Cultivating strategic foresight in practice: A relational perspective

Drawing on relationalism as a theoretical lens, we examine how normative organizing structures, rights and authority relationships influence the cultivation of strategic foresight among organizational members lower down the organizational hierarchy. We adopt a case-based approach involving three software firms, whose innovation teams served as our empirical research sites. Our study highlights the triadic influence of individual, organizational and contextual organizing practices on the cultivation of strategic foresight. We identify four relational assemblages of practices that enable (or impede) the enactment of strategic foresight in practice. These include strategic conversations, perspective taking and reflexivity-in-practice, over-emphasis on formal knowledge and technical rationality, and benevolent conspiracies. We add to research on strategic foresight by extending our understanding of the vital role that lower-level employees may play in the cultivation of organizational 'foresightfulness'. We therefore urge management advisors to accord lower-level input recognizably respectful consideration, if not adoption.

1. Introduction

The ability to identify, interpret and (re)configure sources of potentialities into resources and productive outcomes is frequently highlighted as a key capability of foresightful organizations (Chia, 2008; Constanzo and Mackay, 2010; Rohrbeck, 2012). The concept of strategic foresight has enjoyed a sustained rise to prominence in organizing, triggering interest in the wider social, historical, and intellectual context within which strategic foresight emerges or fails (Stiglitz and Bilmes, 2008; Whitehead, 1967). Nevertheless, with respect to the cultivation of strategic foresight, current explanations prioritize the trans-individual 'foresightful' actions of the 'heroic CEO' (Ahuja et al., 2005; Gabriel, 1995) and the collective organizing practices of Top Management Teams (TMTs) (Andriopoulos and Gotsi, 2006; Vecchiato, 2012). Against this background, what remains unclear is the contribution of 'ordinary' organizational members positioned further down the organizational hierarchy. The literature is silent on how the situated organizing practices and relationships of lower-level employees influence strategic foresight. This line of research may have been sidestepped because strategic foresight is frequently conceptualized as a longer-term objective, while the seemingly run-of-the-mill work of lower-level employees comprises primarily short-term activities.

To better understand the role played by lower-level employees, this paper examines how organizing practices and relations influence the cultivation of strategic foresight. Developing our contribution in the context of the global software industry, we explore the potential for 'relationalism'

to encourage new understanding about how the organizing social relationships and situated interactions of product innovation teams influence strategic foresight. Our study makes two contributions. First, it contributes to the literature on strategic foresight by demonstrating the importance of lower-level employees in the cultivation of strategic foresight. Second, by drawing on a relational perspective, it illuminates the potential for taken-for-granted everyday organizing and authority relations to enable (or impede) the enactment of strategic foresight in practice.

The paper is organized as follows. First, we provide an overview of the concept of strategic foresight and the different perspectives on theorizing strategic foresight in organizing. Next, we explore its relational dimension and examine how structural and authority relationships in a bounded system extend understanding of the creative emergence of organizational foresight in practice. We then explain our research methodology, detailing our approach and analytical methods, after which we present our evidence on how the relational orientation of innovation teams might enable or impede organizational foresight. Finally, we discuss our findings and the implications of our research for theory and practice.

2. Strategic foresight

2.1 Concept, process and perspectives

Referring to foresight as a human attribute, Alfred North Whitehead (1967, p.89) defined it as "the ability to see through the apparent confusion, to spot developments before they become trends, to see patterns before they emerge, and to grasp the relevant features of social currents that are likely to shape the direction of future events". For Slaughter (1995, p.1), "foresight is not the ability to predict the future... it is a human attribute that allows us to weigh the pros and cons, to evaluate different courses of action and to invent possible futures on every level with enough reality and meaning to use them as decision making aids". Conditioned by these early conceptualizations, strategic foresight is frequently presented as a managerial function and competence (Mackay and Burt, 2014; McKelvey and Boisot, 2010), which enables organizations to "penetrate and transgress established boundaries

and seize the opportunities otherwise overlooked by others" (Chia, 2008, p.27). From this perspective, Rohrbeck and Schwarz, (2013) delineate strategic foresight as the ability to implement actions that reflect critical decision-making; to discern, perceive and interpret weak signals and deduce relevant courses of action. The theoretical and managerial implications are that strategic foresight places organizations in a state of preparedness, broadening their vision to probe emerging social and technological trends in ways that result in innovations responsive to fast-paced business environments (De Moor et al., 2014).

So how can organizations cultivate strategic foresight? Within an organizing framework of intervention and 'scientific rationality' (Sandberg and Tsoukas, 2011), multifarious methodologies like scenario thinking (Wright and Cairns, 2011), business war-gaming (Schwarz, 2009) and scenario planning exercises (van der Heijden, 1996) have been developed (and promoted by foresight scholars and practitioners) to help organizations enhance their foresightfulness. Underpinned by a complex set of methods and interactive processes, each consisting of sequential discrete actions and prescriptive steps, foresight exercises represent annual rituals in many organizations. However, their episodic, linear nature makes them appear 'cognitivist' and ultra-rational in form. Moreover, the level of employees involved in these exercises is unclear so managers as decision-makers are frequently privileged as protagonists, making the 'visionary' manager the locus of organizational foresight. To address the complications of attributing organizational foresight solely to managers, strategic foresight in the form of strategizing is frequently conceptualized as a distributed capability that enables organizations to produce meaningful, future-oriented knowledge (Bradfield et al., 2005). This shift in locus attribution in unpacking and theorizing strategic foresight prioritizes middle-managers and, sometimes, 'ordinary' employees as people whose 'actions' and 'doings' may influence organizational foresightfulness (Constanzo and Tzoumpa, 2010; Cunha et al., 2006).

Recent advances within the foresight literature have redirected attention to theorizing strategic foresight as a social practice, suggesting the everyday organizing activities and micro-interactions between organizational actors are relevant for understanding strategic foresight (Cunha

et al., 2006; Sarpong and Maclean, 2011). Emphasizing practice as the site of the emergence of strategic foresight, this stream of studies treats foresight ontologically as flexible and perpetually *becoming* (Kaplan and Orlikowski, 2013; Tsoukas and Chia, 2002), recognizing that the intrinsic temporality of organizing often treats the past, present, and future as 'durationally' indivisible (Sarpong and Maclean, 2013; Maclean et al., 2012a). In this regard, they strive to accommodate novelty, improvisation and the potential for change arising from collective 'foresightful' actions. While the practice perspective offers compelling and useful ideas, it faces the methodological challenge of sifting, mapping and interpreting the potential teleological structures of normative past and present foresightful actions. Table 1 summarizes the main areas of difference between the two established approaches to cultivating strategic foresight.

Table 1: Established approaches to cultivating strategic foresight

Dimensions	Corporate foresight exercises	Social practice approach to foresight
Representation	Strategic foresight as a derived outcome of ad hoc corporate futures exercises.	Strategic foresight as ongoing creative reconfiguration of sources of potentialities and limits into resources and productive outcomes.
Primary emphasis	On purposeful generation of probable futures or heuristic narratives during corporate futures exercises and scenario planning workshops.	On strategic conversations among actors, temporal reflexivity-in-practice, prospective sense-making and improvisation within contingencies of the moment.
Process characteristics	Relies on the contribution of external consultants or futurists whose role is to facilitate the filtering and combination of information dispersed in time into meaningful, future-oriented knowledge.	Problematizes the use of external consultants. Strategic foresight in the form of strategizing emerges from everyday organizing practices that involve micro-interactions and the interpretation of subtle cues in practice.
Organizing logic	Rational episodic intervention organized around a framework of scientific rationality'.	Flexible, relational in context, perpetually becoming.
Limitations	Often appear as an act of imposing dominant logic on subaltern groups, either through the truncation of alternative scenarios, or through an ideological understanding of outcomes.	Identifying organizing practices and activities that can be counted as partly constitutive of strategic foresight.

Contributing to research on foresight, particularly the practice approach which remains in a pre-paradigmatic stage, our relational approach emphasizes the influence of taken-for-granted relations and organizing arrangements on the cultivation of strategic foresight. Thus, the coming to

presence of strategic foresight relies not just on organizing practices, but on the relational actions induced by the interdependent relationships and interactions of organizational members in their situated practice (Simpson and Mayo, 1997; Young et al., 1996). Experiences obtained through interactions and inflexions can inform the logical accountability of strategic foresight in organizing. In what follows, we chart our relational approach to strategic foresight and specify its underlying logics.

2.2 A relational approach to strategic foresight

The notion that all social practices occur in relational contexts has led to the emergence of relationalism as a meta-theoretical perspective in theorizing heterogeneous relationships in organizations (Bello et al., 2002; Cooper, 2005; Mehra et al., 1998), focusing on their influence on how work is organized (Milton and Wesphal, 2005). With its conceptual development rooted in cultural psychology, the contemporary 'turn' to relationalism is grounded in field theory and is concerned with the dialectical analysis of thought and action (Ho, 1998; Ho et al., 2001; Lebra, 1976). It privileges the heterogeneous configuration of relations and practices in examining the linkages between social structures and relevant organizational outcomes (Paswan et al., 1998). Chia and Holt (2006, p.38) present 'relationality' as a methodological framework that emphasizes:

> Relationships and action by which individual and organizational entities are understood as manifestations of a *latent* movement, or field of re-lat-ionships, that is distinct from any aggregative sum of parts.

Deriving meaning from relations and interactions, relationalism can enrich our understanding of the theory and practice of strategic foresight by providing a dynamic, open-ended approach to account for the emergence of strategic foresight. Following de Jouvenel (1967) and Schwarz (2007), who framed foresight as a behavioural outcome, we conceptualize strategic foresight as a by-product of 'organised human activities' comprising 'organised, open ended spatial-manifolds of actions' (Schatzki, 2005, p.471) that permeate social life. Strategic foresight can be viewed as a social practice (Cunha et al., 2006; Sarpong and Maclean, 2011) whose emergence is in constant flux, played out in the everyday work of a group of competent actors, as an actualization of a continuous process

of becoming (Tsoukas and Chia, 2002). This view recognizes an individual's embeddedness in a community of practice, providing an important insight into relationships and interactions within this and how these enable and constrain 'foresightful' actions (Cheng and Sculli, 2001). Here, we define strategic foresight as the creative reconfiguration of past and present potentialities into resources and productive outcomes in the future facilitated by the multiplicity of organizing relationships and interactions in practice.

Underscoring the importance of relationalism as a pluralist perspective in theorizing strategic foresight, Goffman (1967, p.2) argues "it is not the individual and his psychology, but rather the syntactical relations among the acts of different persons mutually present to one another" that shape the bundles of everyday practices of actors in their situated activities (Schatzki, 2001). In theorizing strategic foresight, it is imperative to re-orient attention from the individual or set of individuals to their social relationships and interactions which together define their social life. Hence, in accounting for the emergence of strategic foresight, emphasis was placed on "the patterned consistency of actions emerging from such interactions rather than on the micro-activities of individual agents" (Chia and MacKay, 2007, p.24); what Somers (1998, p.67) calls "the relational processes of interaction between and among identities". In seeking to explain how specific social syntactical relationships and interactions in teams might influence the cultivation of strategic foresight, we place emphasis on persons-in-relations. The central question addressed by this inquiry is therefore: how do the structural arrangements and authority relationships among lower-level employees influence the cultivation of strategic foresight in everyday organizing? Next, we present the research methodology which guides our empirical inquiry.

3. Research methodology

Our empirical research context was the global software industry. Our choice was based on the premise that the software industry offers a rich context to study and theorize a durable, flexible capability like strategic foresight because it features rapidly evolving technologies and uncertain fast-

moving markets (Hartmann et al., 2011; Parry et al., 2012). We adopted an exploratory research design and methodology, our aim being to develop theoretical insights into strategic foresight within real-life contexts where the boundaries between theory and practice are ill-defined (Stoecker, 1991). Employing a multiple-case design (Eisenhardt and Graebner, 2007; Yin, 2003), we selected three software firms ('Interlab', 'Mercury' and 'Kemitech') located in the South West of the UK on the basis of their comparable sizes and organizational structures to permit meaningful comparison (Eisenhardt and Graebner, 2007; Tsang, 2014). All three were pioneering a series of innovative products for different market segments and had professionals drawn from varying sections of the business working in their innovation teams. We devised three theoretical sampling criteria to select the projects included in our inquiry. First, all projects required the commitment of significant resources (time, technologies, money). Second, each project needed to entail the development of an innovative product incorporating new, unfamiliar technology. Third, selected projects had to employ Microsoft's computing technologies including their user and data interfaces in creating the platform architectures of product innovations. The logic was to reduce variations in the technological context in order to ease comparability between projects. Four projects were selected for inclusion: (a) a planning application software for a national sports agency; (b) a traffic congestion software for local governments; (c) a graph application software for rail companies; (d) and investigation software for security services and law courts. Our chosen level of analysis was the product innovation teams of the case organizations, representing the "level at which observable changes take place in the way work is done and the management of innovation process can be witnessed" (Birkinshaw et al., 2008, p.282). Table 1 provides an overview of the four projects.

Given the dearth of research emphasizing 'relationalism' as the site for the emergence of organizational foresight, an explorative qualitative approach was deemed appropriate (Lincoln and Guba, 1986), enabling us critically to explore the dispositional 'in-betweens' rather than the isolated subjects or wider structuring forces in practice (Chia and Holt, 2006; Rasche and Chia, 2009). Given the flexible, ethereal nature of organizational foresight, qualitative methods of data collection were

considered useful in capturing actors' lived experiences and inherited knowledge, which were of prime importance in generating insight into their everyday working relationships and 'foresightful' actions. Table 2 summarizes the data collected for the inquiry.

Table 2: Case organizations, their project(s) and data

Case organization	Selected project(s)	Data sources
Interlab Founded 1991, employs 150 staff, annual turnover £10m in 2000-10	Planning application software for national sports agency	8 Interviews, 6 Observations, *Archival sources*: Electronic share point, company brochures, documents, internet pages, project records
Kemitech Founded 2000, employs 20 staff, annual turnover £2.5m. in 2009-10	(a) Traffic congestion software for local governments (b) Graph application software for rail companies	7 Interviews, 5 Observations *Archival sources*: Company documents, newsletters, internet pages, project records
Mercury Founded 1982, employs 60 staff, annual turnover £6.2m. in 2009-10	Investigation software for security services	11 Interviews, 9 Observations *Archival sources*: Company brochures, documents, newsletters, internet pages, project records

Data were collected over a twelve-month period through semi-structured interviews, observations and documents. Face-to-face interviews were the primary source of data; we interviewed all innovation team members for the specific projects, including their respective project leaders. Each interview lasted approximately one hour and all were digitally recorded and transcribed. We asked respondents about their roles, duties, responsibilities, and individual visions of the yet-to-be-realized innovation. We "drilled down into explanations of why [they perceived] specific aspects" (Jarratt and Stiles, 2010, p.31) of their organizing practices and relationships to be

(un)important to future innovations, how they experienced working life, and the kind of things that were meaningful to them (Alvesson, 2003). We supplemented this with archival project documents (including electronic share points, corporate brochures, project records, and internet pages), and some 20 observations of innovation teams' meetings and informal conversations.

3.1 Data analysis

Our data analysis followed three steps. First, we followed Strauss (1978), engaging in open coding by re-reading the textual data to see whether they matched correctly with what we heard in the field. We probed the data from individual cases to identify recurrent comparative phrases which were used to develop provisional categories and first-order codes (Glaser and Straus, 1967), focusing on the roles, duties, responsibilities and relational rights of lower employees, since we had not elaborated *a priori* hypotheses.

Second, we embarked on a cross-case analysis to compare and search for relationships among the initial categories and then systematically probed the statements across the innovation teams to categorize them according to themes. The resulting data were analysed and interpreted iteratively until common themes emerged and became saturated (Strauss and Corbin, 1998; Suddaby, 2006). Using an inductive approach (Thomas, 2006), we embarked on recursive comparisons between the themes and ideas discussed by interviewees until we could make conceptual linkages between our cross-case analysis, theoretical lens and insights generated from the data. We further coded the emerging categories, their descriptions and organizing logics of strategic foresight to converge on four overarching themes, namely 'strategic conversations', 'perspective taking and orthogonal reflexivity', 'over-emphasis on formal knowledge and technical rationality' and 'benevolent conspiracies'. These were then applied to the dataset by annotating the data with numerical codes (Strauss and Corbin, 1990). The codes were supported with short descriptors elaborating the various headings.

Third, we built up our understanding of how the organizing relationships facilitated (or constrained) the enactment of foresightful actions in practice to explore viable theoretical explanations. On the basis of this interpretive analysis, emerging patterns were used to develop greater insight, raise the theoretical level and form descriptive explanations to produce generalities (Denzin, 2009; Ritchie and Spencer, 1993) of the influence of lower-level employees on the cultivation of strategic foresight. Table 3 summarizes our analysis.

Table 3: Data structure

First-order codes	Evolving Theoretical categories	Organizing practices and relationships in practice
▪ Objective discourse on possibilities and limits ▪ Reasoned analysis of existing relations and organizing processes	Strategic conversations	*Facilitating strategic foresight*
▪ Making temporal connections between past-present-future of the organizing social orders ▪ (Re) construction of limits and potentials of present social forms	Reflexivity-in-practice and perspective-taking	
▪ Performative ordering of social order ▪ Privileging scientific knowledge /dismissing experiential knowledge	Privileging technical knowledge and rationality	*Constraining strategic foresight*
▪ Active advancement of sectional interests ▪ Discursive and opaque power-loyalty structures ▪ Perceptual and cognitive representation of normative beliefs	Benevolent conspiracy	

4. Findings

We now present our research findings in three stages. First, we delineate the patterns of organizing arrangements and authority relationships identified in the various innovation teams. Second, we 'unpack' how the situated organizing relationships of lower-level employees facilitated strategic foresight. Finally, responding to the contradictions of everyday organizational life, we present how the situated organizing relationships of lower employees may constrain the cultivation of strategic foresight.

4. Findings

4.1 Emerging organizing regimes in practice

The analysis of the data collected, particularly the project documents, produced insights regarding product innovation teams as flexible organizational subsystems (Brown and Eisenhardt, 1997, Tushman and Nadler, 1987), each with an organizing architecture which implicitly (or explicitly) specified institutionalized power structures, control systems and rituals (Cornelius et al., 2005; Johnson and Scholes, 1993). Following Sarpong et al. (2013), we call these adaptive formal and informal emergent structures that governed the situated organizing practices and relationships of the various innovation teams as 'organizing architectures'. Comprising the organization of the innovation process, including its canonical rules, authority relationships, duties and responsibilities, an organizing architecture shapes what members of an innovation team can(not) do in their situated practice. Before presenting the fine details of our findings, we need to clarify precisely how the conceptual apparatus associated with organizing architectures becomes more apparent, giving form to the patterns of foresightful actions geared towards the creative exploration of past and future possibilities in the present.

Comparative analysis of our data within and across the cases revealed that while the innovation teams structured their work around specific areas of expertise, their individual organizing

configurations (Tushman and Nadler, 1986) produced and legitimized normative duties, rights and responsibilities of team members. We found that some case organizations had their innovation processes organized around formal methodologies which were sometimes documented in manuals, and/or made available on intranet share points. As suggested by the Interlab project leader, such methodologies can reduce 'scope-creeping' and over-engineering what people do in practice, reinforcing compliance. Worryingly, our case evidence showed that such methodologies acted as surveillance tools and sometimes latently conditioned employees' visions of potential innovations. Our data suggested that an organizing architecture can have a profound impact on strategic foresight. However, to understand this fully, it is imperative to conceptualize it as occupying a continuum ranging from flexible to rigid, emphasizing the interplay between formalization of the innovation processes and the structural orientation of the organizing milieu. The innovation processes of those teams characterized as having flexible organizing architectures were less formal, their organizing structures loose and less hierarchical. Rigid organizing architectures, conversely, resembled an over-compartmentalized iron cage (Paswan et al., 1998) that restricted actors in challenging their assumptions about their working world. Their innovation processes were formal, mirroring their organizing structures (see Table 4).

Table 4: Profiles of emerging organizing regimes

	Flexible ← *Organizing architecture* → **Rigid**	
Formalization of innovation process	Low	High
Structural hierarchy	Low	High

Our data provided empirical bases to assume none of the case organizations had an extremely rigid organizing architecture. Mercury exhibited a singularly flexible organizing regime, followed by Interlab and Kemitech.

4.2 Leveraging the 'ingenuity' of 'ordinary' employees

From our analysis, the influence of flexible organizing architectures and the opportunities they present for interaction in a highly relational context leveraged the ingenuity of lower-level employees to exploit organizing ambiguities (Simpson and Mayo, 1997). This manifested itself in two closely related forms of activities that stimulated employees to enact foresightful action: "action in conditions of limited knowledge concerning both the extent to which future events may be anticipated and how to deal with them" (Tsoukas and Shepherd, 2004b, p.7). The first is strategic conversations about the future potentialities and limits of the emerging innovation. The second is perspective taking and reflexivity-in-practice, providing possibilities for the continuous elaboration of projected courses, and the corresponding (re)construction of meanings (Maclean et al., 2012b).

4.2.1 Strategic conversations about potentialities and limits

The term 'strategic conversation' refers to verbal interactions among team members in their situated activities (Chermack et al., 2007) that exceed mere information exchange to focus on improving product innovativeness. Heralded as the backbone of strategic foresight in competitive organizations, it is not about stimulating debates about factual knowledge regarding the future (van der Heijden, 1996). It concerns triggering conversations that lead to conscious locally reflexive orders of actions challenging collective assumptions about the world.

> What we have done in the past when we have a big problem is literally to bring the whole team up here and work through it together so people can pitch their ideas. One person may be making a very important point which might be extremely important for the product as a whole. It also makes people clearer on the thing we're doing. [Mercury team leader]

This manner of organizing significantly downplays power inequalities in the team. Here, while the idea of seeking the views of lower-level employees to deliberate 'what to do' may seem trivial, a habitual tendency in sharing identified 'maps of the future', it mobilized actors towards active participation in search of viable interpretations and meanings. Adopted pathways are legitimized and homogenized, enabling team members to generate a shared interpretation and common language. As one Kemitech member recounted:

> Yesterday we were doing a gooey design, so we all just came to the whiteboard and said, it would be great to have these ideas sorted because it could enhance the ability of the product to 'think for itself'… You see, we have a real agile environment down there. [Kemitech team member E]

These interactions provide the locus for validating the integrity of ideas and insights that require further exploration. As Gratton and Ghoshal (2002, p.209) state, "such conversations build a shared understanding of the situation and create the foundations for rational and robust group decision making". Such conversations allocate "resources more efficiently once a common mission has been widely sought and jointly identified" (Dator, 1997, p.34) and mobilize compelling differential visions of the emerging innovation into an idealized vision (Sarpong and Maclean, 2012). Such open fora stimulate sensemaking (Barnett, 1996; Weick, 1995) and encourage maverick lower-level employees adept at advancing 'unusual' ideas to share their experiences (Cunha and Chia, 2007). This can be gleaned from the following assertion:

> The fact that there is no one arrogant, or with a massive ego in the team, there are no blocks of communication between the project leader and those of us in the team. Everyone's view counts, especially if we are about to make some major changes to the product. You can ask each other questions and give each other help. [Interlab team member A]

These reciprocities foster existing trust in the team and sustain members' inner satisfaction derived from sharing their knowledge (Wang and Noe, 2012). The exchange of ideas provides members with the opportunity to experiment on combining established routines with received signals. Thus, the team can "maximise recombinatory options between a diverse range of skill sets, biographical backgrounds and cultural orientation" (Grabher, 2002, p.255), as they confront a particular problem or decide on alternative pathways. Strategic conversations do not produce authentic closures. They initiate a causal chain until a particular possibility is actualized, stimulating thought experiments and encouraging lower-level employees to share tacit assumptions, igniting collective imagination.

4.2.2 Perspective taking and reflexivity-in-practice

Our analyses revealed that a flexible organizing architecture empowers employees temporarily to transcend their functional tasks and roles to participate in strategic upstream decisions

concerning an emerging innovation. We delineate this capability around two lines of attention. The first is perspective taking. Here, we refer to the imaginative act of putting oneself in the shoes of managers whose prescribed space for possible action could be seemingly unlimited. This is supplemented by reflexivity-in-practice: ongoing collective, deliberate locally reflexive orders of actions engaged in by lower-level employees that undergird perception, reproduction and transformation of their social structures (Maclean et al., 2012b; Sarpong and Maclean, 2011). Perspective taking and reflexivity-in-practice are not mutually exclusive. Both are intrinsic to the identification of past and future possibilities and limits within current contingencies. Without perspective taking, the prestige of temporarily changing ranks becomes impossible. Likewise, reflexivity-in-practice, enabling the continuous elaboration of projected courses of action, the (re)construction of meanings, becomes non-existent. According to Chia (1998, p.5), "the shadow of the other is always implicated in the articulation of the one''. As the Mercury team leader recounted:

> They are better developers than I am and I know that. They also know that I am a better project manager, so in that sense it works and it literally boils down to that. When we find a problem with the software, I talk to the analyst, talk to the support person, the programmer. Then I say, come and talk to me, how are you going to fix it? I give them the responsibility of getting the issue resolved. [Mercury technical director]

Such 'Galilean moments' provide lower-level employees with the chance actively to contribute to upstream decisions. The risk that an upstream specialist might pass on work to downstream actors without knowing their upstream choices, potentially leading to technical constraints, is reduced (Postrel, 2009). This kind of organizing process encouraged employees to move from truncated, obvious reasoning to engage in non-habitual ways of thinking and acting. Our evidence suggests that lower-level employees, freed from their organizing regimes, can reflect on their practice in ways that bring them to challenge their own beliefs and assumptions, leading to the temporary reconfiguration of their organizing structures. Evolving social orders lend coherence and introduce contradictions concerning the emerging innovation. However, manifesting through pattern recognition and projection of future problems, they heighten imagination. Simultaneously, via

collective agency, employees acquire embodied social dispositions and capacities like knowledge, know-how, understanding and skills that anchor perspective-taking and reflexivity-in-practice.

The following extracts from a conversation between a Mercury team member and a researcher are illustrative:

> *Researcher:* So, what is it you are doing now that you think will contribute to the 'make or break' of the product in the market?
>
> *Team Member:* Well, not to blow my own trumpet, I am currently working on 'validators' at a sort of object level, which will hopefully be very useful for customers so that they will be able to modify their business logs without having to come to us to say, "I would like it if it did this, this and that". I have got a feeling that kind of functionality is probably going to be quite a big selling-point if it is done properly. There is a decent interface, and they have got people in position to come up with business rules and say, "I would like that, that and that".
>
> *Researcher:* Sounds interesting, did you come up with the idea yourself?
>
> *Team member:* The technical director originally had a sort of vague, fluffy idea, it would be nice if we do this, this and that, and I stumbled into it, because I got bored of going through every one of my pages where one date needs to be less than another date that somebody has put in. Currently, all we've got are 'validators' that say this date has to be before Wednesday, or this date has to be before now. There is no way to say this date has to be before this other date. So, I was fiddling with 'validators'. I then discussed with the technical manager who said, yes, I thought it would be a good idea if we made evaluators at a higher level that could look at all the attributes of the object.
>
> *Researcher:* What is actually going to happen after this?
>
> *Team member:* Well, I saw a problem or at least an opportunity, checked with the technical director and the project manager that something needs to be done. I was given a free rein to go off and implement it and make it something useful… Once the technology is there, it will be up to the team to take it on. We actually will then know how much time we need to spend putting these rules into the system. Maybe at the moment, all we need is the ability to do it for a few fields like comparing dates.

This 'dialogic encounter' (Beech et al., 2010; Maclean et al., 2012b) illustrates the role of strategic conversation and reflexivity-in-practice, emphasizing how the notion of minimal structures encourages improvisation in everyday organizing (Cunha et al., 2012). By virtue of the flexible organizing regime, lower-level participants, on receiving thought categories from the technical director, engage in retrospective and prospective acts whilst drawing on their existing technical knowledge to explore familiar, but unintelligent observed patterns in new situations. With regard to making such 'validators' useful, the flexible organizing regime provided the 'design space' (Baldwin et al., 2006) wherein lower-level participants 'played' with the 'validators' in ways that enabled them

to recognize the changing meanings and identity of 'epistemic objects' (Knorr Cetina, 2001), whose inarticulate configurations and open-ended latent spatial-relations were not visible to the Technical Director.

4.3 The politics of imaginary pluralism

Following Clancy et al. (2012, p.519), imaginary relational pluralism as used in organizing our findings refers to observed "fantasy of [openness], control and coherence, where [lower employees] behave *as if* [their] organizations are the stable containers of rational decision-making and problem-solving". Our evidence revealed that often, employees embedded in rigid organizing regimes over-identified with their organizing architectures, and were reluctant to challenge taken-for-granted assumptions about their organizing world. As Nohria and Gurtler (2004, p.3) state, they engaged in 'unreflective obedience' to the organizing regime. We observed that those employees who escape their shackles to challenge their organizing social order quickly realized that their polyphonic voices may be interpreted as dissent or challenge to authority relations. The resultant impact of the 'politics of pluralism' in constraining strategic foresight manifested itself in two ways. The first involved the legitimation of rigid authority relations which structure the organizing context by over-emphasizing the relevance of formal knowledge and technical rationality, subordinating dispositions, bodily and interpretive knowledge, which underlie learning and change in practice (March, 1991). The second is an exercise of agency we call 'benevolent conspiracies'. Here, lower employees formed episodic 'tribes' with others sympathetic to their beliefs without provoking an all-out fight against management.

4.3.1 Over-emphasis on formal knowledge and technical rationality

Our case evidence revealed that the context of rigid organizing regimes places considerable emphasis on factual and procedural knowledge at the expense of interpretive knowledge, which stresses 'ways of knowing' like improvisation to cope with ambiguity (Schwartz, 2011). The implicit assumption here is that "capability to procure and to utilise information is and will be a core

competence of progress, innovativeness and competitiveness" (Patokorpi and Ahrenainen, 2009, p.2). Nevertheless, we found that the quest to amass a wide range of information or complete information before taking simple but pragmatic intelligent actions furnished little space for lower-level employees to engage in playfulness (March, 2006; Levitt and March, 1988), forcing them to trade off reflexivity-in-practice for control and coordination.

> Sometimes you get a blatant 'No!' as an answer, and you think that's because they haven't thought about what I said. It is not worth fighting... Other times, you get a 'No!' and you just have to realise that actually there are other forces at play, you know? Other people have other priorities, so that might mean that your brilliant idea isn't so great when it is put into context. It is a hard one to swallow. [Interlab team member D]

Another participant observes:

> I am used to being able to engage in reasonably lively debates where I argue my side and get things sorted. Here, I do get the impression that it's generally been what the management says goes. You can sort of argue a little bit about those that are important to you but the big bits always go the way they want. It just comes down to being handed parcels of work on a week-to-week basis. Because of this, I've always found myself thinking I could do much better than what I'm asked to do. [Kemitech team member B]

In both cases, team members report being psychologically and emotionally disengaged from the innovation process. Unable to break free from their organizing architectures, they come to view their respective innovation processes as a threat rather than an enduring challenge to be mastered (Bandura, 1994). Worse, they are unlikely to risk putting their stock of referential knowledge and creative efforts into action to enhance their identities. The following excerpts are illustrative:

> It's quite devastating when you have no chance to prove your worth. You essentially become subordinate, quiet, and cut off because [the manager] basically squashes everything including the very thing that made you want to get up in the morning and go to work. [Kemitech team member E]

> The worst experience was when we worked in a very small team which had absolutely no overlap of roles. So if I had a problem with something, the only choice I had was to go to my manager and see if he had some time to come and point out what I should do. It makes you feel stupid. [Mercury team member G]

Unable to surpass the limits imposed by the rationalist model of working, the motivation of lower-level employees to explore potentialities may be curtailed, resulting in premature closure of potential alternative pathways. The evaluation of specific pathways then becomes rule driven or the preserve of select members privileged to have an issue fall within their technical domain. Here,

alternative futures which appear melodramatic or slightly unintelligible are discarded, the evaluation of alternatives disingenuously directed to discount the worldview or experience of those occupying lower positions in the team. Two participants explain:

> I will say your input frequently counts based on your position in the team and partly based on the value of the idea. But that idea might be misconceived but would still get pushed through if you are a senior. Yes, so I won't even suggest something weird because there isn't an open forum for it. That's the reality of it, I think. [Kemitech team member D]

> …You just have to swallow it in the end don't you? You can kick and make a fuss for a bit, but in the end, you know, in this working environment, if somebody says yes, who has the authority to say no? [Interlab team member B]

Such relational dynamics stifle the emergence of diverse epistemologies required to explore future possibilities and limits in the present (Nonaka et al., 2006; Whip, 1999), diminishing the expertise of lower-level employees that they aim to reinforce (Dreyfus and Dreyfus, 2005). For these employees, this was a deliberate attempt by those vested with authority to 'down-skill' by socializing them into accepting their interactional lower status or role obligations as fixed. Instead of being disenchanted and rebellious, these actors may accept the rules of engagement even if they intuit that it goes against achieving the group's desired future.

4.3.2 Benevolent conspiracies

We use the term 'benevolent conspiracies' to delineate what some employees do as 'resistors' to challenge extant power relations when their visions of innovations are not accommodated by inflexible organizing architectures. From our case evidence, the early signs of dissipation of strategic foresight induced by such organizing regimes manifest in creative resistance (Courpasson et al., 2012; Mainemelis, 2010) and the (un)conscious pursuit of sectional interests emphasizing the compartmentalization of team members within technical domains.

> I have put it on record, if you like, that I haven't been happy with some of the decisions, not necessarily with the person who took the decision but with somebody else on a similar level like me who potentially has the same reservations. Instead of going to the actual person and saying I told you, he shouldn't have done it that way, I can go to the other person, more or less on my side and say, we were right and he was wrong. [Mercury team member B]

This narrative highlights two issues related to benevolent conspiracy and its dysfunctional impact on strategic conversation and strategic foresight. First, it shows innovation team members, given their formally prescribed positions within the organizing regime, are accorded little room to share their visions or "co-produce the future" (Deetz, 2008, p.389). Although this rule of engagement may quell distractive or unnecessary ideas while slowing the innovation process, in practice it discounts people's experience outside their technical domain, encourages compartmentalized thinking, and suppresses dissenting views and the creative tensions required for the identification of novel possibilities. A Mercury team member responsible for quality assurance lamented:

> We may come up with something which technically seems to be a minor problem, but could still influence the overall performance of the product. The developers will say, well, it is not really urgent or related to testing for 'bugs' and then override that point of view, or simply push it back for the next cycle. It is easy for the smaller issues that are important to you to get pushed back until you end up in a dilemma. Maybe the tester's point of view could be taken more seriously. They need to bear in mind we are also looking at the bigger picture. [Mercury team member A]

The tester, whose primary role is to provide quality assurance feedback, is not expected to be concerned with interface development which falls beyond the boundaries of her role. While she may make a valuable point, little effort is expended into evaluating the viability of her inputs, and her concerns are ignored. Feeling undervalued, other members of the quality assurance group may take unwarranted actions to support their friend.

Second, the employees become 'prisoners' caught in an organizing vortex that affords them little latitude to escape their creative shells. While their expectations, experiences and language may lead others to assume they are committed to the innovation process, in fact they may carry out their formalized duties without committing to exploring opportunities that present themselves. An Interlab team member observed:

> We are never told anything, we just sort of plough along doing the best we can, or what they have told us to do. [Interlab team member C]

The conspiracy to adopt a 'ploughing along' tactic can be interpreted as a mechanism for team members to cope with their structural and relational constraints. Such acts make it difficult, or

impossible, for employees to claim appropriate relational rights during strategic conversations, impeding their understanding of the emerging innovation.

5. Discussion and conclusion

Our objective in this study was to examine how organizing structures and relationships influence the cultivation of strategic foresight. Emphasizing the structural orientations of innovation teams, their everyday situated activities and relationships in context, our study highlights the triadic influence of individual, organizational, and contextual organizing practices on the cultivation of strategic foresight. Four salient relational assemblages of practices that enable (or impede) the enactment of strategic foresight were identified: strategic conversations; perspective taking and reflexivity-in-practice; over-emphasis on formal knowledge and technical rationality; and benevolent conspiracies. Our data suggest these practices are culturally and historically situated, operating in combination or serially, contributing simultaneously to enable or constrain knowledge-based action in situated interaction regimes on strategic foresight. In this regard, we found that the flexibility (or otherwise) of the organizing regime of an innovation team provides a salient 'antecedent' to shape employees' ability to enact foresightful actions. Organizing regimes therefore have ramifications and implications beyond structuring work to embody and govern situated organizing practices and relationships. Given this, strategic foresight from a practice approach cannot be viewed as a *fait accompli*. Rather, its creative emergence and cultivation rely on the transformational character of emerging organizing regimes.

Our research contributes to the literature on strategic foresight by explicating the relevance and influence of relationships and situated interaction regimes on the creative exploration and exploitation of limits and opportunities within organizing: a crucial lens that remains under-researched. Drawing on relationalism, our study responds to calls for new approaches to theorizing strategic foresight (Fuller and Loogma, 2009) bringing in an array of influences to its theory and practice by showing how organizing processes as a causal factor influence talk, doings and hence the enactment of strategic foresight by employees in their situated practice. Note that the relational

perspective, as advanced in this paper, makes no attempt to replace or invalidate the two existing perspectives on strategic foresight relating to episodic intervention and practice (see Table 2). Rather, the relational perspective complements them by seeking cumulatively to enrich our understanding of how strategic foresight as a distributed capability (McKelvey and Boisot, 2008; Tsoukas and Shepherd, 2004) can be harnessed practically beyond the annual intervention rituals facilitated by external consultants. Contributing to the emerging practice perspective, we hope our theoretical and conceptual advances may help foresight scholars and practitioners to better understand the logic and dynamics of strategic foresight beyond the specific context of their temporal emergence.

Our research holds implications for practicing managers, especially those charged with managing new product innovation teams. First, we do not expect them to relinquish episodic interventions like scenario planning exercises. However, there is a need for managers to recognize that lower-level employees can, and do, contribute to organizational foresightfulness. Their latent potential to explore and exploit future opportunities and limits could be leveraged by entertaining maverick, dissenting views in organizing and promoting flexible organizing systems (processes, structures, relational rights) that give form to authority relationships in organizations (Tushman and Nadler, 1986). Such flexible organizing systems may encourage employees to share their visions and take ownership of joint enterprises. We therefore urge management advisors to give lower-level input respectful consideration, if not adoption. The wisdom of project teams may percolate through the glass ceiling of power to influence organizational learning and foresightfulness, especially for organizations structured for intense support of project-based work.

Like all studies, ours has limitations. First, we recognize the danger in assuming the generalizability of our findings with regard to all software organizations or technology-based firms (Eisenhardt andGraebner, 2007). More geographically, culturally diverse companies might have produced different findings. Future research may consider focusing on different organizational or environmental settings (e.g. biotechnology) to ascertain whether additional insights can be observed or generated. Second, we concede that organizing practices, relationships and interactions evolve and

adapt over time, and we studied our innovation teams over a limited period of one year. We therefore invite future research to adopt a longitudinal approach to investigate how changes in the organizing practices and relationships during the course of innovation projects influence strategic foresight over the longer term.

In conclusion, as strategic foresight becomes a distributed capability, organizations need to know more about how employee foresightfulness can be nurtured and captured. This study represents a first step in that direction.

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