes into account object agency. It is thus possible to represent paradoxical tensions and their mode of resolution in the course of a situated action characterized by the interaction of individuals and objects (Figure 3).

Insert Figure 3

6. Conclusion

This article starts with observations of the dilemmas and tensions faced by health care staff in implementing PCC and the conflicts that can arise from them. It identifies the ways in which staff confront and overcome these conflicts. The research contributions are both theoretical and practical.

From a theoretical point of view, the research first shows that the theory of paradoxes can specifically shed light on situations specific to the health care world. It identifies the diversity of paradoxes surrounding the implementation of PCC and their interaction. It then demonstrates the interest of studying these paradoxes within the framework of a situated action and is not limited to studying generic characteristics of paradoxes and cognitive response strategies. Finally, it enriches the theory of paradox by highlighting the role that technical objects play in the resolution of paradoxes in the course of action: enactment, mediation and interpretive flexibility with boundary objects.

From an empirical point of view, this research provides insights into the implementation of PCC as close to the field as possible. The deployment of PCC in hospitals is a major source of conflict, given the divergence of the opposing logics. Nevertheless, the actors are able to come to an agreement in a relatively pacified atmosphere. This is not exclusively related to direct action on human behavior but rather to the quality of interactive relationships between social subjects and objects. As in other public organizations, the actions of the head of the orthopedics

department certainly contribute to this quality, despite a persistent preconceived idea about the supposed opposition between public and private organizations (Rainey & Bozeman, 2000). However, it also depends on the initiatives of individual actors—not necessarily of high status, as shown by the contribution of the health care assistant in charge of bed management—and the capacity to collectively self-organize.

To study whether and how technical objects help respond to paradoxes, it would be interesting to extend this research to other types of hospitals—outside Paris in France and then in other countries and to the private sector. Complementary quantitative research would subsequently make it possible to build an explanatory model of the relationships between the types of objects and paradoxes caused by the transformation of care pathways in public hospitals. On a more general level, although the role of objects in the management of paradoxes stands out as important, it is neglected in the theory of paradox. It would not be the least of the paradoxes to ignore this role.

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Tables

Table 1. Main theoretical contributions of the literature review

Theoretical resources	Selection of publications	Main contributions
Theory of paradox	Calabretta et al. (2017) Quinn & Cameron (1988) Watzlawick et al. (1967)	Foundation of a theoretical perspective for the study of paradoxical tensions
	Andriopoulos & Lewis (2009) Clegg, da Cuhna, & e Cuhna (2002) Lewis (2000) Jarzabkowski et al. (2013) Lewis & Smith (2014) Lüscher & Lewis (2008) Michaud (2014) Poole & Van de Ven (1989) Smith (2014) Smith & Lewis (2011)	Study of coping strategies in response to paradoxical tensions
	Limits: Primarily cognitive focus, individual-centered applications; response strategies to paradoxical tensions addressed at a very general level => Hence, the concept of situated action	
Situated action	Lave (2008) Suchman (1987)	Study of the interactions between individuals in a situation and their environment
	Limits: Material component of the action recognized but not fully investigated => Hence, the concept of object agency	
Object agency	Latour (1987, 2005) Chiapello & Gilbert (2019) De Vaujany et al. (2015) Star & Griesemer (1989)	Demonstration of the role of objects in collective action
	Popham (2005) Jensen (2005) Allen (2009) Sullivan & Williams (2012) Bobillier Chaumon et al. (2014)	Study of the impact of objects in communication in a caregiving context

Table 2. Details of collected data and average time per interview or observation

38 individual interviews	14 medical staff from all hierarchical levels: 9 orthopedic surgeons (including the head of the department, twice); 3 anesthetists; 1 geriatrician; 1 clinical pharmacist	55 min
	18 paramedical and administrative staff from different hierarchical levels: 6 nursing staff (3 in hospitalization rooms, 1 at Upog, 1 in care pathway, 1 in operating room), 1 health care assistant controlling bed occupation, 1 health care assistant controlling operating room occupation, 5 health care executives (2 in hospitalization rooms, 1 at Upog, 1 in anesthesia, 1 in operating room), 2 medical secretaries, 1 social worker, 1 dietician, 1 physiotherapist	57 min
	6 patients (4 women and 2 men, aged 55–92): 5 in hospitalization room, 1 in postop consultation	21 min
Five group interviews	10 paramedical and administrative staff: 4 nursing staff in hospitalization room, 6 health care assistants, 2 health care executives (Upog and UCA)	60 min
Observa-tions	13 sessions: 3 daily surgery staff meetings, 2 visits to hospitalization rooms (with nursing staff), participation to 1 so-called "big weekly visit" (involving a senior surgeon, medical and paramedical staff), 1 day of consultations with the head of the department, 1 half-day with the health care assistant controlling bed occupation, 5 surgery operations	2 hr
Secondary documents	Documents for the patient: - Leaflet: "Care pathway: Enhanced Recovery After Surgery (ERAS)" - Leaflet: "Preventing the risk of falling: the right footwear" - Complete file on a scheduled operation (information on hospitalization and anesthesia, admission documents, preanesthetic questionnaire with anxiety assessment, prescriptions, femoral head donation consent form, request for admission to follow-up care and rehabilitation, request for acceptance of responsibility for functional re-education) - Hygiene recommendations before an outpatient surgery procedure - Leaflet for follow-up care in one of the rehabilitation centers linked to the service Internal documents: - Organizational chart of the university hospital group - Annual report - Welcome booklet for the new intern in the department and procedures - Job description nursing staff in charge of care pathway - Operation programming sheet - Surgical preparation interview (nursing staff in charge of care pathway) Academic documents: - Thesis defended by one of the health care executives on Upog - Communication presented in a geriatric congress by the chief of Upog	

Figures

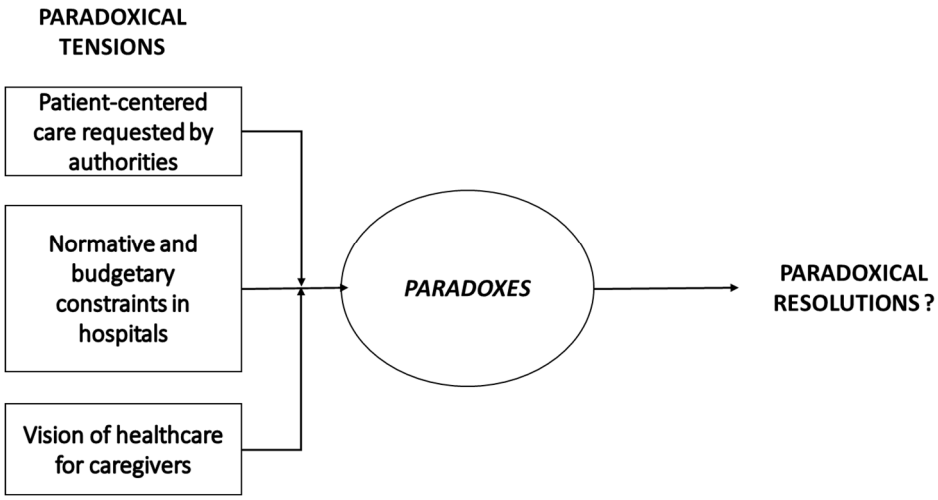

Figure 1. Conceptualization of the research problem

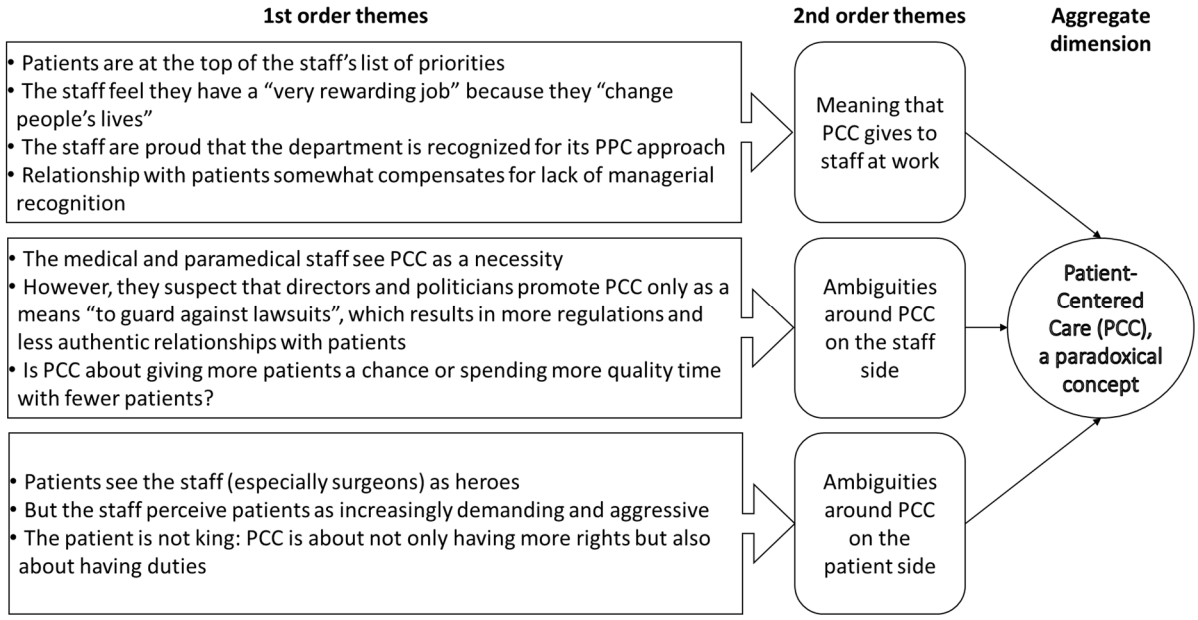

Figure 2. Building of data structure for the first aggregate dimension

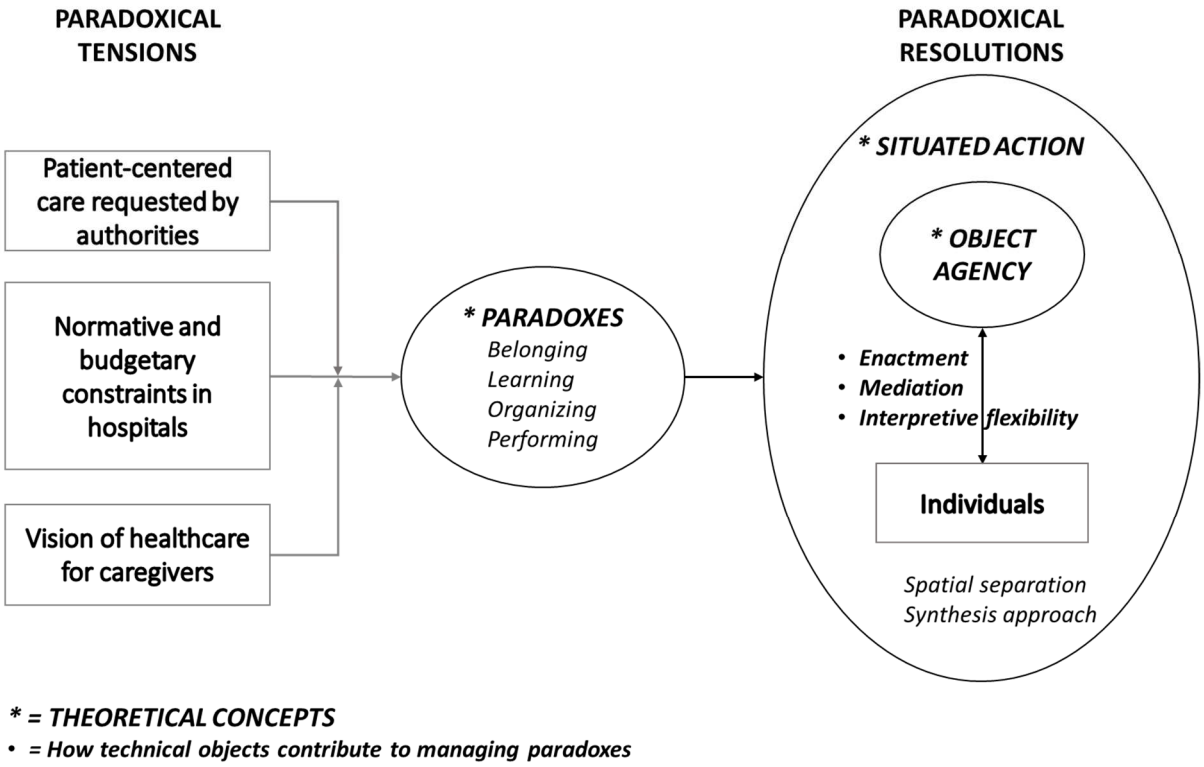

Figure 3. From paradoxical tensions to their resolution:
the role of object agency in a situated action

How do hospital staff manage to reconcile conflicting logics around Patient-Centered Care?