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ESSAYS ON HOW SCENARIO PLANNING AND THE BUILDING OF NEW SOCIAL CAPITAL ARE RELATED

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Abstract

This dissertation explores the relationship between scenario planning and the building of new social capital in addressing potential or actually perceived environmental turbulence. In particular, the research explores how, when environments around organizations risk unpredictable and disruptive change, people in those organizations can act to develop new social capital that contributes to their survival. In this research, I present scenario planning as a mechanism for organizations to build this new social capital.

Scholars have suggested that certain forms of social capital are more conducive to being directly built than others. My research indicates that scenario planning entails aspects which, in effect, are direct investments in creating the cognitive social capital resources that make new sense of turbulence. These resources are created with the scenario process articulating new conceptual framings and possibilities for the future, thereby re-conceptualizing the situation. The resources enable new shared meanings to be created - directly building the cognitive dimension of new social capital while enabling the more researched structural and relational dimensions to be built as by-products. This dissertation also suggests that social capital can be built more quickly than researchers have previously indicated. By directly investing in the creation of new shared meanings, scenario planning can build new social capital faster than the centuries that Putnam and generations that Emery and Trist suggested were needed.

The dissertation's contribution to the social capital literature is to suggest how new social capital, by foregrounding the cognitive dimension, can be purposefully and more quickly built to address turbulent conditions. The contribution to the scenario planning literature is to propose a scholarly explanation for how scenario planning builds new social capital, suggested in practice but not yet theorized, and in so doing, provide practitioners with a new purpose to strengthen the return on investments these efforts require.

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GLOSSARY OF TERMS AS USED IN THIS DISSERTATION

Contextual environment	"The contextual environment is that part of the environment which has important repercussions for the organisation but in which it has little or no influence" (van der Heijden 2005:115). The contextual environment provides the boundary conditions for relationships in the transactional environment (described below) (Trist 1983).
Environment	The environment is the context within which a system (described below) operates (Emery & Trist 1965). Systems and their environments co-evolve (Selsky et al. 2007).
Field	A field is constituted by systems, their shared environments and the links that connect them (Ramirez et al. 2008).
Scenario planning	"Scenario-based planning makes sense of the situation by looking at multiple futures, which are treated as equally plausible, reflecting the inherent uncertainty in the situation, but also what is considered predictable. It is non-prescriptive. It recognizes that successful competitive strategies must be original inventions made by organisations. It therefore employs processes that enhance the capability of the organisation to mobilise resources towards greater inventiveness and innovation" (van der Heijden 2005:49).
Social capital	"The sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network" *(*Nahapiet & Ghoshal's 1998:243).
System	An organization is an example of a system defined as "a set of two or more interrelated elements...a whole that can be divided into parts" (Ackoff 1997).
Transactional environment	"The transactional environment is that part of the environment in which the organisation is a significant player, influencing outcomes as much as being influenced by them. This is the playing field for which the organisation develops its strategy in order to turn the game to its advantage" (van der Heijden 2005:115)

Turbulence	Turbulence is a characteristic of a field (Selsky et al 2007). It emerges as an outcome of the activities of systems over time as well as "dynamic processes arising from the field itself" (Emery 1967:77). The result is the field becomes "richly joined" (Emery 1967:79) and unpredictable. The result is a sudden instability experienced by systems as a situation where "the institutional arrangements governing the field as a whole start to break down" (Ramirez et al 2008:21). Turbulence also has a subjective element in that whether a field is regarded as turbulent or not by a system depends on the system's perceived adaptive capacity (McCann & Selsky 1984).

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CHAPTER ONE.

INTRODUCTION

"In community building as in
business organization and
expansion there must be an
accumulation of capital before
constructive work can be done".
Hanifan, 1916.

This dissertation explores the relationship between scenario planning[1] and the building of new social capital in addressing potential or perceived environmental turbulence. In particular, the research investigates how, if environments around organizations become unpredictable and disruptive (Emery & Trist 1965), people in those organizations can act to develop new social capital that can contribute to their survival. In this exploratory research, I investigate the capacity of scenario planning to build this new social capital. The dissertation's contribution to the social capital literature is to suggest that, in the context of making sense of potential or perceived turbulence, the building of new social capital can be purposefully and directly led by the cognitive dimension. The contribution to the scenario planning literature is to propose a scholarly explanation of how scenario planning builds new social capital – suggested in practice (Galer 2004; Kahane 2004) but not yet theorized.

I have pursued the three paper route for this dissertation. This introduction outlines the research and provides a theoretical framework for positioning the original contributions of the papers. The three paper route also has implications for the way in which the dissertation is laid out. Each of the papers is self-contained in that they have

[1] I use the term scenario planning throughout this dissertation given it is consistent with van der Heijden's (1996) definition – the one I used to operationalize scenario planning in the research. Van der Heijden actually uses the term scenario based planning but as this would be too cumbersome throughout the thesis, I use the shortened version of scenario planning.

their associated reference lists and appendices immediately after the body of the text. To be consistent, I have formatted the remaining chapters (including this introduction) in the same way. That is, the references and appendices for each chapter are to be found at the end of the chapter's main body of text. In addition, tables and figures are numbered within the chapters – rather than accumulatively through the dissertation.

This introduction is ordered as follows: first, an overview of the research is provided; second, the research questions guiding this dissertation are outlined; third, the research topic is discussed; fourth, the ontological and epistemological assumptions of the research are presented followed by an overview of the research design; fifth, the significance of the research is highlighted; sixth, I provide an account of personal factors that led to the final choice of research topic; and seventh, the succeeding chapters – including the three papers - are introduced.

OVERVIEW OF THE RESEARCH

Scenario planning was introduced to firms in the late 1960s and early 1970s in response to the increasing failure of single point, long term planning forecasts to cope with growing environmental turbulence (Wack 1985a; 1985b). A conceptual explanation for the notion of turbulence was provided at around the same time when Emery and Trist published their seminal 1965 article in *Human Relations* that articulated what organizational environments might consist of. In this article they argued that turbulence in a field, defined as a set of environments shared by several actors' such as organizations, is created as these organizations compete with each other and from developments in the environment itself. The effect over time is a sense that "the 'ground' is in motion" (Emery & Trist 1965:26). The concept of turbulence has since been invoked by strategy scholars to describe environments characterized by

sudden and disruptive change – more recently called high-velocity environments (Bourgeois & Eisenhardt 1988). (The concept of turbulence is discussed in more detail in the section below on causal textures theory.)

McCann and Selsky (1984) considered that the feeling of the ground being in motion that Emery and Trist spoke of is not a universally experienced phenomenon, but rather depends on actors' (individuals and collectives) perceived adaptive capacity. That is, turbulence is a salient experience only for actors who feel they do not have the necessary resources and skills to address the uncertain environmental changes they expect or are experiencing.

Trist (1983) also showed that the environment has two parts – the transactional and contextual. The transactional environment is made up of the interactions organizations have with each other (like players on a field in a game) while the contextual environment is defined by the aggregation of these activities. Scenario planning helps actors to address potential or perceived turbulence by providing them with a better systemic understanding of the contextual forces that will have an impact on the future configuration and nature of their transactional environment - thereby increasing their perceived adaptive capacity (Ramirez et al. 2008; 2010; van der Heijden 2008).

There is no clearly agreed-upon definition of scenario planning – or social capital – in the literature. For scenario planning, I use that of van der Heijden (1996; 2005), whose book *Scenarios: The art of strategic conversation* is regarded as a definitive work in the field[2]. His approach can be categorized as belonging to the

[2] I have sought to determine citations for this book however this has proved difficult. Books are not included in the Social Sciences Citation Index. I discussed this with the Said Business School library staff who advised me that there is a Web of Science Book Citation Index being established although this will

intuitive logics school (Bradfield et al. 2005), which is also the approach used in the three case studies explored in this dissertation.

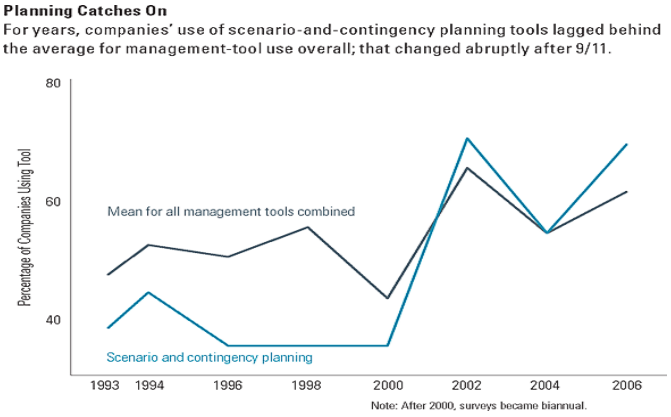
Van der Heijden referred to scenario planning as a tool – both in the process and content sense – for addressing the inherent uncertainty of the future and creating adaptable organizations. By 'process', he meant a method that can enable actors to undertake research and discuss that research and its implications in a "strategic conversation". Taking a resource-based view of strategy (Barney 1991; Teece 1986; Wernerfelt 1984), he argued that the success of any organization depends on the unique insights and inventions it can generate and defend to set it apart from others and that the scenarios must help with these. This conceptualization of scenario planning as both process and content is set against the real-world situation of uncertainty managers' face when looking to the turbulent future. In the context of turbulence, single point forecasts are hazardous. Instead, scenarios provide multiple representations of the future context that facilitate adaptability by enabling actors to respond to a range of 'what if' questions. In a passage of the book, van der Heijden (2005:49) summed up this conceptualization of scenario planning as follows:

> Scenario-based planning makes sense of the situation by looking at multiple futures, which are treated as equally plausible, reflecting the inherent uncertainty in the situation, but also what is considered predictable. It is non-prescriptive. It recognizes that successful competitive strategies must be original inventions made by organisations. It therefore employs processes that enhance the capability of the organisation to mobilise resources towards greater inventiveness and innovation.

only include undergraduate textbooks, manuals, reference books, compendiums, atlases, guides and books of abstracts. A request to the publisher through the Said Business School library to determine the number of copies sold was not successful either.

There are indications that scenario planning has increased in usage, particularly since September 11, 2001. A 2006 survey of management tools and techniques by Bain and Company, reported in the *Harvard Business Review* (see Figure I), found "an abrupt and sustained surge… in the use of scenario-and-contingency (S&C) planning tools" (Rigby & Bilodeau 2007:21). The authors also argued that satisfaction with these tools has increased. While care needs to be taken with the way in which scenario planning might be defined by respondents, the survey does suggest the importance of the work is growing.

Figure I: Increase in scenario use and satisfaction



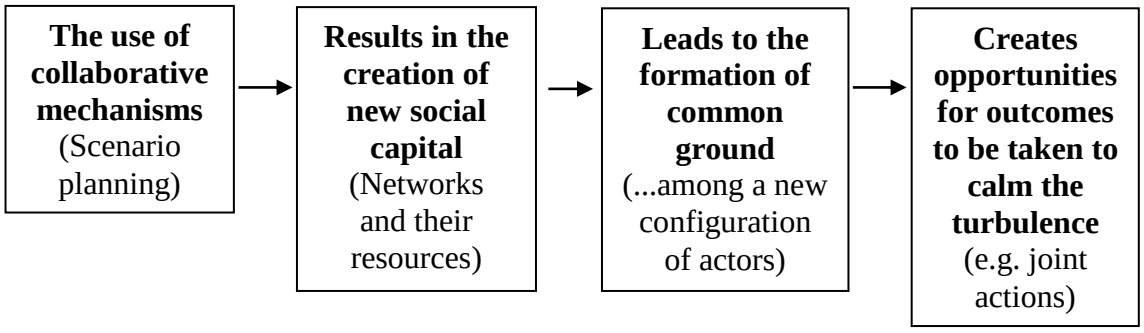
Ramirez et al. (2010) have argued that scenario planning is specifically relevant to turbulent environments – as compared to more placid and stable ones – because of the work's capacity to deal with uncertainty and unpredictability. Practice suggests that a way in which scenario planning addresses turbulence is by providing actors with a mechanism for building new social capital as a form of real options to be drawn upon as strategic circumstances change (Nahapiet 2009). For example, Galer (2004) and Kahane (2004) suggested that the scenario planning undertaken as part of the transition from apartheid to democracy in South Africa built social capital which was vital for the long term success of the country.

The premise of social capital is that investing in social relations can lead to beneficial returns (Lin 2001). Defined in scenario planning terms, social capital can: promote access to, and facilitate the flow of, information (Lin 2001; Adler & Kwon

2002; Sandefur & Laumann 1998); increase solidarity or common interests among actors (Sandefur & Laumann 1998); create and maintain strategic opportunities (Nahapiet 2009); present opportunities for collective action (Adler & Kwon 2002); and influence network members and available resources (Lin 2001; Adler & Kwon 2002).

The creation of new social capital through scenario planning enables actors to reach out to others to create common ground and find ways to address the turbulence together (Ramirez et al. 2010). Collaboration – or "working together" (Heckscher 2007:2) – is regarded as a good approach for dealing with turbulence given further independent action (such as through competition) would likely only exacerbate the situation (Emery & Trist 1965). Collaboration in scenario planning projects builds the new social capital that can facilitate the formation of common ground, resulting in the opportunity for actions to be taken to address the turbulence. The relationship between these concepts is outlined in Figure II.

Figure II. The relationship between scenario planning (collaboration), building social capital and the creation of common ground as conceptualized in this dissertation



My research suggests that building social capital is an important, and under-acknowledged, intermediary factor between collaboration through scenario planning and the formation of common ground. As such, it moves social capital building from

being a by-product of scenario planning that some practitioners were aware of, to being a possible, central, clear, and intellectually rigorous reason for undertaking the work.

However, building new social capital is not easy due to organizations' tendencies towards dynamic conservatism (Schon 1971), where existing relationships become locked in. In addition, authors such as Putnam (1993) and Emery and Trist (1965) have argued that building new social capital takes a long time – decades or generations or even centuries. In environments increasingly characterized by turbulence, faster ways of building new social capital are required.

Drawing on three case studies – the 2004-2007 scenario planning of the European Patent Office (EPO), the 2006-2007 New Media scenarios project in the Strategic Planning Office (SPO) of the Singapore Government, and the 2002 and 2005 scenario planning rounds in The Open University (OU) in the UK – I find that scenario planning can be deployed for the purpose of speeding up the building of new social capital.

Scenario planning entails aspects which in effect are direct investments in creating cognitive social capital resources. These resources are created with the scenario process articulating new conceptual framings and possibilities for the future, reframing the present situation from a unique, purpose-built, set of perspectives (Normann 2001). Such resources enable new systems of shared meaning to be created, in effect building the cognitive dimension of new social capital enabling the more researched structural and relational dimensions to emerge as by-products. Nahapiet and Ghoshal described these three dimensions in 1998, with the latter two being well accepted in the literature. The explicit mention of the cognitive dimension was a new addition on their part, which they argued to be relevant in situations where the creation of knowledge, such as

intellectual capital, is especially salient. Since that time, scholars (Ostrom & Ahn 2003) have suggested that certain forms of social capital are more conducive to being directly built than others.

My research indicates that in the context of making sense of perceived or potential turbulence, leading by investing in the cognitive dimension (as compared to the structural or relational) maybe the most effective. In addition, by directly investing in the creation of new systems of shared meanings, it is proposed that scenario planning can build new social capital more quickly than the centuries that Putnam (1993) and generations that Emery and Trist (1965) said are needed. In the future, therefore, organizations may choose to undertake scenario planning for the deliberate reason of building new social capital – providing another quality criterion[3] by which to judge the work's effectiveness.

RESEARCH QUESTIONS

The main research question and four sub-questions (these are discussed in more detail in the literature review) that guide this dissertation are:

Main question

"How are scenario planning and the building of new social capital related in the context of addressing perceived or potential turbulence?"

Sub-questions

1. "What are the different expressed purposes of scenario planning given they have different implications for understanding how the work builds new social capital?"

[3] I am indebted to Kees van der Heijden for this observation.

2. "How can organizations overcome the challenges of 'lock-in' to build new social capital in the context of potential or perceived turbulence? What role can scenario planning play?"
3. "How can scenario planning build – and speed up the building of - new social capital?"
4. "What is the role of the cognitive dimension in building new social capital in the context of addressing perceived or potential turbulence?"

RESEARCH TOPIC

In this section, I outline the topic of the research by: first, discussing turbulence and causal textures theory as the context within which this application of social capital building with scenario planning is applied; second, defining the concept of social capital; third, discussing key elements in the literature related to building it; and fourth providing an overview of scenario planning as a mechanism for building new social capital.

Turbulence and causal textures theory

My aim here is to explain the theoretical context within which I am exploring the relationship between scenario planning and the building of new social capital. This context is addressing turbulence as it is described in causal textures theory. Ostrom and Ahn (2003:xiv) suggest that "the relevant forms of social capital and their specific roles need to be provided by the theoretical framework in which the concept is located". Thus, my intent here is to describe turbulence and causal textures theory, so as to provide the specific theoretical context within which scenario planning and the building of new social capital are explored in this dissertation.

Causal textures theory has its genesis in work outlined by Emery and Trist in their 1965 article "The Causal Textures of Environments" (see appendix I at the end of this introduction for the rationale behind calling causal textures a theory). These authors argued that the environments of actors or systems (such as organizations) are inter-dependent and causally linked. This idea was earlier outlined by psychologists Tolman and Brunswik (1935:43), who believed that a key feature of the environment for a system is its causal texture – the way "in which different events are regularly dependent upon each other".

Tolman and Brunswik (1935) developed the notion of causal texture by drawing on Pepper's (1942) philosophical root metaphor of contextualism. Pepper argued that philosophical arguments could be grouped into four categories based on a root metaphor or worldview. These four categories are: formism, mechanism, organicism, and contextualism. In the case of contextualism, the underlying root metaphor is "the historic event" or "an act in its context" (Pepper 1942:232), which refers to a belief that all acts must be understood in context, taking into account the past and present. Whether something is true or not, depends on whether the analysis leads to useful action. This is captured in the notion of "successful working" (Pepper 1942:270).

With this background, Emery and Trist (1965) developed a typology of system environments that evolve over time towards more complexity as they become dominated by certain links within systems, between systems and the environment, and within the environment itself. The first environmental type – and the simplest – is the *placid, randomized* environment where goals and noxiants are randomly scattered. The strategy here is simple tactic and the most salient links are those internal to the firm. The second environmental type is the *placid, clustered* one, where the goals and

noxiants are clustered, with the strategy being to migrate to the position that holds the richest possibilities. The most salient links here are those internal to the firm as well as those related to learning about the environment. The third environmental type is that of the *disturbed-reactive*, where there are a number of similar organizations with the strategy being to out-compete each other. The most salient links here are the internal system ones as well as those to do with learning and planning between the firm and its environment. The fourth environmental type they termed *turbulent fields*, arguing that the most salient links here were those in the environment itself.

'Turbulent fields' is the particular environmental type they drew attention to as they argued this was the one becoming more common, even back in the early 1960s. In turbulent environments, it is not only the activities of organizations themselves that create turbulence but "dynamic processes arising from the field itself" (Emery 1967:77). These processes include technology developments, rapid and detailed communications, and social trends which result in a field becoming "richly joined" (Emery 1967:79) and unpredictable. The result can be a sudden instability experienced by actors as a situation where "the institutional arrangements governing the field as a whole start to break down" (Ramirez et al. 2008:21). The impact of the global financial crisis in the field of financial services is an example of turbulence for savers and regulators. Terreberry (1968:593) described Emery and Trist's turbulent field as one where "the accelerating rate and complexity of interactive efforts exceeds the component systems' capacities for prediction and, hence, control of the compounding consequences of their actions".

The three case studies drawn on in this research – the 2004-2007 scenario planning of the European Patent Office (EPO); the 2002 and 2005 rounds of scenario planning within The Open University (OU); and the 2006-2007 New Media scenario

planning project of the Strategic Policy Office, Government of Singapore - illustrate the impact of turbulence for those initiating the work.

In the European Patent Office case, turbulence was experienced as an unfolding, and potentially serious, crisis of legitimacy of both the patent system and the work of the Office. Emerging issues included: the sheer growth in patent filings driven by the increased variety of technologies and sources generating patents (EPO 2007a) prompting the former controller of the Office to describe the situation as "global patent warming" (McGinley 2008). Total per annum European filings increased from 20,000 in 1980 to 180,000 in 2004 (EPO 2011a); the year the scenario planning project commenced. In 2010, this figure had risen to 235,000 (EPO 2011b). This growth was not foreseen and threatened to exceed the processing capacity of the Office. There was also concern and disagreements among stakeholders about the role of alternative property rights approaches such as open innovation; the impact of patents on medical supplies in developing countries; and more generally where the "substantive and legal boundaries of patent protection" should be drawn (EPO 2007b). In this context it was no longer possible for the Office to say it was *"just a technical organization and not affected by this* [political] *discussion"* (as one of the interviewees suggested). The cumulative effect of these challenges led to a sense of turbulence for senior people in the Office and the scenario planning was undertaken to make sense of these developments.

In The Open University case, the scenario planning was aimed at understanding changes occurring in higher education (on-line learning, peer-to-peer phenomena, internationalization, fast urbanization in developing economies, etc.) and the impact of these for the University. For over thirty years the OU had worked effectively to meet

the demand for course places, with student numbers growing eightfold from 25,000 in 1971 to 190,000 in 2001. However, by the beginning of this century changes emerging in its context challenged some of the assumptions upon which the University's strategy had been based. Due to the increasing participation of young people in higher education in the UK, the number of mature aged entrants– the traditional student body or client base of the University – was declining. Emerging technologies and their use by other institutions offering higher education also threatened the predominance of the OU in distance education. A new Vice Chancellor was appointed in 2001 and upon her arrival felt that these developments were not fully appreciated by the majority of OU staff. The aim of the scenario planning was to help staff appreciate the extent and significance of changes occurring in the external environment and to involve them in the institution's strategic planning.

In the Singapore case, a number of new developments in new media provided impetus for the scenario planning, including Government responses that were not as well co-ordinated as usual. There was a sense by senior staffers in the civil service that the Government had insufficient understanding as to what was driving such developments. One of these was the so-called 'white elephant' incident at Buangkok MRT (Mass Rapid Transit) Station, which remained closed when the line was opened as insufficient passengers would fail to cover relevant costs. This led to a show of activism with a resident placing a "white elephant" cartoon outside the station to make a point. The police responded by starting an investigation because no permit for a public display had been received. The investigation elicited a strong response by bloggers and activists concerned as to what this more trivial case meant for how much freedom of expression the Government was willing to allow more broadly. This activism (both

online and in the real world), were factors the new media scenario planning project sought to understand.

Another contributing development to the launching of this scenario planning project in Singapore was the 2006 election – the first general election where new media played a significant role. The 2006 election raised the bar as to what constituted "balanced" coverage and new media spotlighted attention on particular episodes during the election campaign period. The intention of the scenario planning was thus to better understand what forces drove such events and how these might unfold, to sensitize Government (Ministers) and relevant Civil Service Permanent Secretaries to the potential impact of new media on society, public communications and governance.

These sorts of turbulent environments for those initiating the scenario planning have been more recently referred to in the literature as high-velocity environments (Bourgeois & Eisenhardt 1988). High-velocity environments are "those in which there is rapid and discontinuous change in demand, competitors, technology and/or regulation, such that information is often inaccurate, unavailable, or obsolete" (Bourgeois & Eisenhardt 1988:816). These environments are different to those that are merely dynamic as, although these also involve a great deal of change, they are largely predictable (Eisenhardt & Martin 2000:1110). Dynamic environments (Eisenhardt & Martin 2000) are similar to Emery and Trist's disturbed-reactive environments. On the contrary, in high-velocity environments predictability is greatly reduced: "market boundaries are blurred, successful business models are unclear, and market players... are ambiguous and shifting. The overall industry structure is unclear. Uncertainty cannot be modelled as probabilities because it is not possible to specify a priori the possible future states" (Eisenhardt & Martin 2000:1111). It is thus the characteristics of non-linear or

discontinuous change, unpredictability, the uselessness of probabilities and the lack of clarity about how to act that characterize high-velocity or turbulent environments.

Turbulence however is not universally experienced; it only becomes salient for actors (individuals and collectives) who feel their and their system or organization's perceived adaptive capacity is likely to be exceeded as a result of it (McCann & Selsky 1984). Adaptive capacity includes such skills "as the ability for anticipating and making sense of change, acquiring and applying knowledge, executing large scale change processes, and managing complex networks of external relationships" (McCann et al. 2008). Interventions such as scenario planning are aimed at helping actors improve their perceived adaptive capacity in the face of potential or perceived turbulence (van der Heijden 2008).

Importantly, Trist (1983) drew attention to the fact that the environment had two parts – the transactional and the contextual. The transactional environment is made up of the interactions systems (e.g. organizations) have with each other, while the contextual environment is defined by the aggregation of these activities. The contextual environment subsequently provides the boundary conditions for the transactional environment (Trist 1983) and, in turbulent fields, developments in the contextual environment become highly salient. It is the contextual environment that scenario planning focuses on understanding. Importantly, the make-up of the transactional and contextual environment is specific to the organization in question. Thus, British Airways' transactional and contextual environments have a different configuration to, say, those of China Airways, given the differences in the individual characteristics and concerns of these two organizations.

While Emery and Trist's description of turbulence and Bourgeoise and Eisenhardt's and Eisenhardt and Martin's description of hyper-velocity environments are not dissimilar, their views about how to address them are. This has led Selsky et al. (2007) to differentiate between the socio-ecological and the neoclassical approaches to strategy. In the socio-ecological approach, the unit of analysis is the field and the response is for actors to 'co-evolve better' (Leibold et al. 2002) by collaborating with dissimilar others to create common ground so as to collectively shut out and/or move on from the turbulence (Ramirez et al. 2010).

Given the sense of turbulence is moderated by actors' perceived adaptive capacity those likely to be drawn to collaborate are those who feel that such a strategy will increase their capacity to adapt to the changes wrought by the turbulence. In this regard they share the same concern – to reach out to others to form a new network that will shut out the turbulence, thus affording them and their network partners more adaptive opportunities than they would have alone. This strategy differs from the neoclassical or economic perspective where the unit of analysis is the organization and the response is for the organization to 'compete better' by intensifying competition or growing bigger through "opportunistic partnering" (Selsky et al. 2007:78).

The collaborative, field level strategy of the socio-ecological perspective has received far less attention in the strategy literature and thus there are far fewer empirical studies that indicate successful strategies for 'co-evolving better' (Leibold et al. 2002). My research explores scenario planning for its ability to assist actors to reach out to build the new social capital that is needed to facilitate synergistic actions among them to address the turbulence (Emery 1967; Emery & Trist 1965).

Conceptualizing and defining social capital

The general premise of social capital is that "social ties constitute a valuable resource for the conduct of social affairs, enabling individuals and social groupings to achieve outcomes they could not otherwise achieve, or could only do so at extra cost" (Burt, Coleman, and Putnam as cited in Nahapiet 2008:582). Social capital has a long and rich history. For example, Tocqueville, who Putnam (2000:292) cites as the "patron saint of contemporary social capitalists", was writing about social capital (although not using the actual term) in the nineteenth century when he was describing "the unique American propensity to form voluntary associations" (Baker & Faulkner 2009:1535).

Over time, three types of social capital have distilled in the literature –bridging, bonding and linking. Bridging social capital is well known in the work of Burt (e.g. 1992; 2001; 2005), who drew on the earlier work of Granovetter (1973) to argue that the ability to bridge structural holes and access new information from diverse groups is essentially the value of social capital. Linking social capital is similar to bridging capital, except the bridges are to actors that occupy differential hierarchical or power positions (Szreter & Woolcock 2004). Bonding is familiar in the work of Coleman (1988; 1990), where the value of social capital is seen to be in the close connections (strong ties) and affiliations people have with each other.

There are benefits (and limits) to the different types of social capital. For example, Walker et al. (1997) found that different types of social capital play an important role at different times in the formation of an industry network. Bridging was important at the beginning, but bonding enabled the network to stabilize. Similarly, Burt (2001) argued that the value of social capital is in weak ties and bridging structural

holes, but that bonding social capital or strong ties may be necessary to realize this value.

The actual term 'social capital' is most often traced back to Hanifan's 1916 article where he discussed the value of social capital in the context of encouraging community participation in rural schools in the United States. Farr (2004:14) argued that it was Dewey's philosophy that was "the seedbed for the concept of social capital in this era". For Dewey (as quoted in Farr 2004:14), "society means association: coming together in joint intercourse and action for the better realization of any form of experience which is augmented and confirmed by being shared".

According to Woolcock and Narayan (2000) the term was later picked up by urban sociologists in the 1950s (Seely, Sim & Loosely 1956), an exchange theorist (Homans 1961) and an urban development scholar (Jacobs 1961) in the 1960s, and an economist (Loury 1977) in the 1970s. However, the concept really got traction in the 1980s and 1990s with the influential writings of scholars such as Bourdieu (1985), Burt (1992), Coleman (1988), Fukuyama (1995), Nahapiet and Ghoshal (1998), Ostrom (1992), and Putnam (1993). Table I summarizes these latter scholars' conceptualizations of social capital.

Table I. Key scholars' conceptualizations of social capital

Author	Definition of social capital	Application of social capital
Bourdieu (1985)	"the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition – or in other words, to	Expanding the conception of capital, Bourdieu argued that cultural and social capital could be converted into economic capital. He was interested in explaining social stratification and how the elite classes used social capital "as a tool of cultural reproduction" (O'Brien

Author	Definition of social capital	Application of social capital
	membership in a group...which provides each of its members with the backing of the collectivity-owned capital, a 'credential' which entitles them to credit in various senses of the word" (p. 248.)	& O'Fathaigh 2004:6) to generate economic benefits. He described how the amount of social capital a person had depended on the number of network connections they had access to, as well as the amount of capital held by the nodes in the network. Elite classes, more than others, could thus access more resources because of their social capital. This social capital could then be converted for economic benefits.
Burt (1992)	"relationships with other players" (p. 8).	Burt was interested in explaining how social structure has an impact on competition and success, in particular the advantage offered to those individuals able to bridge 'structural holes' or the gap between different actors. Bridging structural holes offers access to new information, ideas, etc. He argued that "much of competitive behaviour and its results can be understood in terms of player access to 'holes' in the social structure of the competitive arena" (p. 1).
Coleman (1988)	"is defined by its function. It is not a single entity but a variety of different entities with two elements in common: they all consist of some aspect of social structures, and they facilitate certain actions of actors – whether persons or corporate actors – within the structure" (p S98).	Coleman saw social capital as a "resource for action" that introduces "social structure into the rational action paradigm". He proposed social capital as a principle of action that modifies the sociological position of "action as governed by social norms, rules and obligations" and the economic position of "acting independently, and as wholly self-interested"

Author	Definition of social capital	Application of social capital
		(pS95). He described how social capital, built in one context, can be appropriated for other purposes, and the role social capital plays in the creation of human capital.
Fukuyama (1995)	"the component of human capital that allows members of a given society to trust one another and cooperate in the formation of new groups and associations" p. 90.	Fukuyama was concerned about the "poverty of contemporary discourse" (p. 101) regarding the role of the state in development. For him, the best way to understand global economic geography is not political economy, but cultural differences and their forms of social capital. Societies with high trust, such as Japan, Germany and the US create large-scale successful firms whereas societies with lower levels of trust (such as China beyond family connections and France where centralizing governments have weakened civil society) create smaller or less successful firms. Thus, "the most important distinctions between nations are no longer institutional but cultural; it is the character of their civil societies, the social and moral habits that underlie institutions that differentiate them" (p. 415).
Nahapiet and Ghoshal (1998)	"the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through	Nahapiet and Ghoshal were interested in explaining the advantage provided by organizations for producing new intellectual capital – defined as "the knowledge and knowing capability of a social collectivity" (p. 245). They argued that social capital assisted in the creation of intellectual capital and, because

Author	Definition of social capital	Application of social capital
	that network" (p. 243).	organizations created high levels of social capital, they were better positioned than markets for building and sharing this type of capital (p. 242).
Ostrom (1992)	Regards institutional rules as social capital: "An institution is simply the set of rules actually used (the *working rules* or *rules-in-use)* by a set of individuals to organize repetitive activities that produce outcomes affecting those individuals and potentially affecting others" [italics in the original] (p. 19).	Ostrom described how, despite significant financial investments in irrigation schemes for farmers, the schemes risked not delivering the possible benefits because the social capital and cooperation (as embedded in relevant institutions) needed to effectively operate these systems had not been built. "Social capital is not automatically or spontaneously produced. It must be crafted" (p. 38).
Putnam (1993)	"features of social organization, such as trust, norms and networks, that can improve the efficiency of society by facilitating coordinated actions" (p. 167).	Putnam was seeking to explain the political and economic differences between the north and south of Italy. He found the north had rich and multiple "horizontal networks of civic engagement" – an active civil society – which created cross-cutting ties that provided the conditions for co-operation. Such cooperation increased "the performance of the polity and the economy" (p. 176). The south had a deficit of such networks and, struggled politically and economically.

The diversity of definitions in Table I. reflects the different purposes to which the concept of social has been applied (Fine as cited in Bartkus & Davis 2009), leading Knoke (2009:1691) to refer to social capital as a "transcendent theoretical concept".

Examining these definitions, three dimensions of social capital become clear - as Nahapiet and Ghoshal (1998) articulated.

The first is structural, whereby the social capital that can be obtained in any situation depends on the networks of relationships actors have access to. Bourdieu (1985) referred to the superior resources that could be gained by the elite classes because of the structure of the networks they had access to; Burt (1992) found that those actors able to broker across structural holes in networks achieved greater success; Coleman (1988) argued that the structure of networks shaped an actor's options modifying the rational action paradigm; Putnam (1993) saw membership in cross cutting associations facilitating action for the benefit of society; while Nahapiet and Ghoshal (1998) suggested that the networks formed in organizations provided them with an advantage in producing intellectual capital.

The second feature of these definitions is their relational dimension, whereby the quality of relationships within the network affects social capital outcomes. Fukuyama (1995) for example argued that societies characterized by high levels of trust fared better economically than those where trust had been eroded because of strong family connections or dominant and centralizing governments; Putnam (1993) also saw high levels of trust – as well as norms – created through the existence of membership in cross cutting associations being the reason for economic and political success in societies such as Italy and the US; while Bourdieu (1985) described how norms become socialized in elite classes leading to cultural reproduction. Ostrom (1992) showed how an agreed set of rules or norms can facilitate co-operation among actors ensuring the successful introduction of new technologies; and Nahapiet and Ghoshal (1998) demonstrated the importance of relational factors such as trust, norms, obligations, expectations, and identification for building intellectual capital in organizations.

The third feature of these definitions is the cognitive dimension, that is, shared systems of meaning which make communication and interpretation possible among a group of actors. For example, Nahapiet and Ghoshal (1998) identified factors such as shared language, codes and narratives as being essential for facilitating communication in organizations enabling them to successfully create intellectual capital. The cognitive dimension, while not explicitly mentioned in many of the definitions in Table I, is nonetheless alluded to suggesting it has not been sufficiently explored in the literature. For example, Putnam's (1993) work points to the possible benefit of multiple cross-cutting associations being not only the creation of trust but also shared systems of meaning, thereby making communication and interpretation among them easier. Bourdieu's (1985) work also indicates that shared systems of meaning are likely to be an important component of membership of the elite group and the way in which the culture of the group is reproduced; while Burt (2010) has recently rethought the benefit of brokerage across structural holes to be not so much the information gained but the cognitive and emotional skills produced in the process.

While the existence of multiple definitions has led some scholars to condemn social capital as "definitionally chaotic" and conceptually incoherent (Fine 2010:5) others have argued that this diversity is a strength. For example, Mearman (2006:48) argued that uniformity of meanings is not always positive - that they reduce "flexibility and prevent change and therefore make an approach analytically poorer". While a key strength of social capital maybe its timelessness and ubiquitousness, to be operationalized for a specific research project, the concept needs to be defined in relation to the context in which it is being explored (Fine 2001; Bourdieu 1985; Bowey & Easton 2007; Foley & Edwards 1999; Ostrom & Ahn 2003).

Of the definitions discussed above, Bourdieu's (1985) would be useful in the context of explaining how social capital is built and maintained by elites; Burt's (1992) would be useful in explaining the benefits to individuals of bridging structural holes; Coleman's (1988) would be relevant for understanding the "forcing function" of social capital in producing human capital; Fukuyama (1995) and Putnam's (1993) definitions would be useful for understanding how the building of trust and norms in societies results in superior political and economic outcomes; and Ostrom's (1992) work would be valuable for understanding how rules or institutions get enacted as a form of social capital and the benefits that arise from these.

While each of these definitions sheds some light on the possible relationship between scenario planning and the building of new social capital to address turbulence – the context of this research - it is Nahapiet and Ghoshal's emphasis on social capital and its role in the creation of intellectual capital – defined as "…the knowledge and knowing capability of a social collectivity" - that seems most relevant. Their definition is particularly relevant to scenario planning because there is also a well-accepted view in the literature that scenarios are a valuable form of intellectual capital for addressing the inherent uncertainty of the future (see for example de Geus 1988; 1997; van der Heijden 2005; Wack 1985a; 1985b).

In addition to the focus on the creation of intellectual capital within organizations, Nahapiet and Ghoshal's definition has a number of other advantages. First, it explicitly incorporates the three dimensions of social capital (discussed further below) enabling a detailed analysis of the concept; second, it is arguably the most cited social capital article in organizational studies being cited 1,807 times in the Social Sciences Citation Index as of 16 February 2012. This is the largest number of citations for an article with social capital in the title (in the Index). Third, their definition has

proved useful in a number of organizational empirical research endeavours. For example, Maurer and Ebers (2006:263) used this definition because it offered "a reasonably comprehensive conceptualization of social capital that accommodates major concerns of the extant literature." For Bolino, Turnley and Bloodgood (2002:506), this definition integrates "many of the various facets discussed in previous work" and examines "social capital within organizational settings". Similarly, for Inkpen and Tsang (2005:151), the definition is useful because it "accommodates both the private and public good perspectives of social capital".

To recap, Nahapiet and Ghoshal (1998:243) defined social capital as:

> the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network.

And as mentioned above, the authors outlined three dimensions of social capital. These are:

The *structural* – "the overall pattern of connections between actors – that is, who you reach and how you reach them" (Nahapiet & Ghoshal 1998:244). Here they included concepts such as network ties (their existence or absence), network configuration (such as density, connectivity and hierarchy), and appropriability – the idea that existing connections can be used for purposes other than what they were created for (Coleman 1988).

The *relational* – "describes the kind of personal relationships people have developed with each other through a history of interactions" (Nahapiet & Ghoshal 1998:244). Here

they included trust and trustworthiness, norms and sanctions, obligations and expectations, and identity and identification.

The *cognitive* – "refers to those resources providing shared representations, interpretations, and systems of meaning among parties" (Nahapiet & Ghoshal 1998:244). This dimension captures the importance of inter-subjectivity – that is, the "variety of relations among [actor's] perspectives" (Gillespie & Cornish 2009:19). As circumstances change, new perspectives among a new set of actors has to be created. Nahapiet and Ghoshal (1998) argued this dimension has received far less attention in the social capital literature.

Nahapiet and Ghoshal (1998) separated these dimensions for the purposes of undertaking a more fine grained analysis of social capital. However, they were also careful to stress the inter-dependencies or interactive effects (Bresnen et al. 2005) between them. For example, new actors (the structural dimension) coming into a situation can introduce new logics (Campbell as cited in Scott 2000) resulting in new shared systems of meaning being created (the cognitive dimension) and in the process providing the opportunity for trust to be built (the relational dimension). Thus, while I acknowledge the inter-dependencies between the dimensions in this research – and indeed this is explored – the value of disaggregating them provides the opportunity to determine the "relative merits of alternative approaches to developing organizational social capital" (Andrews 2010:599)".

Building social capital

The actual building of social capital has not been extensively explored in the literature (noted by Adler & Kwon 2002; Bolino et al. 2002; Edelman et al. 2004; Ellinger et al. 2011; Pastoriza et al. 2008). This is despite the earliest mentions of the

term being specifically in reference to its building (see Hanifan 1916). Consequently, scholars such as Nahapiet (2008:599) have argued that "we have much to learn about building social capital", while Dolfsma et al. (2009) spoke of the need to open the 'black box' of how social capital emerges. One of the key issues in the literature is whether social capital is built through direct and deliberate investments or if it emerges as a by-product of investments in other activities.

Social capital built directly and deliberately. Bourdieu (1985:249) believed that social capital can be deliberately designed because it is not a natural or social given and must be achieved through "endless effort at institution". As he wrote: *"*the network of relationships is the product of investment strategies, individual or collective, consciously or unconsciously aimed at establishing or reproducing social relationships that are directly usable in the short or long term". Similarly, after extensive empirical research, Maurer and Ebers (2006) concluded that an organization can take purposeful action to configure and reconfigure its social capital over time. Furthermore, as Kramer (2006:23 and 2009:251) noted, "Social capital…does not emerge as a bolt from the blue or simply fall from the sky. As with any form of collective resource, it must be created, nurtured and maintained". Such authors have thus argued there are deliberate and direct actions that can be taken by actors to build social capital.

Social capital emerges as a by-product of other activities. The alternate view is that social capital emerges as a by-product of investments made in other activities. Coleman (1988) took this view, arguing that social capital becomes available to members in an organization once that organization is established for a particular purpose. However, he also believed that "intentional or constructed organization represents a direct, purposeful

investment in social capital" (as cited in Nahapiet & Ghoshal 1998:257). Baker (2000:22) similarly took the by-product view, quoting the Zen saying "if you want to go north, head south" and citing Viktor Frankl's 'paradox of happiness'. Frankl argued that happiness cannot be pursued directly but emerges from participation in rewarding activities. Similarly, Baker argued that social capital emerges from participation in meaningful activities.

Other social capital scholars have argued a more nuanced position between these two. Nahapiet (2008; 2009) has suggested there is evidence in the strategic management literature to support both positions. She cites the work of Lovas and Ghoshal as an example of the by-product view – that top management provide the conditions that influence how people spend their time, which in turn shapes the social capital that is built. On the other hand, she said the work of Maurer and Ebers (2006) - showing how biotechnology start-ups were able to reconfigure their social capital as they became established - is indicative of the very deliberate investments organizations can make to build social capital (Nahapiet 2009). Ostrom and Ahn (2003) suggested that different forms of social capital may be more able to be directly and deliberately built than others. For example, they argued that reciprocity, trust and networks are more likely created as a by-product of activities while institutions, with their focus on "crafting rules", can be more directly created. As Ostrom and Ahn wrote (2003:xxxi): "Investing in the process of examining current conditions and likely future problems and coming to a decision about the most appropriate set of rules to be used to govern future interrelationships is obviously as much an investment decision as any investment in physical infrastructure". For these authors, the key question is the degree to which the choice to participate in activities is "a self conscious *investment*" or "a *consumptive* activity with an unplanned flow of benefits" [italics in the original].

Other scholars have noted challenges in building new social capital (Lin 2001) because of organizations' tendencies towards dynamic conservatism (Schon 1971), where relationships become 'locked-in' over time (Maurer & Ebers 2006). Similarly, researchers have drawn attention to the time required to build new social capital. Putnam (1993) suggested that social capital is a historic and almost accidental endowment accumulated over decades – or even centuries – rather than something that can be quickly created. Emery and Trist (1965) suggested it can take generations for values to change.

Summary of the social capital discussion

The premise of social capital is that investing in the creation of networks of relationships enables actors to achieve outcomes they could not otherwise attain (Burt, Coleman and Putnam as cited in Nahapiet 2008). This premise has been explored in a number of contexts including the creation of intellectual capital in organizations by Nahapiet and Ghoshal (1998). Given scenario planning's emphasis also on the creation of intellectual capital (de Geus 1988; Galer 2004; Kahane 2004; van der Heijden 2006; Wack 1985a) as well as the empirical and theoretical regard with which Nahapiet and Ghoshal's work is held in organizational studies (as evidenced by the number of citations in the Social Sciences Citation Index), their definition is the one used in this dissertation to operationalize the concept of social capital.

This section has also discussed how social capital is built – either directly or as a by-product of other activities. The literature supports both positions (Nahapiet 2008; 2009) and doesn't find for either exclusively suggesting that some forms of social capital are more amenable to being directly built than others (Ostrom & Ahn 2003).

This being the case, social capital may be able to be built more quickly than scholars such as Putnam (1993) have previously suggested.

Scenario planning as a mechanism for building social capital to address turbulent environments

My research explores the use of scenario planning as a mechanism for building social capital to address turbulence. A mechanism – or what Feld (1981:1025) called a "foci" – is regarded as essential for building social capital (Baker 2000). A foci is "any social, psychological, or physical entity around which joint activities of individuals are organized".

It is important to note that the scenario planning in the three cases I studied did not have the 'building of new social capital' – stated in these terms – as an ex-ante objective of the work. However, the work in each case did include a social capital relevant aim to reach out with, and to, others to appreciate the forces causing the potential or perceived turbulence, and to create common ground – as expected from the perspective of causal textures theory. In the EPO, the work aimed to provide thought leadership in the global patenting and intellectual property area as well as to bring in voices that had for a long time remained, and been considered, external to the EPO, as well as to develop shared understanding with them and across the Office. For The Open University, the scenario planning was introduced by the new Vice Chancellor and sponsored by the Vice Chancellor's Executive (VCE) to reach out to staff to involve them in the institution's strategic thinking and planning. In Singapore, the scenario planning was led by staff within the Strategic Policy Office to sensitize government (ministers) and the civil service (permanent secretaries of relevant government

departments) to the potential impacts of new media on society, public communications and governance.

In this dissertation, the desire to form common ground (as outlined in causal textures theory) is seen to be premised on the need to build new social capital. Scenario planning provides a collaborative mechanism for reaching out to others to build new social capital thereby facilitating the creation of common ground and providing the opportunity for new actions to be taken to address turbulent conditions. This reaching out component of scenario planning, and even its importance, has been suggested as occurring in practice (Galer 2004; Kahane 2004) but has not yet been theorized.

Scenario planning, like social capital, has a rich and long history. It was used in the military before being adapted by Herman Kahn at the RAND Corporation in the 1950s as part of the strategic and military work he was doing for the US government (Zentner 1982). The term 'scenario' (in relation to planning) appeared in the public domain in 1967 with the publication of Kahn and Weiner's book, *The Year 2000*. In this book the authors defined a scenario as a narrative that described "hypothetical sequences of events constructed for the purpose of focusing attention on causal processes and decision points" (Kahn & Wiener 1967:6). Given the increasing environmental turbulence in the 1960s, organizations started to look for alternatives to single point forecasts. As a result, scenario planning migrated into organizations and in the process was adapted for business-planning purposes from earlier military and public policy applications.

During the 1960s, scenario planning techniques were further pioneered in the US and Europe, leading to what has now been recognized as three discrete traditions (Bradfield et al. 2005). These traditions are: probabilistic modified trends; la

prospective; and intuitive logics. The intuitive logics tradition has come to dominate scenario practice, with a study by the Hart-Rudmann Commission finding that 70% of scenario projects draw on this tradition or a derivative of it (MacKay & McKiernan 2006). This tradition is also known as the 'Shell approach', indicating the significant impact Shell practitioners and alumni have had on the development of the field.

Bradfield et al. (2005) argued that the differences in the traditions largely revolve around the former two placing more emphasis on experts developing the scenarios, the use of detailed computer modelling, and working with the most probable scenarios. The intuitive logics school, on the other hand, foregrounds the participants as the ones to develop the scenarios (although they draw on expert knowledge), does not use detailed computer modelling (although key variables are quantified), and regards all scenarios as equally probable.

The aim of the intuitive logics approach is to tap the intuition and expertise of participants so that they can better appreciate the reasons for, and potential consequences of, the turbulence. Philosophically, this approach emphasizes the social process of actors in the situation constructing and testing explanations and models (Hatch & Cuncliffe 2006) as compared to approaches which regard 'answers' to be better gained through more traditional, scientific research methods such as modelling and the reliance on experts. (See the next section for a fuller explanation of the philosophical assumptions underpinning the intuitive logics approach; turbulence and this research more generally.)

The intuitive logics tradition is the one that was used in the three case studies in this research. It is made up of several activities that can be grouped into five phases as per Shell International's (2003) guide.

Table II: Scenario planning activities (intuitive logics approach)

Phase	Overview	Activities
1. Preparation	Clarifying goals and resources to design the inquiry.	Conversing with project sponsors. Designing the process.
2. Pioneering	Undertaking research and outlining the scenarios.	Interviewing stakeholders and 'experts'. Researching – document based. Facilitating workshops with stakeholders and 'experts'.
3. Map-making	Developing the scenarios and gaining endorsement.	Writing the scenarios. Consulting with stakeholders and 'experts'. Liaising with project sponsors.
4. Navigation	Communicating and using the scenarios.	Publishing the scenarios (soft and hard mediums). 'Launching' the scenarios. Using the scenarios for 'strategic conversations' within the focal actor and among actors in the wider network.
5. Reconnaissance	Using the scenarios to develop implications, interpret signals, share perspectives and recognize differences.	Developing strategic 'plans' from the scenarios. Using the scenarios to detect weak signals (an early warning system). Using the scenarios in an ongoing way.

My research explores the design and execution of these activities for their capacity to build new social capital to address potential or perceived turbulence.

RESEARCHING SCENARIO PLANNING AND THE BUILDING OF NEW SOCIAL CAPITAL

To address this dissertation's research question – "How are scenario planning and the building of new social capital related in the context of addressing perceived or potential turbulence?" – two research design strategies were pursued. However, prior to discussing these, the ontological and epistemological assumptions underpinning this research are outlined. This is particularly important as turbulence has been conceptualized both objectively and subjectively.

Ontological and epistemological assumptions of the research

Emery and Trist (1965) originally characterized turbulence as an objective characteristic of the environment shared by systems such as organizations. This is why turbulence can be regarded as a particular environmental texture (Selsky et al. 2007). Emery and Trist sought to extend open-systems theory (von Bertalanffy 1950) by focusing not only on the exchange processes between the system and the environment, but on the processes in the environment itself which in turn determine the conditions of those system-environment exchange processes. The outcome was the four environmental textures outlined in their article of which the most complex and interconnected was those that were turbulent. They took turbulent environments to be those that were most likely to exceed the adaptive capacities of individuals and collectives and as such, Emery and Trist conceptualized turbulence as an objective condition that threatened actors' viability.

Later research by McCann and Selsky (1984), while concurring with Emery and Trist that turbulence is an objective characteristic of the environment, emphasized its subjective nature. That is, they argued that not all systems or organizations experience

turbulence in the same way or adapt to it as effectively. An environment is not regarded as turbulent if individual and collective actors within that organization perceive they have the adaptive capacity to cope with it (personal communication, John Selsky, 16 January 2012). Perceived adaptive capacity relates to the available resources (financial, human, capital, etc.) and skills (abilities and technologies for understanding and acting effectively on conditions) an individual and a collective understands it has for addressing the turbulence (McCann & Selsky 1984; McCann et al. 2008). Thus, actors interpret the uncertainty caused by the turbulence in different ways (Selsky et al. 2007) and only when this level of uncertainty threatens their "continuing adaptation", do they regard the environment as turbulent (McCann & Selsky 1984:461).

These two positions have implications for the building of new social capital. Emery and Trist, from their original objective view, argued that the best adaptive response to turbulence was for systems to reach out to others to build new connections so as to simplify and address the turbulence within the field. On the other hand, the subjective condition of turbulence suggests that in the process of doing this, the perceived adaptive capacity of individuals and collectives will moderate what new social capital is built and how. That is, if some people do not perceive that theirs or their organization's adaptive capacity is at risk, they may see no need to go to the effort of undertaking scenario planning and building new social capital. Thus, each of these positions emphasizes different aspects of turbulence. Emery and Trist stress its objective nature – that is, as a distinctive texture of the environment - while McCann and Selsky stress the actors or system members' subjective perception of that turbulence.

Thus, it can be argued that turbulence and causal textures theory are based on a realist ontology and a relativist epistemology. That is, the theory can be taken to assume that there is a world independent of the way in which actors represent it (Searle 1995) but it can only ever be known in a mediated way (Fleetwood 2005). This is the position of critical realism (Bhaskar 1978; Collier 1994) and describes the philosophical assumptions I am making in this research.

Critical realism views underlying structures and mechanisms as responsible for causing events or phenomena in the world (e.g., those giving rise to the turbulence). These structures generate observed and non-observed phenomena as well as harbor 'unexercised powers' or potential tendencies (Collier 1994). The pursuit of research is to determine how these structures and mechanisms causally give rise to patterns among events (Harre as quoted in Tsang & Kwan 1999). Thus, scenario planning is a way for actors to research and determine what is giving rise to the turbulence they are experiencing.

Collier (1994) used the metaphor of 'digging deeper' to describe the intent of research within critical realism as the ongoing discovery of underlying structures or mechanisms. As Bowey and Easton (2007:280) note: "Causality is not a matter of confirming the regularity of causation but more a matter of determining what causal powers or generative mechanisms exist (Blaikie 1993) and how the underlying structures and mechanisms affects outcomes or events (Sayer 1992)". Research questions within critical realism are thus aimed at "how and why" (Easton as quoted in Bowey & Easton 2007). In addition, the orientation of digging deeper (Collier 1994) to discover underlying structures means that research results are always open to being refuted and that "verification and falsification are never conclusive" (Kwan & Tsang

2001:1165). In the meantime, if a finding can't be refuted, belief in it is justified (Bell 1997).

Actors according to critical realism strive to understand the world that is independent of their representations of it. However, these actors acknowledge that this striving is a human endeavor and by definition, circumscribed. That is, "people may apprehend different...realities according to the varying paradigmatic, metaphorical or discursive conventions deployed through human agency" (Johnson & Duberley 2000:154). This accounts for why individual and collective actors regard turbulent conditions differently - depending on their perceived adaptive capacity. The production of knowledge from a critical realism perspective is also regarded as a social process – that is, actors construct and test explanations and models (Hatch & Cuncliffe 2006) in seeking to understand the phenomena.

Critical realism shares the positivist's view that there exists a world independent of consciousness, but differs in that it rejects the epistemology of empirical realism. That is, critical realists do not agree with the view that what can be known is only that which can be observed and measured (Johnson & Duberley 2000). In addition, critical realists disagree with positivists by suggesting that any understanding of reality is socially mediated and constructed. Conversely, critical realism shares with constructionism this understanding of the world being socially mediated (Newton et al. 2011:19), but differs from constructionism in viewing reality as something that exists independent of actors representations of it. Finally, critical realists do not conflate ontology and epistemology as both positivists and constructionists tend to (Johnson & Duberley 2000). For example, in differentiating between the subjective and objective approaches to social science, Burrell and Morgan (1979) grouped nominalism in

ontology with anti-positivism in epistemology (the subjective domain) and realism in ontology with positivism in epistemology (the objective domain). However, as Crotty (2003:11) has noted, "Realism in ontology and constructionism in epistemology turn out to be quite compatible".

Critical realism has already been established as a philosophical foundation for scenario planning and futures studies more broadly (Bell 1997; van der Heijden 2000). Bell (1997:226) showed how critical realism's "unexercised powers" provided a valid basis for knowledge about the future. Terming future related knowledge "surrogate" he described it as a form of knowledge that substitutes "for what we cannot yet factually know because it hasn't actually happened yet". We can act on this knowledge 'as if' it was true if the reasons given for it are plausible - keeping in mind that it will be constantly open to revision as time unfolds. Patomaki (2006) has also argued that critical realism explains the existence of multiple and alternative futures; van der Heijden (2000) showed how scenario planning is aimed at understanding the casual logic of underlying structures and mechanisms giving rise to new patterns of events; while Walton (2008) drew on critical realism to suggest that scenario planning can be evaluated in terms of decision making utility rather than testable knowledge claims.

Perhaps, most significantly for the intuitive logics school of scenario planning, Wack (1985a; 1985b) showed how scenario planning helps re-align managers' mental models (or their microcosms) with changes in the external environment (the macrocosm). The belief that changes in the environment can cause mental models to become outdated is evidence of critical realisms' position that there is an objective reality (understood in multiple ways). Alternatively, the importance of remarkable

people (van der Heijden 2005) in the intuitive logics school is an indication of the emphasis on subjective perspectives, similar to that of the constructivists' position.

There are a number of assumptions critical realism implies for my research. First, I assume that turbulence is a potential or actual characteristic of the environment of those organizations undertaking the scenario planning, as perceived by the key individuals within them; second, that scenario planning would not have been initiated if those responsible for the work did not perceive that the turbulence threatened theirs or others adaptive capacities; third, that scenario planning is a research process for participants to 'dig deeper' (Collier 1994) to understand the turbulence and to provide causal explanations giving rise to new patterns between events; fourth, through this digging deeper scenario planning facilitates the reaching out to others – to build new social capital – so as to better understand and address the turbulence and increase actors' perceived adaptive capacity; and fifth, that instigators of scenario planning projects may understand the threat of turbulence differently from others which in turn impacts how and what new social capital is built.

While my research recognizes the existence of turbulence in the external environment, my focus is not on it per se, but on how scenario planning can be used by purposeful agents to build new social capital in the context of the perceived turbulence. This emphasis places my research just left of centre – 'west' - of Burrell and Morgan's (1979) subjective-objective dimension regarding the assumptions about social science (i.e., towards the subjectivist side). The subjectivist approach gives primacy to the experience of actors. However, with critical realism largely emerging after Burrell and Morgan's work, this mapping is problematic given the authors conflate ontology and epistemology (Johnson & Duberley 2000) – as discussed above. The other dimension

giving rise to Burrell and Morgan's typology of sociological paradigms relates to the nature of society and whether the focus of theory is on explaining regulation or change. As my research is focused on change (given the context of addressing perceived turbulence) my research can be mapped 'north' of this dividing dimension.

The philosophical assumptions I have outlined above inform the dissertation's research design. For positivism, because of its belief in empirical realism, research methods are largely based on deductive tests modelled on scientific rigor, using quantitative methods (Burrell & Morgan 1979). Alternatively, for constructivisim, with its belief in the world being socially mediated, research methods are more inductive, aimed at understanding the perspectives of those in the situation (Burrell & Morgan 1979). In the case of critical realism, with its belief that there is a world independent of the way in which actors represent it (Searle 1995) but that it can only ever be known in a mediated way (Fleetwood 2005), multiple and mixed (where needed) methods are proposed (Johnson & Duberley 2000). There are two reasons for this. The first is to enable an exploration of both structural relations and people's subjective interpretations of those relations; and the second is to illuminate different aspects of the phenomena being researched (Johnson & Duberley 2000).

Consequently for this dissertation I designed two research strategies using multiple methods. These are outlined below.

Strategy one

The first strategy utilized metaphors as outlined in Morgan's (1986) *Images of Organizations* to order the scenario planning literature (paper one) and to structure the two bodies of literature - scenario planning and the building of social capital - so that they could be compared (the literature review). Epistemologically, the use of multiple

metaphors enabled the different perspectives within the two bodies of literature to be illuminated, differentiated and subsequently compared. The use of metaphors does not deny an objective reality, but helps people to subjectively grasp that reality (Morgan 1996).

Metaphor is a process whereby familiar knowledge (the source or base domain) is applied to something that is new and relatively unknown (the target domain) (Grant and Oswick 1996). Lakoff (as cited in Mangham 1996) referred to the process as one of structuring whereby the source domain is used to structure the target domain. This structuring is what yields inferences and insights. These descriptions are why writers argue that metaphors are far more than a figure of speech, constituting instead a powerful cognitive mechanism for helping people make sense of new, complex or abstract situations (Lakoff & Johnson 1980; Morgan 1996).

The study of the use and role of metaphors in organization studies owes much to Morgan's work (Chia 1996). Back in the mid-1980s, he identified eight dominant metaphors of organization and organizing: *machines* (managing and designing organizations as machines with interlocking parts)*; organisms* (understanding and managing organizational 'needs' and environmental relations)*; brains* (viewing and designing organizations as brains thereby highlighting information processing, learning, etc); *cultures* (managing and designing organizations by focusing on values, beliefs, etc.); *political systems* (understanding the different interests, conflict and power relations shaping organizations)*; psychic prisons* (understanding organizations as prisons where people become trapped by their own thoughts and beliefs)*; flux and transformation* (understanding the logics of change that shape organizational life)*; and*

instruments of domination (understanding the potential exploitation that occurs within and by organizations).

The relevance of these metaphors is evident in the publication of three editions of his book *Images of Organization* over 20 years and their significant overlap with the nine metaphors most used by organizational scholars (between 1993 and 2003) as identified by Cornelissen et al. (2005). While citations for books is difficult to determine due to their no longer being included in the Social Sciences Citation Index (personal communication with Said Business School library staff 16 and 20 February 2012), the value of Morgan's work is suggested in the number of citations for his 1980 article *Paradigms, metaphors, and puzzle solving in organization theory.* It is the third most cited article in the Social Sciences Citation Index with metaphor in the title. The first two are specific to certain areas - negotiation and team mental models.

The reasons for using Morgan's metaphors to order the literatures in this dissertation are threefold. First, Morgan is regarded as "largely responsible for the prominence which metaphoric thinking has attained in organization studies" (McCourt 1997:520) and his work has been described as: path-breaking, dominating "our understandings of metaphors and their applications to organizations" (Oswick et al. 2002:294); as a classic (Cornelissen et al. 2008); and as a highly influential (Grant & Oswick 1996; Mangham 1996) body of work that rewrites organizational theory (Schon as cited in Grant & Oswick 1996). In addition, Morgan's metaphors have been used empirically in several organizational studies (see, for example, Inkson 2004; Karimalis 1996; Wilson 2000; Winter & Szczepanek 2009).

Second, Morgan's metaphors are specifically derived from organizational theory as compared to other disciplines such as organizational development or organizational

communications. For example, there are sets of metaphors in the communications area (Putnam et al. 1996) and careers (Inkson 2004) which are insightful but nonetheless specific to those disciplines. Morgan's metaphors on the other hand, are anchored in organizational theory providing a broader and more relevant framework for considering the scenario planning and building social capital literatures.

Third, Czarniawska-Joerges (1993:25) argued that Morgan's metaphors provide essential insight into the "values" or "driving forces" at work in organizations. As she wrote: "By studying metaphors of the field we can learn a lot about what we always wanted to know and never knew how to ask: about the values and beliefs held by organizational members". Given, scenario planning has traditionally been a practice-led field, her work suggests that Morgan's metaphors are helpful for understanding how scenario planning has been conceptualized by not only scholars but also practitioners.

However, the use of metaphors in organizational studies and the work of Morgan in particular, are not without their critics. First, those who take a more positivist philosophy towards social science research are concerned that metaphors lead to a lack of precision and hinder research progress (Tsoukas 1993). Because metaphors are regarded as figurative devices it is argued they cannot provide the clarity of language that is needed from which testable hypotheses and theories can be developed (Bourgeois & Pinder 1983; Pinder & Bourgeios 1982). Scholars taking this position have argued instead for the use of literal language that is "rooted in observable *organizational* phenomena" [italics in the original]" (Pinder & Bourgeios 1982:647). Tsoukas (1991:582) subsequently proposed a reconciliation of metaphorical and literal language seeing their roles as complementary. He argued that metaphorical language could be used to develop literal language – that with the aid of the researcher, metaphorical

language can be the "seed of literal language". Another related critique from a positivist perspective is how 'goodness of fit' is to be judged? That is, the usefulness of a metaphor relies on those doing the interpreting and 'fit' cannot be judged in a scientific way (Grant & Oswick 1996).

Morgan (1983; 1996) replied to the positivists' critiques by reiterating the perspective that metaphor is more than figurative language – that it is a cognitive device central to how people see and make sense of the world. Thus, he argued, it is not possible to eliminate them. Twenty years later, Cornelissen (2005:752) acknowledged that scholars have now "accepted that metaphor clearly does exist in organizational theory". McCourt (1997:515) also noted that Morgan has "convincingly demonstrated that the traditional assumption that language is only scientific if it is literal, is not well-founded and metaphorical language has a valid place in scientific inquiry". However, he believed Morgan adopted an overly strong constructivist position which risked metaphors being seen as something more than they should be – as "a useful analytic technique".

Critical realism concurs with Morgan's view that the world can only be known in a socially mediated way and thus it is not possible to derive a "theory-neutral observational language" (Johnson & Duberley 2000:156). However, taking the perspective that there is a reality that exists beyond people's representations of it, a critical realist would agree with McCourt (1997) that metaphors are best seen as useful analytic devices for striving to understand that reality.

A second critique comes from those scholars who feel that metaphors and the way Morgan has conceptualized them, do not go far enough in understanding their role in generating new and novel insights. Cornelissen (2005), drawing on cognitive science,

suggested that metaphors not only result in comparisons, but new and emergent thinking as the links between the two domains are forged. Oswick et al. (2002) argued that metaphors limit the generation of new knowledge because they concern themselves with similarities between the source and target domains. These authors instead called for the use of irony which focuses on the dissimilarities between the two domains and is thus more likely to generate novel ways of seeing.

While Morgan (1983) has reminded scholars that metaphor relies on a balance of similarity and difference to be effective in generating new insights, this stance is not regarded as sufficient for Oswick et al. (2002:301). Despite this criticism, these authors have acknowledged that metaphor does have a role to play in helping "focus, crystallize, and better understand existing perspectives, theories and paradigms". Thus, even though there are disagreements about the amount of similarity and difference embedded in metaphors, for the sake of ordering two *existing* bodies of literature in this dissertation (scenario planning and the building of social capital) the use of Morgan's metaphors would still seem to offer value.

A third critique of metaphors and Morgan's work is that metaphors can result in ideological distortions (Grant & Oswick 1996). Tinker (1986:363) for example regarded Morgan's advocacy of metaphorical language as being "too indiscriminate", leading to reifications that support powerful ideological interests. That is, a level playing field does not exist as to which metaphors are proposed and become dominant and that these metaphors lead less powerful scholars and practitioners to underestimate their individual agency for acting and changing a situation. Therefore, acknowledging and advocating for the increased use of metaphorical language without attending to the political and social context within which it is embedded can be problematic.

Morgan's metaphors are based on existing organizational theory and thus viewed *individually* are potentially open to reflecting a dominant ideological position. However, as a *set,* his metaphors address such concerns. That is, no metaphor is privileged over others and each deconstructs the previous one through to the point of radical politics – *Instruments of Domination*. In fact, of the most popular metaphors used in organizational studies documented by Cornelissen et al. (2005) there is no equivalent metaphor of Morgan's radical politics. Thus, Morgan's metaphors can be regarded as covering a range of theoretical positions in organizational studies rather than reinforcing only dominant perspectives.

Of these critiques, Oswick and Grant (1996:214) argued that "With respect to metaphor, the sand castle built by Gareth Morgan…is by far the biggest and most impressive…The common feature of all these attacks is their failure to leave more than a few minor battle scars …". Thus, given the dominance of Morgan's work, the rationale for using his metaphors in this dissertation is derived from a Lockean inquiring system perspective (Churchman 1971).

Locke argued that the ultimate arbiter of whether a fact is 'true' is the degree of consensus among a group – that is, peer review. This is a form of inter-subjectivity which can be defined as a "mutual awareness of agreement or disagreement" (Laing, et al. as cited in Gillespie & Cornish 2009:19) among people's perspectives. A Lockean inquiring system is compatible with critical realism given 'truth' is the result of people engaging on an on-going basis to better understand the phenomenon, rather than truth being based on an objective standard (more typical of a Leibnizian inquiring system). Given the significant foundational role Morgan has played in bringing attention to the role of metaphors in organizational studies and the subsequent level of engagement with

his work – including the critiques discussed above – as well as the critical realist stance of this research, a Lockean inquiring system rationale seems justified.

Thus, using Morgan's metaphors, the two bodies of literature in this dissertation – scenario planning and building social capital – are ordered - using a sample of approximately 672 pieces (142 focused on building social capital and 530 on scenario planning). The ordering of the scenario planning literature builds on my MSc (Management Research) dissertation, *An initial classification of the organizational scenario literature based on Morgan's organizational metaphors.* However, that sample totalled only 179 pieces. The literature review compares and contrasts the two bodies of literature, while the first paper drills into the scenario planning literature to explain patterns, gaps, etc. Both chapters provide an insight into the literatures, the relationships between them, and the opportunity to contextualize the findings from the empirical work.

Strategy two

The second research strategy involved fieldwork using three in-depth case studies (Yin 1994; 2003) – the scenario planning of the European Patent Office; the Strategic Policy Office, Public Service Division in the Singapore Government, and The Open University (two rounds of scenario planning were researched within this case). The intent of the fieldwork was to undertake an exploratory study to understand empirically how scenario planning is related to building new social capital in the context of addressing perceived or potential turbulence.

Case studies (Flyvbjerg 2011; Yin 2003) have previously been used to research social capital building (e.g., Bowey & Easton 2007; Dowla 2006; Melander and Nordqvist 2002; Pedler and Attwood 2011; Swart and Kinnie 2003; von Schnurbein

2010). The reason for taking a case-study approach was to gain a deep understanding of the scenario planning contextualized in each organization (Punch 2005) and to be able to observe changes in social capital formation over time.

I used multiple methods consistent with the critical realist epistemology adopted in this study. Similarly, social capital researchers (van Denth 2003 and Dudwick et al. 2006) have advocated for the use of multiple and mixed methods to understand the networks created through a set of activities and what these networks and activities mean for the actors. Evans and Syrett, citing Johnston and Percie-Smith (2007:70) also suggest that methods for exploring the building of social capital "should prioritize interpretation over measurement". Subsequently, I used four methods: 80 semi-structured interviews with actors involved in the scenario planning in each case; two descriptive surveys of actors not immediately involved but with whom the scenario planning sought to engage; three bi-partite affiliation analyses of the networks (Wasserman & Faust 1994) created through the scenario planning activities; and an analysis of the documentation related to each case.

The research design incorporating multiple methods also helped to ensure triangulation and the correction of biases in the data. First, as this is an exploratory study with no previous research to my knowledge having been undertaken to understand the links between scenario planning and the building of new social capital, triangulation was able to illuminate the different aspects of this little understood phenomena (Johnson & Duberley 2000). As Glaser and Strauss, Eisenhardt, and Sole and Edmondson (as cited in Swan et al. 2010:330) noted: "Triangulation of sources is important for exploratory research as it allows emerging issues to be explored from different

perspectives and provides opportunities for cross-checking emerging findings and concepts".

Second, multiple and mixed methods assisted with addressing potential biases in the data. The scenario planning I investigated in each organization had been completed prior to my entering the field. I started the fieldwork in March 2009 and the EPO and Singapore projects had been completed in 2007, while the two OU rounds had been undertaken in 2002 and 2005. While this time lag was deliberate – so that I could observe the impact of the projects – there was a risk that people's recall could be compromised. Thus, relying on the interviews alone could have led to distortions. An example was where an interviewee in the EPO case recalled correctly the events with regard to academics' interactions with the Office, but the dates of the events were not correct. This was able to be checked and corrected through analysis of other data sources.

By focusing on three cases, my intent was to also benefit from a comparative research approach, which "illuminates differences in phenomena across organizations, providing the opportunity to explicate the sources of such heterogeneity" (King, Felin & Whetton as cited in Foreman 2010:512). The three cases had characteristics that made them comparable: each was a public-sector organization and each employed the intuitive logics scenario method. (Details of the three cases can be found in appendix II.) However, beyond these similarities they differed, particularly in their contexts – an international, national and single organization respectively. This heterogeneity, set against a backdrop of commonalities (i.e., public sector organizations using the same scenario planning method), provided a valuable opportunity to draw more

generalizability from the research findings. The value of this approach has been noted by Schofield (2000:79):

> Generally speaking, a finding emerging from the study of several very heterogeneous sites would be more robust and thus likely to be useful in understanding various other sites than one emerging from the study of several very similar sites (Kennedy 1979). Heterogeneity can be obtained by searching out sites that will provide maximal variation or by planned comparisons along certain potentially important dimensions…This comparative strategy is potentially quite powerful, especially if there is heterogeneity among cases within each of the categories of interest.

Generalizability is further enhanced in this dissertation by my seeking to develop mid-range theory (Eisenhardt 1989; Merton 1968). Mid-range theory is generated theory that is specific to the phenomena under investigation but is still "testable, novel, and empirically valid" (Eisenhardt 1989:547). Eisenhardt argues generalizability can be enhanced if the theory developed from the cases ties into broader theoretical frameworks. Thus, generalizability is enhanced in my study by grounding the data collection and analysis about the building of social capital in the theoretical framework of turbulence (Emery & Trist 1965) which is the type of environment in which scenario planning is deployed (Ramirez et al. 2010).

A final note needs to be made in relation to the Singapore case. The new media case represented a "focused" (Ho 2009:25) and therefore smaller scenario study. Such focused studies complement the Government's national scenario planning exercises conducted every few years. In addition, the topic was relatively sensitive, having implications for governance and government communication within Singapore. The smaller, more focused and sensitive nature of the project meant there weren't as many participants involved in the scenario planning, nor was it as possible for me to gain as

much access to participants as was the case in the other two studies. For example, the scenarios were presented and worked with in several internal government committees but the proceedings of these were classified. Similarly, the names of the government employees who were interviewed in the project were not made public and the schedules of senior civil servants, as well as their more advisory role in the project, meant it was not possible to involve them in the research. Finally, because the process was a focused study, the scenarios were developed more casually without the formal workshops evident in the other cases. Thus, no network analysis could be undertaken nor could a survey be conducted. Data collection for the Singapore case focused on ten interviews as well as documentary analysis.

Despite these limitations, this case was valuable for the research. Scenario planning is well established in the Singapore Government and participating interviewees had experience and a level of fluency with the methodology that resulted in extremely thoughtful and productive insights about the connections between scenario planning and the building of new social capital. The case also sheds light on the constraints of building new social capital – and researching it – in politically sensitive contexts. Thus, the outcomes of the research in the Singapore case, while not included in the second (empirical) paper, are very much evident in the third paper and in the final discussion where a model is proposed of how scenario planning and the building of new social capital are related. Finally, by being able to study both rounds of The Open University's scenario planning, with their different designs, convenors and outcomes, three points of comparison were still able to be provided to ground the empirical paper.

SIGNIFICANCE OF THE RESEARCH

This dissertation makes five contributions to scholarship and practice (they are listed in no specific order): theorizing the capacity of scenario planning to build new social capital; understanding how new social capital can be built to address changing strategic circumstances; speeding up the formation of new social capital; fleshing out the cognitive dimension of social capital; and contributing to further understanding the relational perspective of strategy.

Theorizing the capacity of scenario planning to build new social capital

The capacity for scenario planning to build new social capital has been suggested in practice but not yet theorized, representing a gap in the literature. Galer (2004), reflecting on the scenario planning undertaken in South Africa as part of the transition from apartheid to democracy, questioned whether a major outcome of this work wasn't the networks that were created for the long term. Kahane (2004:35), who facilitated one of the most well-known of these initiatives (the Mont Fleur Scenarios) observed that the process built a "cross-sectoral network of trusting relationships – what Robert Putnam calls social capital". Thus, this research seeks to make a contribution to scenario planning by theorizing how the work builds new social capital and in the process identifying another quality criterion by which the effectiveness of the work can be judged.

Understanding how new social capital can be built to address changing strategic circumstances

Scholars such as Emery and Trist (1965) and Ramirez et al. (2010) have argued that turbulent environments are becoming more salient. This implies that organizations

will need to find ways of building new social capital to adapt to changing strategic circumstances. However, existing ties and relationships have a tendency to become 'ossified' (Powell 1985) or 'inert' (Gargiulo & Bernassi 2000), embedding organizations in configurations of social capital that might have worked in the past but do not position them well for the future. Despite the prevalence of this situation and an increase in turbulent environments, Maurer and Ebers (2006:263) have argued that "there is a dearth of research that outlines how organizations can overcome these constraints and adapt their social capital to changing task and resource requirements". My research seeks to contribute to understanding how new social capital can be built by organizations to address changing strategic circumstances caused by turbulence. The research thus also represents an important opportunity to explore the building of new social capital in another context - the application of scenario planning in the context of perceived or potential turbulence.

Speeding up the formation of new social capital

My research also seeks to understand how the accumulation of social capital might be 'sped up'. This is important in increasingly turbulent environments where time is of the essence. While Putnam (1993) and Emery and Trist (1965) suggested social capital building takes a long time, Evans (1996:1129) has argued that it can be built more quickly. Targeted forms of interaction can lead to "new definitions of identity and interest [which] can be constructed in years rather than decades or centuries". Therefore, this research contributes to understanding how deliberate processes might reduce the actual time required to build social capital.

Fleshing out the cognitive dimension of social capital

The cognitive dimension of social capital focuses on shared or common representations, interpretations and systems of meaning among actors, which facilitate communication and action (Nahapiet & Ghoshal 1998). It has received less attention in the literature since Nahapiet and Ghoshal defined the three dimensions in 1998, although it has been increasingly used in empirical studies. As noted in paper three, perhaps this is due to the push by economists to engage with social capital scholars when they realized social capital might be a good way of bringing the 'social' into their work (Fine 2010) and research. This engagement may have sidelined other dialogs, such as those between social capital scholars, and social psychologists, cognitive sociologists, and anthropologists, who stress the importance of meaning being created among actors. Thus, my research is aimed at fleshing out a better understanding of the cognitive dimension of social capital and how it can be built in situations where there is a priority on making sense of turbulence.

Contributing to further understanding the relational perspective of strategy

Strategic management is increasingly being conceptualized as a relational process (Starkey & Tempest 2004). Venkataram and Subramaniam (2002:461) have identified three eras of strategy, with the latest stressing this relational dimension. These eras are: strategy as "a portfolio of businesses"; as a "portfolio of capabilities"; and as "a portfolio of relationships". In their words, "Each of these eras represents how organizations have rallied around a particular concept of strategy with an associated set of norms for creating competitive advantage". In the current era, the focus is on complementing internal capabilities with external bodies (Venkataram and Subramaniam 2002) thus foregrounding the importance of building and maintaining relationships. This dissertation contributes to understanding how scenario planning can

provide a specific strategy mechanism for actors to reach out to others to build new relationships, operationalized as social capital, thereby contributing to further fleshing out the strategic advantage of the relational perspective of strategy.

A PERSONAL REFLECTION ON FRAMING AND DESIGNING THE STUDY

Before concluding this introduction, I would like to make explicit for the reader how my interests, disciplinary background, methodological preferences, as well as the availability of cases, shaped my final choice of research topic.

From 1999-2004, I worked in the Scenario Planning and Research Unit (SPARU) at Curtin University of Technology, Perth, Australia which had been established by Professor Jo Barker in the mid-1990s. She in turn had reached out to Professor Kees van der Heijden, one of the most well-known global scenario scholars, for intellectual guidance in establishing the Unit. It was through my involvement with the Unit that I met Kees and when I decided to undertake my doctorate in scenario planning, I sought his guidance about possible supervisors. He suggested Dr Rafael Ramírez given Rafael's extensive scholarly and practical experience in the area.

In 2004, Rafael and Kees had established the Oxford Scenarios Programme - an executive education program of the Said Business School which I participated in as either a teaching assistant or faculty member from 2007-2012. In 2005, they (along with Dr. John Selsky) also convened the Oxford Futures Forum. The Forum is a discussion hub for linking the practice of scenarios with various theoretical perspectives. The aim is to build the theoretical underpinnings of scenario planning while enriching theory by viewing it through the practical application of scenarios. This 2005 Forum explored the links between scenario planning and turbulence as conceptualized by Emery and Trist (1965). (There have been two other forums - one in

2008 investigating the links between scenario planning and sensemaking and one in 2011 exploring scenario planning and complexity theory.)

I attended the 2005 Forum at about the same time I was preparing my application to the DPhil program at Oxford. It was through my involvement in the Forum and with Rafael that I became increasingly interested in the study of scenario planning in the context of addressing perceived or potential turbulence. I subsequently co-authored a chapter in one of the two books that emerged from the Forum - *Business Planning for Turbulent Times* – edited by the organizers. This chapter explored how soft systems methodology (Checkland 1981) can be used to enhance the design and execution of scenario planning by placing actors' perceptions of the project and the situation centre stage.

Upon commencing the doctoral program in 2007 (after completing the MSc in Management Research at Oxford in 2006) I explored theoretical perspectives from which: 1) it would be useful to study scenario planning in the context of addressing turbulence; and 2) research on the practice of scenario planning could contribute to. While scenario planning is regarded as under-theorized (Chermack 2004; Wilkinson 2009) several scholars have sought to remedy this situation. These include: van der Heijden's (2005) work on scenario planning providing an organization with distinct capabilities to create new strategic insights; Schoemaker's (1993) research on how scenario planning overcomes decision biases; Islei et al's. (1999) work on the value of attending to Belbin (1993) team roles in scenario groups; Burt's (2003) research on how scenarios act as transitional objects (Winnicott 1971) for actors to explore changes needed in the future; de Geus's (1988) work on scenario planning accelerating

organizational learning; and Ramirez et al's. (2010) work on causal textures theory and the applicability of scenarios to turbulent environments.

Against the backdrop of this previous work, I spent some time looking at what theoretical contribution I could make through my doctoral study - taking into account the data I could access and my own methodological preferences (largely qualitative). I was initially interested in the idea of how scenario planning brings about a re-perception of the strategic situation in the context of turbulence (Wack 1985b). As the eminent management scholar Peter Drucker (as cited in Wack 1985b:159) noted: "The greatest danger in times of turbulence is not the turbulence, but to act with yesterday's logic".

As I explored how I might operationalize re-perception, I found myself in areas of psychology such as perception and mental representations (Gardner 2006) which on balance I felt I did not have sufficient expertise to pursue – both in terms of psychological subject matter and research methods. I then investigated how re-perception might be better approached from the organizational studies field of sensemaking. Sensemaking was also the subject of the 2008 Oxford Futures Forum which gave me the opportunity to speak with key scholars in the area, such as Professor Kathleen Sutcliffe. From these discussions, I determined that while the concept of sensemaking was likely to be valuable for understanding how scenario planning assists organizations address turbulence, it was not clear the contribution scenario planning could make to sensemaking. I understood sensemaking as a retrospective activity (Weick 1995a) and scenarios with their focus on the future as a prospective activity. And once again, I found it difficult to operationalize sensemaking in the context of the cases I could access.

With the assistance of my supervisor, I approached 12 organizations in the public and private sectors to see whether it would be possible to include their scenario projects as case studies in my research. Of these 12, three public sector organizations agreed to participate – and these helped shape the final choice of research topic. These cases had been completed some years prior providing an opportunity to assess their impact on building new relationships. And each demonstrated aspects of reaching out to others for the purpose of better understanding and addressing potential or perceived turbulence.

Thus, I returned to Emery & Trist's (1965) work and their argument that the best way for organizations to address turbulence was to reach out to others – to collaborate for the purpose of forming common ground. Given the link had been established between turbulence and scenario planning at the 2005 Oxford Futures Forum and in the book *Business Planning for Turbulent Times,* it seemed a logical extension to research how scenario planning might form this common ground. After further investigations and conversations with my supervisor, it seemed that the building of new social capital was an important element in this process and would provide a good way of operationalizing Emery and Trist's (1965) intent for actors to reach out to others. In addition, Galer (2004) and Kahane (2004) had suggested that in practice scenario planning builds social capital and my research provided a scholarly opportunity to explore that proposition.

I subsequently met with Dr Janine Nahapiet (co-author of the most cited social capital article in organizational studies) and came to realize that not only would social capital provide a useful theoretical lens from which to study scenario planning, but that my research could also contribute to the social capital field. That is, the building of social capital had not been extensively explored in the literature and by researching how

scenario planning could build new social capital, there was an opportunity to make a contribution here as well.

As I reflect on my experience in framing and designing the research, I am reminded of Creswell's (2003:xxv) advice that "designing a study is a difficult and time-consuming process". Certainly, the better the up-front work is in determining a topic that is doable in terms of empirical access, the easier it is to execute the study and the more potentially useful are likely to be its outcomes.

OUTLINE OF THE DISSERTATION

The subsequent chapters in this dissertation are the literature review, followed by the three papers, and then the discussion. Details of each of these chapters are outlined below.

Chapter two (Literature review) reviews the two bodies of literature – scenario planning and the building of social capital. The intent is to understand from the literature how these two areas are related. The literature is structured using Morgan's (1986) metaphors and draws on approximately 670 pieces (journal articles, books, book chapters, etc.). The result is 20 findings about the relationship between scenario planning and the building of social capital as well as the identification of four research sub-questions.

Chapter three (Paper one): *The many images of scenario planning: Ordering the scenario literature using Morgan's metaphors.* This paper orders the scenario literature after finding there are multiple – and competing – images of the work that go beyond language to signal philosophical differences that people have regarding the purpose of the work. Such purposes include scenario planning as a process for: improving decision

making (Schoemaker 1993); accelerating organizational learning (de Geus 1988); bringing about a re-perception of the strategic situation (Wack 1985b); providing agency to overcome determinism in relation to the future (Chapman 1976); stress-testing strategic options and developing real options (Miller & Waller 2003); using conflict to surface and question assumptions (Eisenhardt 1999); and providing an organization with distinct capabilities to create new strategic insights (van der Heijden 2005); etc. All of these purposes are evident in the literature, but without being clearly delineated, scholars and practitioners risk talking at cross purposes. In addition, without this delineation, a proper understanding of the different ways in which scenario planning can build new social capital would be missed. This ordering uses Morgan's (1986) metaphors, given the value these metaphors have proven to have had for ordering the wider organizational theory literature.

Chapter four (Paper two): *Scenario cranes to build new cognitive social capital.* This paper reports on the outcomes of exploratory empirical research on building new social capital with scenario planning. The key finding is that scenario planning can build new social capital by providing a counterfactual process that uses the conceptual future to make new sense of turbulence. This is done through a process analogous to building a 'crane' to a new vantage point - the conceptual future - from which the present can be reframed (Normann 2001). Because of the focus on the conceptual future and structuring it using scenarios, the importance of the cognitive dimension of social capital is emphasized. This paper sheds light on what Maurer and Ebers (2006) termed the "dearth of research" about how organizations can build and configure their social capital to address changing strategic circumstances as well as when leading with the cognitive dimension is most useful.

Chapter five (Paper three): *Settling into the future: Cognitive social capital and scenarios* (with Rafael Ramírez). This paper describes how scenario planning can speed up the building of social capital by foregrounding and leading with the cognitive dimension, thereby helping people to 'settle in' to the future. Following Ostrom and Ahn (2003), who suggested that some forms of social capital can be more directly built than others, this paper describes how scenario planning can be a purposeful and quick investment in building the resources that create new shared systems of meaning – the cognitive dimension of social capital. By explicitly suggesting that social capital building is a possible purpose of scenario planning, it gives this 60 year old practice a new quality standard, helping practitioners evaluate whether the investments to deploy scenario planning are worthwhile, and in doing so, further strengthen the scholarly understanding of why scenario planning is used and how it can be valued.

Chapter six (Discussion). In this chapter, the insights from the literature review and the three papers are drawn together to conclude the dissertation's exploration into how scenario planning and the building of new social capital are related. Although the main findings of the dissertation are captured in the publishable articles and the review of the literature, the intent of this discussion is to provide an overview, so as to identify key scholarly and practical implications of the research as a whole. The outcomes are presented as a model identifying academic and practice implications, as well as future research opportunities.

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Appendix I – Causal textures theory

Causal textures theory is part of the socio-ecological tradition of strategy and organizational studies, which can be contrasted to the neoclassical tradition (Selsky et al. 2007). Although the socio-ecological tradition is almost 50 years old, the naming of an aspect of it as theory – causal textures theory – is more recent, emerging in the 2008 book *Business Planning for Turbulent Times* (Earthscan, London). While it was labelled a theory, the audience for the book precluded a justification for its use of the term. Here, I seek to outline what constitutes theory within organization studies and what this means for presenting a 'causal textures theory'. This is important in the context of incorporating causal textures in the theoretical framework for my research.

Sutton and Straw (1995) argue that there is a lack of consensus about what theory actually is within organization studies. Reinforcing this point, their article focuses on discussing what theory is *not* – references, data, variables, diagrams and hypotheses. Weick (1995b, 1995c) suggests that focusing on what is – and what is not – theory misses the more subtle point that theory is more a continuum from "guess" to "explanatory system" and that most theories in organizational studies are "approximations". Despite these looser ideas of approximation and a continuum, Weick (1995c) does suggest that an important element of theory is the application to 'specific instances'.

Van de Ven (2007:12) incorporates the notion of 'specific instances' and describes theory as "an explanation of relationships among concepts or events within a set of boundary conditions". Drawing on Bacharach, van de Ven says this definition means a theory is composed of four elements. The first is *terms* (concepts, constructs, variables, events); the second is *relationships* among the terms (propositions, hypotheses); third is *assumptions* or the boundary conditions within which these relationships hold in time, space and value contexts; and fourth is *explanations* (arguments that provide reasons for the expected relationships).

Using this framework, I flesh out a theory of causal textures (see table below). In summary, this is a theory about how systems and environments co-evolve on a trajectory towards increasing complexity and how these different stages (or environmental types) invite different strategic responses.

Outline of causal textures theory

Elements of a theory	Causal textures theory
1. *Terms* (concepts, constructs, variables, events)	Theoretical terms: Open systems (von Bertalanffy 1950); contextualism (Pepper 1942); causal textures (Tolman & Brunswik 1935) of environments (Emery & Trist 1965); fields (Trist 1983) Observable terms: Four ideal types of environments (Emery & Trist 1965); these are defined by the saliency of internal connections of systems (L11), external connections between systems and environments (L12 and L21), and the connections in the environment itself (L22) (Emery & Trist 1965); there is an objective and subjective dimension to understanding the nature of these ideal types with the subjective dimension becoming most salient in the fourth environment (turbulence) (McCann & Selsky 1984); there are two tiers of the environment – the transactional and the contextual – where the contextual provides the 'boundary conditions for transactional relations' (Trist 1983)
2. *Relationships* among the terms (propositions, hypotheses)	Proposition (relationship between theoretical terms) – systems (such as organizations) and their environments together make up a field; systems and environments co-evolve leading to increased complexity in a field over time which is experienced as 'relative uncertainty' by the individual systems making up the field (Emery & Trist 1965); turbulence is a characteristic of a field and not an individual organization (Selsky et al. 2007) Hypothesis (relationship between observable terms) – systems take actions that are specific to dealing with each type of environment they face or see emerging (Emery & Trist 1965)
3. *Assumptions* or the boundary conditions within which these relationships hold in time, space and value contexts	This is an open system perspective and applies at any system level. The one most commonly referred to is organizations (as systems) and the field (environment). However, the system could also be at the business unit level in a multinational company (the environment)

Elements of a theory	Causal textures theory
4. *Explanations* (arguments that provide reasons for the expected relationships)	Environments of systems have a causal texture – that is, they are causally linked (with developments in one having an impact on those in the others) (Tolman & Brunswik 1935) The causal texture means over time environments become more complex, with the factors at work in the contextual environment (which shape the transactional environment) becoming more salient (Emery & Trist 1965)

Appendix II – overview of the three cases

	European Patent Office (EPO)	The Open University (UK)	Strategic Policy Office (SPO) Government of Singapore
Topic	Future legitimacy of the global patenting system	Changes in higher education	New media and society
Previous experience	First experience with scenario planning	First experience with scenario planning	SPO has been doing scenario planning since the early 1990s
Sponsor	President of the Office	Vice Chancellor	Director of the SPO
Duration	2004-2007 (30 months)	1st round: 2002-2003 (7 months) 2nd round: 2005-2006 (6 months)	2006-2007 (10 months)
Process	Interviews (internal and external to gather data) Workshops to develop and discuss scenarios Small groups to develop each scenario Launch of scenarios, distribution of compendium and presentation of scenarios	1st round – scenarios developed by a cross-institutional team guided by a consultant published in a book and presented to 40 units 2nd round – scenarios developed by consultant (based on four books) by consultant moving between different layers of the university. Strategic options developed in tandem	Data gathering (desk research and interviews) Team meetings to develop scenarios Scenarios written up Implementation committee established to address outcomes Scenarios used in discussions with politicians and a submission to AIMS
Number of participants	245	1st round – 124 2nd round – 290	50

	European Patent Office (EPO)	The Open University (UK)	Strategic Policy Office (SPO) Government of Singapore
Facilitator	External person employed at EPO for the duration of the work	1st round – external consultant (number 1) 2nd round – external consultant (number 2)	Internal
Written outputs	Interviews published (2000 print run) 20,000 compendiums printed and distributed internally and externally Executive summary printed External and internal website Presentations at various external forums	1st round – compendium distributed throughout the university. Scenarios discussed at unit level, fed into *OU Futures* and a series of 'strategic forums' established 2nd round – document available on intranet with strategic options that were reflected in *OU Futures* and unit plans	One detailed report for the team and an edited version distributed across several public-sector agencies

CHAPTER TWO.

LITERATURE REVIEW OF BUILDING SOCIAL CAPITAL WITH SCENARIO PLANNING

The intent of my doctoral research is to understand how the building of new social capital and scenario planning are related. Thus, this literature review has two objectives. First, it aims to provide an overview of both bodies of literature to draw out the relationships between them; and second, to generate a set of sub-questions to guide the research so as to position its contributions within the literatures. Therefore, I have structured this review by: first, discussing the methods by which the literature was gathered and analyzed; second, providing a descriptive analysis of the material; third, distilling and discussing 20 findings about how the two bodies of literature are related; and, fourth, outlining the research sub-questions derived from these findings.

METHOD

As discussed in chapter one, this literature review is organized using Morgan's (1986) metaphors outlined in his book *Images of Organization*. Metaphor is a cognitive process for making sense of complex or abstract situations (Lakoff & Johnson 1980) whereby familiar knowledge (the source or base domain) is applied to something that is new and relatively unknown (the target domain) (Grant & Oswick 1996). Morgan (1986; 2006) identified eight dominant metaphors underpinning organizational theory: *machines, organisms, brains, cultures, political systems, psychic prisons, flux and transformation, and instruments of domination.* The rationale for using Morgan's metaphors to structure this review is fully outlined in chapter one. Here I provide a brief recap of that justification.

The research design decision to use Morgan's metaphors is a Lockean (Churchman 1971) one. Locke argued that whether a fact could be considered true or not depended on

consensus among a group - that is, peer review. A Lockean inquiring system is compatible with critical realism given 'truth' is the result of people engaging on an ongoing, social basis to better understand the phenomenon (Hatch & Cuncliffe 2006), rather than truth being based on an objective standard (more typical of a Leibnizian inquiring system).

Morgan's work meets this criteria of peer review as it has been extensively engaged with by organizational studies scholars who acknowledge his foundational and predominant influence in the area (see for example Cornelissen et al. 2008; McCourt 1997: Oswick et al. 2002; Schon as cited in Grant & Oswick 1996). Scholars have also critiqued the use of metaphors in organizational studies including Morgan's work (see Bourgeois & Pinder 1983; McCourt 1997; Oswick et al. 2002; Pinder and Bourgeois 1982; Tinker 1986; Tsoukas 1993). These critiques have included concerns about: metaphorical language leading to a lack of precision in research; the use of metaphors leading to ideological distortions; and Morgan not going far enough in understanding how metaphors work to generate new insights. Despite these critiques, scholars now accept metaphors exist in organizational theory (Cornelissen 2005) and that Morgan's work is central to the prominence metaphorical thinking has in organization studies (McCourt 1997). Given the level of engagement by scholars with Morgan's work, a Lockean inquiring system rationale seems justified.

Data collection and analysis

The pieces of literature discussed in this review were gathered from English language journal articles, books, conferences I attended and personal collections, all where access to the full text was available. No preference was given to sources, such as most cited journals. The reason for this is that because neither of these bodies of literature have yet been significantly structured (although there have been movements in this direction with the development of some typologies in scenario planning) my intention with this

review was to get a good overall sense of them before applying any filters. I thus anticipated when starting the review that this exploratory approach could lead to a more refined analyses in the future using various criteria – after completing it, I am still convinced of this opportunity.

To gather the social capital literature, I was guided by Schuller et al. (2000:1) who suggested there are "three kinds of conceptual genealogy by which social capital might be mapped". The first are those writings that refer explicitly to the term; the second involves taking key elements such as trust and networks and reviewing the literature in light of these; and the third involves all those theories that are related to social capital but do not mention the concept directly (e.g. de Tocqueville's discussion of associations in nineteenth-century America). In this review, I focused on the first category, on material that specifically discussed the building of social capital. The reason for this choice is that the social capital literature is extensive (a Google Scholar search returned 657,000 items in May 2012), as are the combined adjacent literatures. Focusing on these would have returned a body of material for review way beyond the scope of this dissertation.

As a result, I specifically used the search terms "build* or develop* or creat* or form* social capital" looking for them in the title or abstract of the pieces of literature. Consequently, 142 pieces were returned from areas such as organizational studies, political science, sociology, urban studies, international development, social work and economics. While these pieces draw on different authors' specific definitions (such as those of Putnam, Coleman, Nahapiet & Ghoshal) it can be argued that all social capital definitions are "broadly consistent or complementary" (Maurer and Ebers 2006:263; Szreter and Woolcock 2004) and therefore comparable (as discussed in the Introduction chapter). However, in discussing the material in this review, I contextualize the social capital building mechanisms so that the reader can understand why the proposed mechanisms are

suggested in each specific context. It also needs to be noted that there were two areas I did not include – these were the building of social capital in families and schools (K-12 schooling). They were excluded because they represent areas quite separate to my focus on organizations and organizing.

In the case of the scenario planning literature, I focused on those pieces that reflected upon or undertook research into scenario planning, as compared to using scenarios as a research method into various topics. In addition, because 'scenario' is a widely used term, I limited my search to pieces that were consistent with van der Heijden's (2005) definition discussed in the introduction and which broadly conceptualized scenario planning as part of the intuitive logics school (Bradfield et al. 2005). The review of the scenario planning literature in this section builds on my MSc dissertation, although that review was based on 179 pieces and this one draws on over 530.

I assigned the material to the metaphors by asking the question: *"When we think of organizations or organizing in this way, what do we see in terms of building social capital and scenario planning?"* I then inductively grouped the material within each metaphor into themes, summarized and named them. These themes are discussed below.

MECHANIZATION TAKES COMMAND: ORGANIZATIONS AND ORGANIZING AS MACHINES

Conceiving of organizations and organizing as machines, attention in this metaphor is drawn to concepts such as efficiency, structure, objectives and performance (Morgan 1986).

Building social capital

Themes highlighted from the building social capital literature are: i) the impact of government efficiency measures and collaborative buyer-supplier relations for building

social capital; ii) building social capital to improve operations for firms operating across geographical distances; and iii) incentives for investing in social capital.

The impact of government efficiency measures, and collaborative buyer-supplier relations, for building social capital. Researching the introduction of government efficiency measures, Carilli et al. (2008:212) find that those measures aimed at creating homogeneity among entrepreneurs – such as legal reforms – can be detrimental to existing social capital (and entrepreneurship). Such interventions, they argue, create "a signal extraction problem for individual agents". That is, mandatory measures erode the investments that have been made in relationships and the signals that have been developed between parties to guarantee credibility and trustworthiness. According to these authors, understanding this impact draws attention to the role the institutional context plays in building social capital.

As an example of the impact of government efficiency measures, Erridge and Greer (2002:518) show how 'arm's length' competitive procurement policies can have mixed effects on building social capital between suppliers and public sector agencies. On the one hand, the development of long-term partnerships and social capital can bring "benefits to both departments and suppliers by increasing access to resources and information, reducing transaction costs, improving contract specifications, facilitating shared risks, and improving co-operative action". However, such partnerships can have a downside "by reducing competition, contravening regulations on financial probity, restricting the flow of information on supply costs, and increasing opportunism". In this latter case, policies with their rules and procedures are a better way to build social capital, as they prevent lock-in, establish trust (in the process) which prevents opportunism, and offer a means of redress. The authors thus argue that there are advantages and disadvantages of each approach – collaborative supply relations and competitive tendering – and suggest the choice will

depend on the context. They call for further research to understand which approach is most suited to which context.

Villena et al.'s (2011:571) research sheds further light on buyer-supplier relationships. They explore the relationship between the acquisition of social capital and performance in collaborative buyer-supplier arrangements and find it to be curvilinear. Researching Spanish firms, they find there is a "duality" to social capital. That is, "collaboration between supply chain members can become a key mechanism to reduce conflicts and increase teamwork, but, if taken to the extreme, it can also inhibit the partnering companies' capabilities to effectively adapt to changing market needs (Gargiulo & Benassi 1999)". The authors find the curvilinear relationship applies particularly between performance and the structural and relational dimensions of social capital: "Initially, the promotion of frequent, close social interactions allows the buyer to gain access to valuable resources and exploit synergies...Yet as additional social capital is accumulated, the risks of opportunism, loss of objectivity, ineffective decision making, and costly investments may begin to outweigh the benefits and, ultimately, jeopardize buyer performance". Interestingly, they do not find support for this curvilinear relationship with the cognitive dimension of social capital, suggesting that "the risk of being too much alike... is not as pronounced in terms of its negative impact". Alternatively, they caution their sample may not have developed high levels of cognitive social capital. The authors thus call for further research exploring the impact of the cognitive dimension on collaborative buyer-supplier relationships.

Building social capital to improve operations for firms operating across geographical distances. There is also a strand of literature in this metaphor concerning building social capital to address efficiency in operations across geographic areas. Gomez and Sanchez (2005:2190) propose that HR practices can provide the informal mechanisms for building

social capital to enable multinational corporations to manage the globalization/localization trade-offs they seek: “Specifically, we maintain that HR practices can create social capital in locally adaptive ways and that in turn this capital can help bridge the gap between globalization and localization of strategic practices”. Kostova and Roth (2003:304) highlight the role boundary spanners play in building social capital in multinational corporations. Through interactions with head office, boundary spanners form relationships as well as perceptions (about head office). This builds their personal social capital but over time they convey their experiences to others with whom they work. These others take on board their perceptions and the private social capital becomes “a public good of the subunit”. Key factors in this process are the number and frequency of interactions, their importance or saliency, and whether the outcome is positive or negative. Ghosh and Scott (2009:19) describe how the building of social capital can help address knowledge gaps between clients and vendors distributed across time zones and countries. They identify six activities for building social capital in this context: vendor mentoring; domain portfolio planning teams; joint quarterly training sessions; rapid application development; reciprocal site visits; and the creation of knowledge management systems.

Incentives for investing in social capital. Some authors in this metaphor describe the mechanisms by which actors choose to invest in social capital. Glaeser et al. (2002:456), using an economic investment model similar to that used to measure investments in physical and human capital, show that individuals invest in the creation of social capital when the incentives to do so are sufficiently high. Social capital at the group or organizational level is an aggregation of these individual investments. They note, however, that “profound differences distinguish social capital from other forms of capital. Most of these differences stem from the interpersonal externalities that can be generated by social capital”. An example of how individuals think about incentives when investing in social

capital is provided by Ng and Feldman (2010:700). They find that job embeddeness (when people decide not to move to other organizations for work even when opportunities exist to do so) removes incentives for individuals to build their social capital, thus hindering their career advancement. Recognizing that the building of social capital takes time and effort, the authors found that "once employees perceive that they are highly embedded in an organization, they gradually lost some interest in developing additional social capital".

Also exploring the role of incentives, Vega-Redondo (2006:2334) argues that social capital is built by individuals repeatedly playing a Prisoner's Dilemma game with others, which results in the formation of networks. The author highlights the role stability plays here and the type of network behavior the actors engage in: "When the player's *strategic* behaviour is *network-based*, the architecture of the network adapts to increasing volatility by becoming more *cohesive.* This, in turn, acts as a buffer that mitigates the detrimental effects of volatility... Instead, if strategic behaviour is shaped in a strictly bilateral fashion (i.e. is *network-free),* the harmful effect of volatility is much more acute and its consequences materialize abruptly" [italics in the original].

Scenario planning

In the scenario planning literature, key themes in this metaphor are: i) using wind tunnels to test strategic options and strategies; ii) evaluating scenario practice; and iii) attending to efficiencies and improvements in the scenario process itself.

Using windtunnels to test strategic options and strategies. A key focus of the literature in the machines metaphor is the idea that scenarios are wind tunnels for testing existing and new strategic options. Wind tunnels are used in the building of aircraft to test components for robustness no matter what the weather conditions. In scenario planning, options are tested for robustness, which is seen as a preferable criterion to optimality in

situations of uncertainty (Lempert, et al. 2006). Those options that are robust across the scenarios are candidates for implementation, while those that are contingent (not common to all scenarios) are often addressed through the use of real options (Cornelius, et al. 2005; Miller & Waller 2003; Mills et al. 2006). Bers et al (1997), Fahey and Randall (1998a), Hamilton (1981), Leemhuis (1985), Lindgren and Bandhold (2003; 2009), Randall (1997), Randall and Wilson (1998), and Wilson (2000) outline a number of techniques for using scenarios as wind tunnels to generate and test options. Other examples of the use of wind tunnelling includes using the scenarios to test an organization's business idea (van der Heijden 1998), improve financial management strategies (Shumadine 2005), make R&D programs more robust (Ringland 2003), prepare responses to potential disasters (Barbanentte & Khakee 2003), determine prices for a firm's acquisition (Hass & Pryor 2008), and test the consistency of an organization's vision (Boaventura & Fischmann 2008).

Evaluating scenario planning. The concern with efficiencies in this metaphor sees a group of material discussing the evaluation of scenario planning – particularly the lack of it. For some writers (e.g. Burt & van der Heijden 2003; Chermack 2007), demonstrating the benefits of scenario practice is urgent. A key question is how to approach it. Some writers advocate large statistical studies, arguing these will reveal the causal mechanisms as to when scenario practice is, and is not, effective (Chermack 2005). An example of such a study is one undertaken by Phelps et al. (2001) in the UK water and IT industries. They found that scenario practice does seem to improve financial performance. Harries (2003), on the other hand, argues that this study did not control for factors such as the skill of the management team and the culture of the organization and generally argues that such large-scale studies seeking to compare factors across organizations are problematic. Despite

Phelps et al.'s positive finding, Molitor (2009) states that as a 'forecasting' professional for 50 years he has not seen any scenario effort result in a significant outcome.

Visser and Chermack (2009) take a qualitative perspective to evaluating scenario practice in a sample of multinational firms and find these companies deem the practice to be successful for better understanding the environment (including isolating trends and understanding interdependent forces) and the implications of strategic decision making. They also report that there is a lack of formalized assessment tools for this type of intervention. Another way in which evaluation of scenario practice has been approached is through single case studies (e.g. Moyer 1996; Pratt 1999; Ringland 1998; 2002; 2006), but Harries (2003) says these tend to be self-selected, do not rigorously discern the influence of other organizational factors and represent only a small number of the projects actually undertaken. Similarly, writers such as Mintzberg (1994) argue that a single case study approach has traditionally omitted failures which should be included in any evaluation. However, Chermack (2003a) still believes that a focus on the single organization is useful and suggests performance improvement theory as the theoretical perspective from which to undertake such an evaluation. Lynam et al. (2007) also draw attention to the different way in which 'scenarios' are conceptualized in various fields, making evaluation across them difficult.

Attending to efficiencies and improvements in the scenario process itself. Within this metaphor is grouped an extraordinary number of pieces of literature that seek to 'open' the machine to understand how it works and how it can be made more efficient. These take the form of guidelines, checklists, toolboxes, component kits, handbooks, handrails, models and reflections on introducing scenarios in different contexts such as health, tourism, marketing, libraries, etc. (e.g. Becker 1989; de Jouvenel 2000; Duinker & Greig 2006; Fink & Schlake 2000; Gausemeier, et al. 1997; Giesecke 1999; Gilbert 2000; Godet 1986;

Justison et al. 2000; Pattinson & Sood 2010; Ralston & Wilson 2006; Ratcliffe 2000; 2003; Schreuder 1995; Stead & Banister 2003; van der Merwe 2008; Yeoman & McMahon-Beattie 2005). Freeman and Pattinson (2010) also discuss what is involved in managing the client relationship well in scenario planning.

Other writers provide guidance on things to avoid in scenario planning, such as not adapting the methods and tools to the specific requirements of the project and client situation (Klooster & van Asselt 2006; Durance & Godet 2010). Godet (2000) and Schoemaker (1998) have produced lists of 'pitfalls', capturing these and more. Burt and van der Heijden (2003) have also warned about not being clear on the purpose of the intervention and have more recently proposed a framework based on Vickers' Appreciative Systems to understand the objectives and purpose of a scenario intervention (Burt & van der Heijden 2008).

While many of the above are aimed at practitioners, scholars have also worked to structure the field in a more theoretical way. Such structures include typologies related to the history, traditions, schools and trends in scenario planning (Bradfield, et al. 2005; Huss and Honton 1987a; 1987b; Varum & Melo 2010), the meaning of scenarios across different disciplines (Jarke et al. 1998), the techniques used (Bishop et al. 2007), goals such as probable, preferable and possible futures (Borjeson, et al. 2006), methodological choices in terms of goals of the project, design of the process and content of the scenarios (van Notten, et al. 2003), epistemological and normative assumptions (Heugens & van Oosterhout 2001), and types of scenarios (Linneman & Klein 1985).

Finally, some authors have called for improvements that are needed in scenario planning such as developing its theoretical underpinnings (Chermack 2004; Chermack 2011; Wilkinson 2009) to address what Martelli (2001:64) has called "methodological chaos", combining scenarios with other methods to improve the quality of outcomes (e.g.

Nowack et al. 2011), and creating less resource-intensive processes (Millet 2003), particularly for smaller and not-for-profit organizations (Scearce and Fulton 2004).

NATURE INTERVENES: ORGANIZATIONS AND ORGANIZING AS ORGANISMS

Conceiving of organizations and organizing as organisms, attention is drawn in this metaphor to survival and the relationship organizations have with their wider environments (Morgan 1986).

Building social capital

For building social capital, themes highlighted in the literature are: i) building social capital to address turbulence; ii) building social capital to prepare for and cope with disasters; and iii) building social capital in inter-organizational or systems contexts.

Building social capital to address turbulence. A number of authors discuss the importance of building social capital to address turbulence. Gardner (1996:61) describes a series of community and economic development activities initiated in a Nevada county to build social capital and address turbulent economic changes (as a result of mining closures, loss of population, lack of new industries and job creation). These initiatives included community sessions to create a blueprint for the future of the county, the creation of a Roundtable and the establishment of committees responsible for implementing its key priorities. Involving all the community and empowering people so as to create a "can-do attitude" were regarded as the only way that new investment and jobs were likely to develop. Similarly, Lockie (2003) describes techniques for involving stakeholders in rural areas of Australia to bring about economic revitalization through plantation forestry. He argues that strategies need to simultaneously target economic, social and environmental outcomes.

Building social capital to prepare for and cope with disasters. Some authors have described the importance of building social capital in the context of disasters. Mathbor (2007:361) explores the role of the social work profession in this context. He describes how bonding social capital can be built through "recreational activities, religious and spiritual gatherings, political and institutional affiliations, economic and business activities, the physical infrastructure and buildings, and psychological and social supports". Bridging social capital can be built by groups reaching out to form coalitions "to identify the needs and joint collaboration efforts required to meet them". Moreover, linking social capital can be built through the development of relationships between government agencies, international organizations, financial and private sector institutions and community associations. The author also calls for incorporating disaster management in the social work curriculum. Friel (2005:82) contrasts "bureaucratic capital" with social capital to stress the importance of developing informal relationships between decision makers so as to better respond to disasters. Reflecting on the sudden and catastrophic Haiti earthquake, Zanotti (2010:768) describes how specific non-government organizations have been able to build social capital in its aftermath and better serve the local population. Interpreting social capital as "a stable and dense pattern of interaction among its members", she analyses the case of two "community-based foundations" which created social capital due to their being locally accountable, needs-driven and well connected to international funders. She argues they have done so without destroying the capacity of the state, which the traditional reliance of delivering services to Haitians via non-governmental organizations has done.

Building social capital in inter-organizational or wider systems contexts. Social capital can be analyzed at multiple levels – the individual, the group, the organization and the inter-organizational or system level. There is a body of literature grouped within this

metaphor describing the building of social capital at the inter-organizational level. Melander and Nordqvist (2002:104), in their research on networks in the Swedish furniture industry, disagree with Putnam that social capital takes long periods of time to develop. They find that "targeted support for network activities" based on economic incentives provide "centers of social learning". Such learning is created through a positive feedback loop whereby shared beliefs based on trust and co-operation as compared to distrust and rivalry nurture social networking and the building of social capital. Learning is focused on changing core beliefs about the advantages of participating in networks – thus building social capital more quickly. (The role of learning in building social capital is discussed in detail in the brains metaphor.) The authors also identify the importance of a core group of managers in the participating organizations who recognize early the benefits of collaborating and encourage others in the wider industry to be involved. Hall (2006:3) sees public-private partnerships in development agriculture as a vehicle for creating social capital among actors from different sectors. Referring to them as "agricultural innovation systems", he cites social capital building initiatives such as team-building across disciplines, farmer-to-farmer visits, creating industry associations, joint supervision of research students, and foresight exercises involving actors from across the sectors.

Svendson and Svendson (2004) draw attention to the role entrepreneurship and entrepreneurs can play in building social capital through cooperative movements. Seeing social capital as a missing production factor, they find that entrepreneurs in cooperatives are motivated by both economic and social gains and it is this combination that builds social capital. Murray (2004) shows how the social capital of individual scientists shapes entrepreneurial firms created to commercialize their scientific ideas. The scientists bring their networks from their laboratories and through wider interactions, such as conferences, embedding the new firm in valuable scientific networks.

Knoke (2009:1696) explores the social capital created through strategic alliances. A key point he highlights is the importance of organizations being aware of how they can build their social capital through the careful choice of partner: "A firm that is aware of the performance-enhancing competitive advantages obtainable from its interorganizational connections would act rationally in targeting its new strategic alliances towards partners seen as most likely to increase, if not fully maximize, the firm's corporate social capital portfolio (Nooteboom 2001; Preston 2004)".

Smith et al. (2004:525) research social capital building between voluntary organizations and council administrations in Birmingham and Glasgow. They find that inter-organizational "social capital can be more easily created in conditions where there is shared identity [the role of identity in building social capital is discussed in more detail in the psychics prisons metaphor] among those constructing the relationship [thus more so between voluntary organisations than between voluntary organisations and the city council]... Second...inter-organisational social capital can be actively generated and promoted by local authorities through the use of such mechanisms as consultation forums, outreach work by councillors and/or officers, and funding regimes". They also find that not all organizations are able to build or access social capital equally – for example, voluntary organizations that have few resources. The authors thus conclude that there are limits to the building of inter-organizational social capital between city councils and voluntary organizations.

McGrath and Sparks (2005:48) promote affinity groups as a way of building inter-organizational social capital along the supply chain. Affinity groups bring together people with similar titles, duties and responsibilities. Participants then meet on a regular basis, developing a mission and self-managing themselves. Examples of affinity groups are found in quality management and logistics. According to the authors, the benefits of such

groups are their ability to facilitate knowledge sharing, provide a systems-thinking perspective, and build trust and a "unique group identity".

Scott Murdock and Sexton (2002:2130), drawing on five case studies in Minnesota, show how "Good Neighbor Dialogues" – mechanisms for company and community members to meet to reduce the environmental pollution of the firm – can build social capital. Through the interaction facilitated by the dialogs in a form of joint problem solving, they found that greater understanding was reached by both sides regarding the situation and the challenges each faced. In addition, the involvement of the community helped company staff to secure top management support for environmental improvement programs. A key factor in the success of these dialogs was whether a company was open to discussing concerns with the community.

Two authors have identified the important role foundations play in building social capital at the inter-organizational level. Von Schnurbein (2010:419), exploring a European case study, found that foundations are able to play a key intermediary role as "honest brokers" in bringing together market, state and nonprofit interests. This "neutral position" is due to their interest being limited to facilitating others to get a project off the ground that is line with their philanthropic mission. Their neutrality gives them credibility and legitimacy, enabling them to bring partners together and to build social capital for the purpose of the project. Similarly, Easterling (2008) discusses the US Council of Foundations' role in building social capital. Sparked by the interest in Putnam's research on the decline of social capital in the US, the Council of Foundations set up a leadership team focusing on addressing this decline. The author finds that foundations are uniquely placed to build social capital by virtue of having the financial resources for programs, a mission of common good that goes beyond narrow interests, possession of community knowledge and credibility among sectors and stakeholders.

Also important for building social capital inter-organizationally is what Maak (2007:334) refers to as "responsible leadership". Responsible leadership is "the art and ability involved in building, cultivating and sustaining trustful relationships to different stakeholders, both inside and outside the organization, and in co-ordinating responsible action to achieve a meaningful, commonly shared business vision". Arguing that the "sustainability of any business ultimately comes down to the sustainability of the business *system* [italics in original]" the role of leadership is to cultivate good relationships with stakeholders – "including previously excluded ones and future generations" (Maak 2007:331).

Scenario planning

For scenario planning, themes found in the literature are: i) acknowledging turbulence and the role of scenario planning; ii) scenario planning as a process for understanding and co-evolving with changes in the contextual environment; and iii) inter-organizational or broader system level interventions.

Acknowledging turbulence and the role of scenario planning. Increasing turbulence in the contextual environment triggered a change in long-range planning in the early 1970s, with scenarios emerging as a useful alternative to single point forecasts (interesting early examples introducing scenarios include Amara & Lipinski 1983; Mandel 1983; Wilson 1978). While some of the earlier literature talks of scenarios as forecasts with varying probabilities (e.g. Braurers & Weber 1988; Duperrin & Godet 1975; Huss 1988; Kirkwood & Pollack 1982; Vanston, et al. 1977), most writers have since come to regard them as alternative futures that foreground equally possible and plausible outcomes to address the inherent uncertainty of the external environment (e.g. Becker 1983; Hadfield 1991; Meristo 1989; Porter 1985; Zentner 1982). Bell (1997), for example, distinguishes between

possible, probable and preferable futures, of which scenario practice, as defined in this dissertation, can be categorized as possible futures.

Ramirez (2008a) and Ramirez et al. (2008; 2010) have linked scenarios to turbulence (Emery & Trist 1965). Ramirez et al. suggest managers can understand whether an environment is turbulent or not by thinking whether the manifested conditions can be described as a 'wicked problem' (Rittel & Webber 1973) or a 'mess' (Ackoff 1979). If so, they suggest the environment is turbulent (as compared to being more placid) and scenario practice, with its focus on uncertainty, is particularly well suited (see Thomas 2008 for an overview of the effectiveness of scenario planning in relation to each of Emery and Trist's four environments). Thus, Buytendjik et al. (2010) suggest using scenarios to make strategy maps more future orientated and better able to deal with uncertainty, while Georgantzas and Acar (1995:xx) argue scenario planning is an "exciting" way for "firms to transform themselves and their environment by managing strategic uncertainty and interdependence". Ramirez (2008a:316) suggests scenarios address turbulence by establishing "common ground to confront it". Van der Heijden (2008), in a case study on Indian agriculture, shows how scenario planning has the potential to develop shared values among stakeholders to address turbulence.

Scenario planning as a process for understanding and co-evolving with changes in the contextual environment. Scenario planning focuses on understanding and appreciating changes in the contextual environment – the environment over which organizations have little control. The contextual environment provides the boundary conditions for the transactional environment (Trist 1983). Focusing on understanding changes in the contextual environment and how these changes might have an impact on the transactional environment, Ramirez (1993) reflects a belief that change for organizations originates in the external environment. Some writers therefore describe scenario planning as taking an

'outside-looking in' view (Perrottet 1996) or going from the 'macroscopic to the microscopic' (Millet 2006). Jimenez (2008) suggests that scenario planning can helpfully complement search conferences by being conducted first to understand the environment.

Thomas (1994:11) describes the use of scenario planning as a way of addressing the "perceived shift in the business environment", while Bergman et al. (2006) argues that scenario practice is essential for ensuring an organization's capabilities are kept in tune with changes in the environment. Richards et al. (2004) outline a scenario planning practice at a higher education institution in the UK, aimed at ensuring the university achieves 'fit' with its environment. This outside in perspective has led Weinstein (2007) to argue that to prevent confusion the term 'scenario' should just be used in relation to exploring the contextual environment.

Survival in this metaphor requires organizations to co-evolve with the environment. Writers have highlighted a number of important factors for scenario planning to assist with co-evolution. Morgan and Hunt (2002) combine scenario analysis with cybernetic systems. Schoemaker (1997) calls for scenarios to be used in combination with competitor analysis to generate core capabilities. Walsh (2005) suggests that the contextual environment is usefully studied using scenarios and a PESTLE analysis, while Burt et al. (2006) disagree and argue that scenario practice should actually substitute for taxonomies such as PESTLE. Their reasoning is that scenario planning can be tailored to a specific organization and as such it yields richer, more relevant insights. Tessun (1997) and Fink et al. (2004; 2005) stress the scanning and monitoring of the environment to ensure the organization is abreast of changes.

Systems and their environments exist at multiple levels. This draws attention to how the outcomes of scenarios need to link to areas within the organization. For example, Schoemaker and van der Heijden (1992) describe a process at Shell which uses scenarios

to inform the vision and creation of options at the level of individual operating units, while Godet (1987; 1990) integrates scenarios with strategy processes, using, among other things, expert methods to decide on the most probable scenarios.

Scenario planning applications in the inter-organizational or wider system context. Finally, within this metaphor, are analyses of scenario applications at the system or inter-organizational level, an area where Soetanto et al. (2011: 906) diagnose a "dearth of literature". Examples that do exist include a project undertaken by Cairns et al. (2006:1010) with a local government authority and its partners. The authors found that the scenario process, with its focus on dialog, served a valuable role in overcoming fragmentation between the participants, thus enhancing "inter-organisational foresight". Another project, *Riskworld 2020*, enabled four participating organizations to combine resources and effort to address the common topic of risk with the outcomes being used in their individual planning processes (Wilkinson & Elahi 2003). Kahane (2002; 2004) describes the outcomes of scenario planning aimed a societal change. He argues that, from the scenario processes he has been involved in within South Africa and Guatemala, there are four resultant outcomes: reframed mental models, shared commitment to change created through dialog, regenerated optimism and enthusiasm, and renewed action and momentum. Mietzner and Reger (2009) describe an 'open foresight' scenario approach with high-tech SMEs. The aim of involving multiple players in the development of the scenarios was to foster interaction between them, create a 'common language', and to develop complementary strategies.

Undertaking scenario planning at this level has resulted in suggestions about useful tips and techniques. Goodier et al. (2010) comment on their experience using causal mapping to develop scenarios in a reasonably short amount of time at the sector level. Their approach includes aggregating individual causal maps into collective ones that are

used to encourage discussion among stakeholders. Biggs et al. (2007) and Doll et al. (2008) suggest paying attention to the scale at which scenarios are developed (in an environmental context) and suggest how these should be linked. Kok et al. (2006), for example, show how local scenarios can be developed using regional scenarios that essentially act as the boundary conditions for the local. Ozkaynak and Rodriguez-Labajos (2010) also explore the application of global and local scenarios and draw attention to the importance of agency in linking these.

LEARNING AND SELF-ORGANIZATION: ORGANIZATIONS AND ORGANIZING AS BRAINS

Conceiving of organizations and organizing as brains, attention is drawn to concepts such as learning, information processing, knowledge and holography (Morgan 1986).

Building social capital

Within the building social capital literature, key themes are: i) the role of learning in building social capital; ii) the use of digital technologies for building social capital; and iii) building social capital to support knowledge workers.

The role of learning in building social capital. A key focus of the literature within this metaphor is the role learning plays in building social capital. Kilpatrick (2002) and Kilpatrick et al. (1999) researched learning within Australian farming communities and found that the process created various forms of social capital: identity resources, shared language, shared experiences, and trust. Kilpatrick and Falk (2003) and Falk and Kilpatrick (2000:99) also take a learning perspective and argue that social capital is built by people drawing on knowledge and identity resources "as they make the sense which is

common between them". Knowledge resources include knowledge of networks, rules, skills and information sources; while identity resources refer to attributes such as self-confidence, norms, vision, trust and commitment. Resources are drawn on and developed by people participating in activities that are both "*sufficient"* in number and *"of a particular quality*" [emphasis in the original] (Falk and Kilpatrick 2000:101). Han (2006:99) also describes how learning is key to building social capital for start-up firms as they internationalize. Creating "many weak ties and a few strong ties" speeds up learning about new markets.

Authors such as Pedler and Attwood (2011) describe how action learning projects can build social capital by having structural holes bridged by people from different functional areas working together. Taylor et al. (2004) also demonstrated the value of action learning to build social capital in the context of a UK entrepreneurship program with people from socially disadvantaged backgrounds. They find that a key outcome was the social networks participants built for themselves, particularly leveraging contacts within the business school. Calabrese (2006) shows how an appreciative inquiry theoretical perspective in an action research program can build social capital between schools and universities.

Lesser (2000) and Kilpatrick and Vanclay (2005) describe the benefits of communities of practice for building social capital, which as informal groups enable like-minded people to gather and work together and develop relationships. Rhode (2004:106) also highlights how the pursuit of common activities in communities of practice enable meaning to be negotiated, social identities to form, and trust to be built – elements of social capital which cannot "be manipulated directly by training."

Nakamura and Yorks (2011) show how the reflective element of adult learning opportunities – executive education programs, action learning projects, and leadership

summits – provide the interactive spaces for people to dialog and share their thoughts and ideas. Through these processes, people build social capital – reflected in the creation of networks and increased levels of understanding and trust. However, van de Valk and Constas (2011:73), reviewing the literature on leadership development programs and their capacity for building social capital, "don't dispute" there is a relationship, but cannot find evidence for a causal connection. They acknowledge the limited material available on causal inference and leadership development programs and call for evaluations that incorporate such factors.

Taking a wider educational perspective, Kawachi (2008) explores how distance education might build social capital in poor communities in Asia by creating networks of interdependence. Shrestha et al. (2008) describe the potential, as well as the challenges, of non-formal education such as hobby courses and literacy programs to build social capital among providers and with the disadvantaged communities within which they work. Schuller (1997: 14) describes the role of education in building social capital and a learning society: "the challenge to education today, if it is to contribute to a learning society, is how to give people voice: voice in the literal sense, by providing an environment in which we can talk to each other; and voice in the civic sense, as a means of participating in activities which reinforce these obligations".

Riordan and Sarkar (1998) show how educational activities built social capital for a non-governmental organization. Activities such as encouraging two-way communication through a series of educationally focused newsletters raised awareness of the issues and encouraged interaction by the donors with the organization. Hillenbrand (2005) and Varheim (2007:426) review the role libraries can play in building social capital. Through "knowledge and reflection" and by providing an informal meeting place for people and a

suite of universal services (no-one is excluded from accessing the services), libraries are able to bring people together.

Arnold et al. (2007) describe how orientating a research program to involve local participants can be very effective for building social capital – as compared to more traditional, non-participatory processes. Working with one of the Native American nations, the authors co-designed, delivered and evaluated a rangeland and management curriculum. Social capital was built in the process through the forums bringing diverse stakeholders together, working on a meaningful project, valuing all inputs, collapsing the division between 'presenters' and 'audience', and providing opportunities for discovering shared interests through field trips, lunches and breaks.

The use of digital technologies in building social capital. Some writers explore the role digital technologies can play in building social capital (Chapman 2004; Preece 2002). Pigg and Crank in 2004 undertook a meta-analysis of the empirical literature to understand whether information and communication technologies (ICT) could build social capital in the community. They found the evidence to be inconclusive, acknowledging, however, that empirical records were limited and fragmented across disciplines and sources. In 2006, Sherif et al. argued that ICT-based knowledge management systems could develop all three dimensions of social capital. These systems do so by creating "dense and highly connected networks, whose members trust each other and feel obliged to carry out the responsibilities bestowed on them by the network with which they associate" (Sherif et al. 2006:802). The authors also found knowledge management systems lead to the development of a common language and shared experiences through capturing stories about clients: "The stories helped new members assimilate the culture and put together pieces of its history". Aula (2011), construing reputation as a form of social capital, also finds that online communications can assist in its building.

Mandarano et al. (2010:123) offer a new form of social capital – "digital social capital" – defined as "the process of building digital communities through planning practice, specifically public participation processes that embrace internet tools". They identified ten Internet-based tools for supporting planning practice. They found the most effective of these (based on the studies done at the time they were writing) are social networking sites such as Facebook and LinkedIn. The advantage of these tools is the way they enable "users to maintain a number of weak ties cheaply and easily, as well as create and maintain larger, diffuse networks of relationships from which they could potentially draw resources" (Mandarano et al. 2010:126). The authors cite another study that found that when Internet usage was focused on information exchange (as compared to social recreation), it "positively correlated with civic life and social trust" (Shaw as cited in Mandarano et al. 2010:130). The authors argue that both of these findings hold promise for building social capital via digital technologies in a planning context.

Stern and Adams (2010) found that the Internet is a valuable way of building social capital in rural areas, linking people locally and to outside groups. In particular, they found that email was effective given its responsiveness and interactive opportunities (as compared to a passive web page). However, using the Internet to build social capital depends on the availability of hardware and the ICT literacy of the population. Ferlander and Timms (2007), researching how the use of the Internet influences the building of social capital in a disadvantaged area in Sweden, found that social rather than just technological factors are important. That is, building social capital with ICT depends on whether people have access to technologies, the skills to use them, and whether they have prior social capital (i.e. do they have anyone with whom to communicate?). Citing a successful ICT-cafe, this space provided people with the opportunity to both use the

Internet and to meet in person, a combination particularly beneficial in a community with low levels of social capital and access to technologies and knowledge of how to use them.

Building social capital to support knowledge workers. Four authors look at the building of social capital among knowledge workers. Tymon and Stumpf (2003) reviewed initiatives that organizations can take to build social capital among knowledge workers and identified alumni networks (such as consultancy firms have), transfer and relocation programs, community activities, affinity groups, assignment rotation, and increased liaison with clients. The authors, however, argue that of all the capitals, social capital is the one that receives the least support for practices to build it. Larsson (2007:610), who looks at design teams across distributed settings, outlines the challenge of creating shared understanding within them. Such understanding is essential given the ambiguity of the design function – he likens the process to a wicked problem (Rittel & Webber 1973). In these situations, it is extremely important to build what he calls a knowledge category called "know-who", defined as "the interpersonal relationships that enable people to 'know who knows', to 'know who to ask' and to 'know who to trust'". The author declares that further research is needed to understand how to establish this knowledge category in distributed design teams.

Swart and Kinnie (2003) show how HR practices can build social capital and encourage knowledge integration. Drawing on the example of a software firm, they cite recruitment policies such as hiring people that fit with the organization's culture, thus ensuring mental models are congruent and there are high levels of identification with the firm. Finally, Mulford (2007) describes a number of ways in which social capital can be built in learning communities – that is, schools. He highlights the role of leadership, staff development and organizational learning for building social capital among colleagues, the value of fostering networks to build social capital between schools, and the importance of

creating school-community partnerships to build social capital between the school and the wider community.

Scenario planning

For scenario planning the literature groups around: i) the conceptualization of scenario planning as a learning process (and a way to accelerate this process); ii) scenario planning and overcoming cognitive biases in decision making and learning; and iii) the use of digital technologies and handling quantitative and qualitative data in scenario planning.

Scenario planning as a learning process (and a way to accelerate this process). One of the most prominent features of the scenario planning literature is the conceptualization of scenario planning as a learning process – and as a process to speed up learning (e.g. Brenneman & Keys 1998; Burt & Chermack 2008; de Geus 1988; 1997; Ellis, et al. 2000; Fahey and Randall 1998b; Galer & van der Heijden 1992; 2001; Mercer 1995; Stokke et al. 1991; van der Heijden 2004a; van der Heijden et al. 2002). Neumann and Overland (2004) suggest this focus on learning occurred as scenarios were adapted by organizations from the military and public context. Mason (1994) goes a step further to suggest this focus on learning is why scenarios became popular again in the 1990s. Chermack and Swanson (2008:130) propose that scenario planning should be the HR profession's "primary strategic learning tool". Learning is contrasted to strategizing by van der Heijden (2004a) who argues that while strategizing (with its goals and plans) is appropriate in a certain environment, an uncertain environment requires a learning approach which is about experimentation, observation, and hypothesis development.

Tsoukas and Shepherd (2004:9) argue that scenario-based learning is about "preparing the organization to spot differences soon enough and act before or better than others*"*. Thus, Ilbury and Sunter (2007) use the visual image of a fox in their scenario

planning, calling them quick-witted, adaptable animals – characteristics organizations need to have for success. Well known scenario practitioner de Geus (1988:71) sums up the importance of learning in the comment that, "The ability to learn faster than your competitors may be the only sustainable competitive advantage". Two ways in which learning is sped up with scenarios is having them substitute for the action stage in the Kolb learning cycle, thereby potentially shortening the traditional feedback time in the learning loop (Bood & Postma 1997), and by providing a process by which tacit knowledge can be converted into explicit knowledge, which is then available for people in the organization to work with (Bergman et al. 2004).

Also within this metaphor is the concept of the role of scenarios for achieving organizational holography. That is, for organizations to speed up their learning and adaptation, the whole needs to be designed into the parts (Morgan 1986). Scenario practice contributes to such design by having the scenarios communicated through the organization, thereby acting as memories of the future (Ingvar cited in de Geus 1997) drawing people's attention to what environmental changes to look out for.

Scenario planning and overcoming cognitive biases in learning and decision making. There is also a considerable body of literature in this metaphor about how scenarios address cognitive biases, speed up learning and improve decision making. Schoemaker (1991; 1993; 1995) shows how scenarios play a valuable role in addressing probability heuristics (Tversky & Kahneman 1974). He argues scenario planning is effective in having one set of biases (overconfidence) offset by another (the conjunction fallacy). He also makes the point that bounding uncertainties into a few scenarios is a benefit of scenario planning because of the mind's limited ability to deal with too much complexity. Xiang and Clarke (2003:899) describe scenarios as "apparatus for mental exercises that help stretch and focus people's views into the future". They argue that scenarios serve a

bridging and a stretching function. Bridging refers to how the scenario set can enable developers and users of scenarios to work together – to pool their complementary knowledge. Stretching refers to how scenarios act "as apparatus for the mental exercises" for overcoming cognitive biases. The biases they think most relate to futures studies are "the heuristics of availability and adjustment" (Tversky & Kahneman 1974). Clemons (1995) finds that scenario planning successfully addresses overconfidence, arrogance and anchoring. Kuhn and Sniezek (1996:245) suggest the main cognitive benefit of scenarios is acceptance of a broader range of possible outcomes. They also make an interesting point that, "Since congruence between perceived uncertainty and actual environmental volatility has been shown to be positively associated with the economic success of businesses (Bourgeois, 1985), a deeper understanding of what influences perceptions of uncertainty may have implications for improving organizational performance. Other writers (e.g. Weick, 1987) have already argued that confidence can effectively substitute for strategy". Thus, scenario planning could be beneficial in not only challenging current understandings (checking overconfidence) but providing managers with new ways of seeing that gives them confidence to act.

Bradfield (2007; 2008) identifies a number of cognitive barriers that can affect learning in scenario projects, arguing that they are underestimated by scholars and practitioners. He concludes by suggesting that significant attention needs to be given to the design of scenario processes to address them. Wright and Goodwin (2009:824) describe four improvements to the intuitive logic scenario approach to aid decision making and planning under low levels of predictability. These are: "(i) providing conditions for challenging mental frames by creating objectives-focused scenarios using backward-logic; (ii) understanding human motivations and emphasizing their implications within scenarios; (iii) enhancing scenario planning through adopting the approach of crisis management in

order to augment the analysis of uncertainty; and (iv) evaluating strategic options against constructed scenarios in terms of flexibility, diversification and insurability".

The focus on cognitive psychology in scenario planning has led Grinyer (2000:21) to promote the work as a "cognitive approach to group strategic decision taking", arguing that this 'softer' approach complements more analytic strategic planning by encouraging learning about the situation.

Use of digital technologies and handling quantitative and qualitative data in scenario planning. Some writers call for increased use of information technology and modeling to handle the volume and variety of data involved in scenario planning (e.g. Davies, et al. 2005). Dockerty et al. (2006) and Vervoort et al. (2010:614) call for the use of interactive media such as landscape visualization, digital montages, gaming and visual analytics to aid communication of scenarios in the context of natural resource management. Wild et al. (2005) propose web-based knowledge portals for scenario planning with groups that are unable to be physically co-located.

Some authors propose the use of Fuzzy Cognitive Maps (Jetter & Schweinfort 2011; Kok 2009; van Vliet et al. 2010) to bridge the gap between storylines and quantitative models. Paich and Hinton (1998) and Chandler and Cockle (1982) advocate integrating simulation models with scenarios and Malone et al. (2001) suggest combining scenario inputs with models using systems dynamics. Moutinho et al. (2006) combine 'hard' strategic diagnostics tools with what they call softer approaches such as scenario planning to build hybrid models. Goodwin and Wright (2001) and Montibeller et al. (2006) propose the use of multi-attribute value modelling in scenario planning and Durbach and Stewart (2003) recommend goal programming. Millet (1998) suggests computer-based modeling using the cross-impact technique.

Finally, some authors find a tension in scenario planning from the intersections of handling qualitative and quantitative data. Bunn and Salo (1993:301) argued that, because scenario planning sought to establish itself as an alternative to forecasting, it resulted in "an uneasy compromise between the objectives of seeking to support important decisions and promoting organizational learning". That is, more qualitative, possible futures for the purpose of learning versus quantitative forecasts to support decisions. In the latter case, probabilities are still used (see Millet 2009). Thus, Coates (2000) argues that, even though scenarios are regarded as alternative possible futures, there is sometimes still a residual sense in the language and epistemology that they are forecasts.

CREATING SOCIAL REALITY: ORGANIZATIONS AND ORGANIZING AS CULTURES

Conceiving of organizations and organizing as cultures, attention in this metaphor is drawn to concepts such as values, norms, enactment and social construction (Morgan 1986).

Building social capital

The building social capital literature in this metaphor groups around: i) social capital and the creation of communities and relationships; ii) the building of trust and norms; and iii) attending to cultural differences when building social capital.

Social capital and the creation of communities and relationships. A major theme in the social capital building literature is the creation of communities and relationships. Sanyal (2009:530), focusing on how microfinance programs can build social capital, challenges the negative perception of economic ties in the sociology literature. She instead suggests that economic ties are a "form of human freedom and part of a repertoire of potential

individual capabilities". As an example of this she finds that one-third of the microfinance groups she researched in India became involved in addressing collective action problems. The author identifies three factors that built social capital in these microfinance groups: "the economic ties which inculcates trust and intimacy through frequent interactions; the group network, which shapes costs and benefits of sanctioning and increases the ability to organize; and group participation, which improves women's agency". The author also argues that social capital is built as a by-product of the development of economic ties – although she qualifies her comments by saying that it can partially be built by deliberately attending to institutional arrangements and membership criteria.

Feigenberg et al. (2010) analyze the impact of microfinance programs on building social capital and empirically verify that repeated interactions sustain cooperation and increase risk-sharing. Randomly assigning first-time borrowers from a microfinance institution in India to meet either once per week or once per month (over 10 months), they found that a year after the loan cycle ended, the participants who met more frequently were 40% more likely to attend social events together, 19% more likely to visit each other outside loan meetings, and 29% more likely to say that they would ask another (former) group member to help in the case of an emergency. The authors also find that the group that met more often developed increased informal risk-sharing arrangements, thereby reducing their levels of default. Woodworth (2008), also exploring the world of microcredit, argues that the shift from financial to social collateral among the very poor builds social capital by overcoming the struggle for survival that can result in the feeling (and subsequent actions) that everyone is out for themselves. Microcredit creates group processes where members support each other by taking on formal responsibility for repaying not only their own loans, but those of the group members as well. Drawing on two case studies, Woodworth states that the social capital built through group processes is

strengthened through training, group responsibilities, social interactions, mentoring and sharing best practices.

Pronyk et al. (2008:1559) measured the impact of a health program in South Africa to see whether social capital could be intentionally created in communities to realize health benefits. The program "combined group-based microfinance with participatory gender and HIV training in an attempt to catalyze changes in solidarity, reciprocity and social group membership as a means to reduce women's vulnerability to intimate partner violence and HIV". They found that the program could build social capital and indicated that this challenges suggestions by scholars such as Putnam that it takes considerable time.

Taylor (2011:2 and 3) draws attention to the role rhetoric ("as the discourse") and public relations ("as the enactment of that discourse") can play in building social capital in communities. Exploring how groups in a Jordanian town are working on community issues, she argues that the use of rhetoric and public relations provide the opportunity for "facilitated communication to learn about each other and adjust to a changing environment".

Wong (2008:1435) makes a plea for "deeply exploring" the institutional environment before intervening to build social capital in communities. The reason for this is that existing informal arrangements that mediate interactions could be overlooked, with detrimental consequences. Focusing on three cases in Hong Kong and 'testing' Ostrom's design principles for collective action, the author finds that "the success of building social capital lies in our understanding [of] the dynamics between agency, institutions and structure" (Wong 2008:1434). Agency is important for how people think about their networks and the reasons they get involved to build social capital (which are far more complex than rational self-interest suggests). Formal and informal institutions can interact poorly if the current situation is not understood and the inequalities disadvantaged people

experience in a society can make participating in activities to build social capital difficult (this is pursued further in the 'instruments of domination' metaphor). Unger (1998) also provides a good overview of institutional factors that have an impact on the building of social capital with his study of economic and political development in Thailand.

Lockhart (2005) explores the role faith-based organizations play in building social capital through poverty-to-work programs. The author finds that it is the programs' deliberate focus on building relationships and creating a sense of community that sets them apart from government and for-profit services which are more instrumentally focused. Faith-based organizations tended to provide meals as part of their programs and participants were joined by volunteers, mentors and faculty. Faith-based organizations also assigned a church volunteer to act as a mentor and facilitated access to congregations with their social diversity, thereby providing further opportunities for building social capital. Prins and Ewert (2002), also acknowledging the significant role congregations can play in building social capital across diverse groups, call for extension and faith-based organizations to work together to bring about community renewal where it is needed. Robinson and Meikle-Yaw (2007) also outline the role extension services play in establishing projects to engage local people in building social capital and creating change in "places that seem to have lost hope".

In reviewing a local development program introduced in three US communities, Gittel and Vidal (1998) find 11 elements that affected the building of social capital among volunteers, staff and the community. Six of these were intermediate outcomes such as credibility of the program and comprehension of community development (which was largely non-existent prior to the program). The other five shaped the final outcomes, such as quality of the communications and congruence of efforts. Murray (2000) also highlights how social capital can be built through a local-based initiative. This includes focusing on a

scale of organizing that affords effectiveness (small initiatives are too weak), focusing on strategic planning and implementation, and broadening representation. Wann (1995; 1998), meanwhile, proposes self-help groups as a way of building social capital in the community, while Griffiths et al. (2009) describe a set of local community capacity-building initiatives in a socially disadvantaged area in Sydney that built social capital for health outcomes.

At a broader planning level, Buys et al. (2007:296) find "no significant relationship between social capital and the 'planned' or more 'traditional' nature of local areas", prompting them to suggest that there is no universal urban planning formula for building social capital. Rather, enhanced levels of social capital seem to depend on the combination of residents and their inclination towards each other. Mandarano (2009) uses social network analysis to understand the effectiveness of social capital building in a collaborative environmental management planning process in the US involving multiple stakeholders. The author finds that participation in information exchange forums over time builds understanding and consensus. Characteristics of such forums include having a clear purpose and agenda, frequent interaction, committed participants and authentic dialog. Some deterrents to building social capital include physical distance/divides and a lack of resources. The author also finds that the application of social network analysis in the early stages of a collaborative planning process can identify which organizations have similar interests, which ones are already connected, which ones are not and why. This information can then be used to design intervention processes that build on those who have common interests and bridge those whose interests differ.

Crawford et al. (2008:549) find that participation in community activities more easily builds bonding rather than bridging social capital, reinforcing the perspective in the literature that bridging is more difficult to build. The authors' research also indicates that

different approaches are needed to build social capital in small as compared to large communities. In small ones, people feel they know each other reasonably well and want to jump straight into the task where for larger communities activities are a "venue to develop social goals and connections". For larger communities, initial ice-breaking activities are thus useful.

Methods such as network analysis lead Wilson (1997:746) to conclude that the role of community-building professionals is changing. The author outlines how the role of professionals as "technical expert, master planner or manager" will become part of a larger role of "catalyst, facilitator, communicator, team player". This will mean planning professionals will be more involved in promoting stakeholder participation, measuring intangibles and facilitating group learning using tools such as participatory action research, organizational learning, dynamic systems analysis, communicative action, non-traditional indicators and participatory methods. To fulfil this task, pedagogy within planning degrees at university will need to change.

Other authors focus on the building of communities and relationships within organizations. Lengnick-Hall and Lengnick-Hall (2003:62) propose that the role of HR should be re-orientated to the building of social capital. In doing so, they suggest HR professionals partner with managers, employees and stakeholders to identify, encourage and support the development of important relationships. The role of HR in these partnerships "is that of facilitator and coach... and in putting formal and informal systems in place that nudge these relationships in the right direction". Leana and van Buren (1999:545) suggest HR practices can play a significant role in building (and destroying) social capital by organizations acknowledging the embeddeness of human capital within relationships. The authors suggest three categories of HR practices that have an impact on social capital building: promoting stability and reducing turnover through taking a long-

term perspective of employment relationships, selecting and rewarding people who live the values and goals of the organization, and "developing rules and procedures that define social structure in terms of positions rather than people", thereby having the social capital transferable through the position.

Other writers draw attention to the role of behaviors for building social capital in organizations. Bolino et al. (2002:505) describe how organizational citizenship behaviors (OCBs) can build the three dimensions of social capital. They define OCBs as "employee behaviors that go beyond role requirements, that are not directly or explicitly recognised by the formal reward system and that facilitate organizational functioning (Organ 1988)". The authors (Bolino et al. 2002:508) suggest that loyalty, obedience and functional participation, defined as "employee contributions that exceed required work standards", builds the relational dimension of social capital, that advocacy participation – "the willingness of employees to be controversial in order to improve the organization by making suggestions, innovating and encouraging other employees to speak up" – builds the cognitive dimension, and that social participation – "employees' active involvement in company affairs" – contributes to all three. They also propose that the importance of each dimension of social capital is dependent upon the context. That is, the cognitive dimension is important in the context of knowledge creation (Nahapiet & Ghoshal 1998), more structural connectivity may be important for organizations in dynamic environments so as to foster information exchange, and the relational dimension may be particularly important where "there is a high degree of task interdependence among employees" (Bolino et al 2002:518).

Pastoriza et al. (2008:329) focus on individual managerial behaviors in the building of social capital. They argue that behaviors "based on the true concern for the well-being of employees, as well as their motivational and ethical development" can build social

capital in organizations. Such behaviors need to be based on three principles – leading with exemplary behavior, appealing to staff members' "higher ideals and moral values" so that they realise the consequences of their actions in terms of other staff members, and not acting in ways that "betray employees' trust and identification with the firm".

Rob and Zemsky (2002:244) equate a good 'stock' of social capital with a good corporate culture. They explore the mechanics of creating this stock, particularly the incentives that can be put in place to encourage cooperation: "by choosing incentives, the firm is able to affect the process of preference formation; by inducing workers to be more helpful today, the firm creates a more cooperative workforce tomorrow". The authors argue that these incentives have "intertemporal considerations". That is, incentives increasing individual productivity lead people to give less effort to cooperative tasks, which, while increasing profits in the short term, adversely affects them over the longer term (due to the aforementioned lack of cooperation).

Nissen and Jarley (2005:20) explores how a shift to a focus on creating social capital within and outside the workplace – the "social-capital model of unionism" – might address the crisis in legitimacy of the current union service model with its focus on workplace representatives. Social-capital unionism "organizes around people, not issues", building networks that are self-reliant, providing in-kind services and "expanding the scope of legitimate activity from acts of confrontation to include acts of workplace community-building".

Building trust and norms. There is also a significant body of literature within this metaphor focusing on building these social capital resources. Evans and Syrett (2007:57) argue that, while social capital is sometimes seen an instrument of neo-liberalists, it is also a bulwark against them. In their study on local economic development and social enterprises they found that values (operationalized as shared norms) were key to the

process of building social capital and social enterprises. Shared values about the merit of the enterprises built networks among people and, over time, enabled trust, reciprocity and mutuality to emerge. This social capital was then able to be appropriated (Coleman 1988) for further initiatives. In another social enterprise – the establishment of the Grameen Bank in Bangladesh – Dowla (2006) shows how the staff went about building social capital among the poor who were particularly skeptical of being engaged after years of neglect by the government. The Bank focused on creating trust, changing norms and initiating horizontal and vertical networks. To build trust, they demonstrated a series of behaviors that indicated their interest in and respect for the borrowers, such as providing support in disasters. This increased a sense of reciprocity among the borrowers, resulting in them repaying their loans on time. New norms were created by actions that reinforced beliefs that lending is not about charity and by demonstrating transparency in dealings. Networks were built through numerous opportunities for borrowers to meet other people through actions related to their borrowing. As a result of reviewing this case, the author agrees with Putnam that the building of social capital takes time and emerges as a by-product of other activities.

Another way in which trust can be built is described by Richey (2007:70), who researched the outcomes of a community currency program in Japan aimed at increasing generalised trust. Credits were awarded to those people who attended town meetings or who volunteered in community services. The credits were then used to pay for government services, buy goods at participating stores or barter with other citizens. Defining social capital as civic engagement, social networks and trust, the author finds the program did build social capital through interaction and the shared experiences the program engendered. Community currencies are part of what are called "technologies of citizenship" (Cruickshank as quoted in Richey 2007:83): "In this view, democracies create

citizens by taking an active role in encouraging human development and collective action. They manufacture trusting and engaged citizens".

Lewicki and Brinsfield (2009) also focus on building trust, offering five steps. First is to draw on existing factors that signal 'quick' calculus-based trust – an initial, more superficial form of trust – such as reputation of the other person, whether they belong to a social group or organization that is relevant, and what the nature of past interaction has been. Second is to identify factors that will develop calculus-based trust further, such as consistency in actions and positive emotional displays. Third is to develop identification-based trust – this is a deeper form of trust based on empathy with the other person. This is achieved through, for example, the creation of a collective identity and developing shared values and goals. Fourth is to manage calculus-based distrust by stipulating agreements, processes and procedures that will outline how future transactions will be conducted, provide deterrence if trust is violated and minimize inter-dependencies among parties. Fifth is to manage identification-based distrust through openly acknowledging whether there are contentions, checking the validity of identity-based differences, and establishing ways for controlled interaction.

Robison et al. (2002) describe how economic transactions have changed with the industrialization of the agricultural system. Exchange previously occurred via auctions, whereas exchange now occurs more directly between producers and buyers. The authors suggest this means social capital, which produces "socio-emotional goods", needs to be built into agricultural exchange systems. Ways of doing they propose include giving gifts, creating institutions, and identifying points of shared interest.

It also seems that norms – and skills – created in one context are transferable to others. Research by Brewer (2003:20) found that public servants are more civic-minded than others and more likely to participate in community activities. The author thus argues

that public servants are "catalysts" for building social capital and attention should be given to leveraging their interest both in their formal employment and other civic activities. Green and Brock (2005:1) show how organizations "serve as potential training grounds for diverse types of civic participation". People in organizations learn skills in areas such as negotiating, sharing and discussing opinions, and creating networks. Such skills can be transferred to an interest in public affairs and the political domain.

Attending to cultural differences when building social capital. Finally, two pieces of literature draw attention to the impact cultural differences can have on building social capital. Starkey and Tempest (2004:81) explore national contexts. The US, which they say regards the organization as a machine and has a preference for individualism, results in social capital that is created through networks developed "for opportunistic gain". In Asia, the authors cite Hitt et al. (2002) to note that "family and hierarchy inform business relationships, leading to mutual obligation but with the risk of tribal fiefdoms, politics and undue influence". In Europe, they argue there is more emphasis on "principles of social justice and democracy, where individual, family and community welfare are aligned". Such cultural differences have led Taylor (2007) to call for HR professionals to acquire the necessary competencies for building social capital in multinational companies.

Scenario planning

Within the scenario planning literature, key themes highlighted in this metaphor are: i) the constructivist perspective on scenario planning; ii) scenario planning as a strategic conversation; iii) the role of stories and storytelling in the work; and iv) how cultural differences affect scenario planning.

The constructivist perspective of scenario planning. A focus 'on creating social reality' in this metaphor sees a grouping of material from writers explicitly approaching scenario

planning from a constructivist perspective. Statler and Jacobs (2003) argue that scenario planning is essentially a process of enactment which can be aided by theories of play. Wright (2004; 2005:86) critiques the intuitive logics scenario school for not going far enough in understanding scenario planning as essentially about interpretation and sensemaking and draws on the fields of social constructionism and narrative to propose that scenarios be considered "prospective sensemaking devices". Similarly, Tevis (2010) argues that scenario planning is too reactionary – premised on the view that the future is rushing towards us. He questions whether this is the only way to think about the future – should we react or do we in fact create and enact? Taking a more enactment focus to scenario planning, he proposes a goal-orientated approach where the group decides first what the goal is – the ideal design – and then uses scenarios to determine the best pathways for achieving this. Finally, Chermack and van der Merwe (2003) argue that constructivism is a core theoretical domain informing scenario planning, which they say occurs through the strategic conversation.

Scenario planning as strategic conversation. The construction of social reality in scenario planning occurs through the 'strategic conversation' (van der Hiejden 1996; 2005), essential for approaching strategy in times of uncertainty. Van der Heijden (2005) and Schwartz (1996) describe the strategic conversation as having a formal aspect of planning meetings, documentation, etc. and an informal aspect when people meet in corridors and during lunchtimes. These two aspects are reinforcing, such that what is discussed formally is picked up in informal chats and what is talked about informally finds its way back into the formal process. Thus, Ratcliffe (2002:19) describes organizations as "essentially networks of personal interconnections based on conversation", while Burke (2009:101) sees the role of scenarios as not being about forecasts "or even alternatives but about having deeper more effective conversations about worlds we wish to create". Provo

et al. (1998) argue that scenario planning can assist HR professionals to participate in the strategic conversations of the organization, while Maina and Sivi (2004), describing the public interest scenario work carried out in Kenya, suggest the scenarios had most impact by generating dialog in diverse networks.

The effectiveness of the strategic conversation has been the focus of a small study by Chermack et al. (2007), who found that scenario projects increase communication and the conversation skills of participants. Some authors have discussed elements that make the strategic conversation effective. Hodgkinson and Healey's (2008) research finds that design principles and propositions in relation to team composition and facilitation are important. Graetz (2002) similarly highlights the importance of psychological profiles in scenario teams and argues that a mix of left- and right-brain-dominant people are needed if creative but plausible scenarios are to be developed. Islei et al. (1999:63) warn against the dangers of striving for consensus too early in the conversation and thus losing the richness that is possible by exploring the different opinions and ideas of the participants.

Scenarios and the strategic conversation can also create networks. Galer (2004a:33; 2004b), while writing about the scenarios developed as part of political change in South Africa post-apartheid, suggests that these scenarios might have supplied the "myths" that assisted with the transition. He also makes the point that the content of the scenarios may have been no more important than the "durable networks" the scenario processes generated – supporting consensus and change over the long term.

The role of stories and storytelling in scenario planning. Central to the strategic conversation and thus scenario planning are stories and storytelling. Schwartz (1996) sees the strength of scenarios being in their ability to combine multiple variables and to enable readers to suspend disbelief more readily than is possible when viewing graphs and tables. Earley (1998) says scenarios are powerful if written as a future annual report while Bezold

(1996) promotes the use of archetypes. Staley (2002:72) makes an interesting case for historians as good scenario writers – writing "histories of the future" – suggesting history methods would enhance scenario writing.

But what makes storytelling and scenarios effective? Ramirez (2008b:189) argues for clarity as a form of aesthetics: "I believe that scenarios need to be like good literature – they need to be read by users in ways that help their minds render futures 'more real than real'". Chermack (2006) suggests using Pink's six senses (design, story, symphony, empathy, play and meaning) as a set of criteria for judging the quality of scenarios. Similarly, Flowers (2003:33), who has written many of Shell's scenarios, suggests they need to be like "stage sets" where decision makers are able to walk onto the set and construct meaning for themselves.

Cultural differences affecting scenario planning. Another group of literature within this metaphor explores the relationship between culture and scenario planning. Wilson (1998a) notes that one of the greatest challenges for scenario practice is its compatibility with the organization's culture, prompting Mason (2003) to suggest that the success of a scenario project depends on the process and the desired outcomes being aligned with the culture of the organization. Mason says organizational cultures usually fall into three categories: leader driven (which uses scenario planning for directional strategy), plan driven (which uses scenarios for contingency planning) and evidence driven (which uses scenario planning for learning and team-building). Eames and Skea (2002) link scenarios with cultural theory to argue that the reason for the significant take-up of the UK Foresight Programme's Environmental Futures scenarios is their reflection of all four of the groups that make up this theory. It is this ability to reflect the perspectives of all the groups that gave this scenario set its universal appeal.

Taking a slightly different perspective, Korte and Chermack (2007:10) note that the scenario process itself can bring about cultural change. They argue that an organization's culture is equivalent to the "collective contributions of individual mental models". As scenarios are able to influence mental models, cultural change can be bought about by scenario planning. Werner (1990) talks of how scenario planning canvasses the individual and collective wisdom of the organization, showing individuals how their views have shaped the organization's strategy, building commitment. Bezold (2010) stresses the importance of scenario planning connecting with the aspirational and visionary elements of the organization and Bohensky et al. (2006) speak of the empowering nature of scenarios (a sense of 'ownership rather than spectatorship') and the ability of scenarios to be able to engage both scientists and decision makers to effectively deal with both ecological and social processes.

Some writers have focused on the role scenario planning plays in building the culture of teams. Hill (1994) suggests that a key aspect of scenario planning is team-building, which can be particularly effective when members have diverse views. Similarly, Ringland (2005) argues that the development of scenarios can develop a shared language and make tacit worldviews explicit among a diverse group. Chermack et al. (2010:147) advocate for "scenario planning as a team development activity" which HR professionals are well placed to assist.

INTERESTS, CONFLICT AND POWER: ORGANIZATIONS AND ORGANIZING AS POLITICAL SYSTEMS

Conceiving of organizations and organizing as political and government systems, attention is drawn to the differing interests between actors, the conflict that can be generated from these different interests and how power is used to address them (Morgan 1986).

Building social capital

Within the building social capital literature, key themes highlighted are: i) how different interests affect the building of social capital; and ii) the role the institutional context plays in building social capital.

How different interests affect the building of social capital. A major grouping of literature within this metaphor explores the role of building social capital in the context of differing interests. Goldsmith (2002:46) finds that business associations in Africa create social capital among member firms by facilitating collaboration. This collaboration contributes to limiting unfair practices and diminishes suspicion "that one's business adversaries are getting ahead through such unfair practices". Arregle et al.'s (2007:74) research finds that the creation of social capital in firms with a dominant social group (such as family firms, new venture firms, and non-government organizations) is an outcome of the dynamics within and between the different sub-groups. Knauf (2005) describes how social capital can be built in the New Zealand parliament in response to public demands for reform. Likening the problem for parliamentarians with that of the 'Prisoners' Dilemma' – it is rational for each parliamentarian to act aggressively – he argues that building friendships and networks of trust and reciprocity overcomes this. He provides two examples: an across-party business committee that requires consensus on decisions, encourages communication on issues outside meetings and socially meets over drinks; and a parliamentary rugby team whose team members are drawn from across the parties who play locally and against other parliaments in international tournaments. These initiatives would provide opportunities for more trusting and respectful relationships to develop, thereby having an impact on behavior in parliament.

Westermann et al. (2005:1795) find that gender impacts levels of conflict and the building of social capital in national resource management groups: "collaboration,

solidarity and conflict resolution all increase with women's presence in the groups... Our findings suggest that norms of reciprocity are more likely to operate in groups where women are present and that this may be the result of women's work responsibilities that rely on frequent collaboration". The authors conclude that it is important to assess the social capital in a group before intervening so that the right combination of social capital is matched with the specific collective activities being undertaken.

Some writers attend to building social capital in post-conflict situations. Brune and Bossert (2009:891) report on a deliberate intervention to build social capital in two communities in post-conflict Nicaragua. The program was aimed at developing the management and leadership skills of community members and included technical assistance, leadership training, information dissemination, and outreach activities. The authors find the programs had a positive impact on what they refer to as the "attitudinal components of social capital – feelings of solidarity and closeness, social harmony, but interestingly not of trust". The authors suggest this result means that it can take a longer period of time for changed attitudes to convert into changed behaviors.

Park (2010) describes how the Chinese Indonesian community, fearing for their safety after the ethnic violence during the economic crisis of 1998, established a number of civic groups that resulted in a set of networks that increased interaction and understanding among Chinese and indigenous Indonesians. The author found that building these cross-cutting networks and bridging social capital, the importance of which was described by Putnam in his study of social capital in Italy, reduces ethnic conflict in divided societies. Park (2010:76) writes that, "scholars of ethnic politics have taken up the concept of social capital to explain ethnic peace. They argue that social capital functions as a catalyst for ethnic peace in divided societies". Pickering (2006:92) also explores how addressing ethnic divisions in Bosnia can be achieved by building bridging social capital. Her work

draws attention to 'venues' of social capital building – such as multi-ethnic voluntary organizations, neighborhoods, and workplaces. The author found the most successful venue was workplaces because they "encouraged repeated interaction among colleagues of different backgrounds on a horizontal basis, which promotes mutual interdependence". Workplaces also enabled people to demonstrate their professional skills, which "enhanced their public reputation" (Pickering 2006: 93).

Bobbio (2003:344) describes the impact "deliberative arenas" have on building social capital. Defined as physical places "in which all those who are directly involved take part in a collective decision-making process based on the use of arguments", they include multi-stakeholder dialogs, Agenda 21 forums at the local level, and negotiated agreements over environmental conflicts. Such venues are different to consultation processes, as the decision-making power resides within them. The author finds that the most important factor in creation of deliberative arenas – even in conflict situations – is the nature of the design so that interaction between the participants is productive. Productive interaction in these arenas results in social capital being built as a by-product. However, such arenas do have limitations for building social capital, such as the small number of people involved and the fact that they are temporary structures (Bobbio 2003).

The role the institutional context plays in building social capital. Another grouping of literature in this metaphor explores the importance of attending to the institutional context when building social capital and, in particular, the role hierarchical forces (such as governments) play. Fukuyama (2001:7), defining social capital as "an instantiated informal norm that promotes cooperation between individuals", argues that economists see social capital emerging from Prisoner Dilemma games among individuals. Calling this a limited view, he states "that social capital more often than not is produced by hierarchical sources of authority, which lay down norms and expect obedience to them for totally arational

reasons" (Fukuyama 2001:16). Such sources include religion, tradition and shared historical experience. The author argues that governments can have the most impact on building social capital through education and by providing public goods efficiently. He also notes that governments can destroy social capital when they "undertake activities that are better left to the private sector or to civil society [because] the ability to co-operate is based on habit and practice: if the state gets into the business of organizing everything, people will become dependent on it and lose their spontaneous ability to work with one another" (Fukuyama 2001:18).

Conceptualizing social capital as trust among people, Chloupkova et al. (2003) show how different political systems influence the building – and destroying – of social capital. The authors compare agricultural cooperative movements in Denmark and Poland and suggest that capitalistic and democratic systems of government – as compared to communist ones – provide the conditions for building social capital. Qualities such as entrepreneurship and the creation of bottom-up mechanisms for addressing economic inequalities in capitalist societies encourage the building of cooperatives and social capital. In turn, cooperatives encourage democracy by providing social capital in the cross-linking way that Putnam (1993) observed in northern Italy. Conversely, communist regimes co-opted and took over control of the cooperatives in Poland and destroyed social capital (Chloupkova et al. 2003).

Fox and Gershman (2000:399) researched 10 World Bank-funded projects to understand how the Bank's funding affected the institutional environment within which "pro-poor social capital" could be created. The authors make four policy suggestions for enabling a social capital building institutional environment: (1) invest funds where the reformers are within nations (rather than at the national level); (2) invest in political capital during the design phase to address political differences (such as willingness to share

power); (3) expect conflict and find ways to manage it; and (4) differentiate investment strategies to take into account existing differences in social capital (especially with regard to ethnicity and gender). Ostrom (1994:558) also takes a proactive perspective to "crafting institutions", seeing this as a way of investing in social capital: "The investment in social capital frequently takes the form of bargaining over which rules will be adopted to allocate benefits and costs of collective action". She argues that unless social capital is attended to as part of building physical capital, the benefits of the physical can be negated.

Crothers (2002) describes political sciences' (including Putnam) indifference to the role leaders' play in public life. On the contrary, she argues leaders do matter when it comes to building social capital. Activities, associations, collective action, etc. do not happen without someone organizing them. Drawing on Burns (1978), she describes two forms of leadership important to the building of social capital. Transactional leadership is where conflict is minimal and the goals of the community are clear. Leadership here is transactional and facilitative. Transformational leadership is about changing the order of things to lead to new goals and values. Leaders here use persuasion, rhetoric and power. Thus, leadership is important to the building of social capital – especially when it is understood that leaders can destroy as well as create social capital through their actions.

Warner (1999; 2001) takes up the disagreement among scholars about the capacity of government institutions to build social capital in communities. Focusing on local government, she argues there is a role for the state but it depends on governance structures being open and participatory and governments seeing community members as partners and not clients. The author finds that when not-for-profit organizations with good cross-community links can team with government bodies to provide initiatives, the impact on building social capital can be very effective. Similarly, Maloney (2000) disputes Putnam's 'bottom-up' view of social capital formation that rules out a role for governments.

Governments can proactively contribute to the institutional environment, which facilitates the creation of associations the author suggests lead to a relationship of reciprocity between civil society groups and the state for building social capital. Huntoon (2001) takes a similar perspective about the relationship between the state and civil society groups.

A number of examples exist in the literature of the state working with organizations from different sectors to build social capital. Varda (2010) explored three case studies of a public program funded by the state and delivered through civil society groups and found that the program built bridging social capital and created diverse networks. She also found that trust was key in the evolution of the network as the choice of partner was determined by who one can trust rather than how influential or central that organization may be. The author also notes that 'state-synergy' initiatives are successful when participants are regarded as partners and not clients. Similarly, Schneider et al. (1997:91) argue that market-based government policies, which see citizens as consumers, can also build social capital in the community. Taking the example of choice of schools, the authors find that having choice encourages greater involvement of parents in the school, thus building a more generally "responsible, involved citizen".

Finally, John and Chathukulam (2002:1947) describe the role of the Indian state, Kerala, in initiating a series of institutions and initiatives for participatory planning. Initiatives included beneficiary committees, neighborhood groups and a poverty alleviation program for women. The authors find the outcome has been to increase "associational life" but they are not clear as to whether this will survive without the support of the government given the initiatives were set up as part of formal planning processes. Citing Calhoun (John & Chathukulam 2002:1947), the authors' state: "It is doubtful that mobilisation from above will sustain civil society. While, it may be necessary as a catalyst, its persistence can

act as a fetter on the unfolding of civil life, for ultimately, civil society stands for the "capacity of a society to organise itself without being organised by the state".

Scenario planning

For scenario planning, key themes within the literature are: i) incorporating multiple perspectives in scenario planning; ii) how scenario planning can balance groupthink and fragmentation; and iii) the role of political and institutional factors in scenario planning.

Incorporating multiple perspectives in scenario planning. Morgan suggests that the inevitability of differing interests means they can serve a useful purpose in providing a range of viewpoints. Rosell (2004) thus sees a role for scenario planning at the front end of the governance process to address the multiple perspectives and aspirations of the public. Similarly, Neff (2007:219) outlines how scenario planning can be effective in engaging diverse stakeholders "in disputes over socio-ecological system management", with the storylines helping build understanding around key issues. Arvidsson (2008) argues that the use of scenarios as part of a future-orientated stakeholder approach can create more democratic, broad and effective governance processes for systems in turbulence. Street (1997) talks of scenario workshops as a way of increasing public participation in state-convened urban sustainability planning, given shortcomings in the expert planning approach that does not incorporate social dimensions. Finally, Ogilvy and Smith (2004:72) compare differences doing scenario planning in the private as compared to the public sector and find that, in the public arena, more attention must be given to the varying constituencies. All constituencies must see their "fingerprints" on the outcomes of the project if they are to be regarded as legitimate.

How scenario planning balances groupthink and fragmentation. Scenario planning has been proposed as a way of balancing tendencies towards groupthink and fragmentation (van der Heijden 2000). Groupthink is the suppression of dissenting views and a tendency for group members to concur with views perceived to be favored by the group as a whole (Wright et al. 2004). This is particularly a risk for very cohesive groups such as management teams. On the other hand, where there is dissent and it is not able to be expressed because of groupthink, it finds its way out informally as conflict and can lead to fragmentation within the group (Wright et al. 2004). The scenario process is said to achieve a balance between groupthink and fragmentation by providing a forum for multiple viewpoints to be expressed and explored (Wright, et al. 2004), not forcing people to defend positions (Brummell 2004), and building understanding over time that can result in buy-in (Ogilvy 2002). Scenario planning thus assists effective strategic decision makers, says Eisenhardt (1999:68), to not only tolerate but "accelerate conflict". She sees conflict as essential for questioning assumptions, creating a fuller understanding of options, harnessing different perspectives and stimulating more innovative thinking. Scenario planning accelerates conflict by acting as a "frame breaking" tactic where scenarios are used to stimulate conversations about options given various future states.

The role of political and institutional factors in scenario planning. A final group of material within this metaphor draws attention to the challenges of undertaking scenario planning in political contexts. Analyzing the scenario planning carried out in New Zealand by the Ministry of Research, Science and Technology, Wallace (2007:26) finds scenario building within the national government context to be "too ambitious, too socially unitary, and too implicitly long-term to be really useful". He proposes instead to focus on creating alternative images of national identity. Selin (2006:6) draws attention to how the content of scenarios is not neutral, but reflects dominant institutional power bases. She writes that:

"Despite the aim to create objective or equally plausible scenarios, specific future worlds are sketched out and in the end scenarios are always selective and political". She argues that some voices can be silenced in scenarios and that readers' need to think through whose interests are being promoted and whose are being discounted. Flowers (as quoted in Davis-Floyd 1998:143) also provides an example of how the creation of scenarios is not neutral but embedded within existing interests. In response to a question about whether she was lobbied by various interests when writing Shell's scenarios, she responded: "Oh, I got lobbied all over. Because the way you tell the story influences the way people think about the future. So if you say coal will not do so well because it pollutes, the coal people all over the world will get upset. So every sentence I wrote was faxed around the world to these different interested parties, you know". Thus, Volkery and Ribeiro (2009) call for great care to be taken of political and institutional factors to ensure effectiveness in scenario planning.

Some writers refer to how the institutional context can make scenario planning divisive. Carillo (2004), reflecting on his experience doing scenario planning in Mexico, believes that when organizations are looking at renewal, scenario exercises can be divisive because the internal grounding – values and core beliefs – are unstable (highly contested) and the scenarios can add to this. He advocates that it in this situation it is better for organizations to start by understanding themselves first – their values, beliefs, etc. – and then undertake scenario planning to enable them to identify the uncertainties that will get in the way of being able to define better futures. Sussman (2004) highlights the danger of scenario projects not being inclusive. He advocates for a wide variety of people to participate, arguing that if the process is not participatory it will fail. Similarly, having pre-conceived views of the outcome (to bolster a particular position) is also dangerous as it limits the outcomes and puts some people off-side. Elahi (2008) argues a similar point that

without fairness (and the role it plays in the creation of trust) being an explicit concern of scenario practitioners, the outcomes of the scenario planning and the ability to form common ground to address turbulence can be adversely affected.

EXPLORING PLATO'S CAVE: ORGANIZATIONS AND ORGANIZING AS PSYCHIC PRISONS

Conceiving of organizations and organizing as psychic prisons, attention is drawn to how peoples beliefs, ideas and "unconscious concerns" trap them into certain ways of seeing and acting (Morgan 1986).

Building social capital

Within the building social capital literature, key themes are: i) the role of collective identity in building social capital; and ii) building social capital to bring about intentional change.

The role of collective identity in building social capital. Kramer (2006; 2009) draws on social identity theory (Tajfel & Turner 1985) to argue that the creation of a collective (as compared to an individual or group) identity is what builds social capital. According to Ashforth and Johnson (2001), identities are activated by a range of salient factors that are specific to a certain situation and time (e.g. an organization's mission, logos, etc.). Many empirical studies, says Kramer (2009:243), "show that collective identification facilitates individuals' willingness to invest in collective level-outcomes".

Also exploring collective identity, Minkoff (1997:608) challenges Putnam's argument that civil society is in decline in the US. She focuses on the rise of national social "movement-orientated organizations" (examples can be found in the gay and lesbian, women's, peace, and civil rights areas), which she says Putnam does not consider

to be community associations and thus not able to build social capital. On the contrary, the author (Minkoff 1997:606) finds these movements reflect "a significant change in how collective identities are constructed and collective action is implemented". Such movements are based on identities that transcend local or particularistic boundaries. She goes on to say that they "play a critical role in civil society and in the production of social capital by providing an infrastructure for collective action, facilitating the development of mediated collective identities that link otherwise marginalized members of society".

The work of Wollebaek and Selle (2002) and Axelrod et al. (2002) suggests that networks or organizations without face-to-face contact, but with a disbursed, relatively stable membership may provide sufficient cues for creating a collective identity and social capital similar to what Kramer (2006; 2009) describes above. Wollebaek and Selle (2002:35) challenge Putnam's belief that face-to-face contact is necessary for building social capital. The authors find, on the contrary, that passive membership (paying dues, providing strength in numbers) can build social capital through creating "imagined communities" that link people in groups of interest and identity, while providing an institutional link to political institutions (Anderson as quoted in Wollebaek & Selle 2002). Axelrod et al. (2002:345), also responding to Putnam's belief that face-to-face contact is needed to build social capital, finds that cooperation does not rely on close geographic contact. So long as the distant interactions occur in networks that are "persistent rather than transient", cooperation emerges just as strongly, enabling social capital to "flourish". Thus, persistent networks can substitute for face-to-face contact and provide a collective identity that facilitates social capital.

Building social capital to bring about intentional change. Another piece of literature found within this metaphor describes how people can intentionally build new social capital to support changes in behavior. Smith (2006) describes how individual intentional change

processes always occur within a network of trusting and supportive relationships, which means that intentional changes processes can build social capital. Adapting a model by Boyatzis, Smith outlines five steps: 1) identifying the desired network structure and social capital; 2) comparing it with what a person currently has; 3) creating an agenda about what is needed to create this new social capital; 4) experimenting with activities and behaviors to create it; and 5) drawing on core existing relationships to achieve its building.

Scenario planning

Within the scenario-planning literature, key themes are: i) the ability of scenario planning to challenge mental models; ii) to bring about a re-perception of the situation; and iii) how emotions and defense mechanisms affect the work.

Scenario planning challenging mental models. The Corporate Strategy Board (1999) argues that scenario planning's most useful application is the challenging and 'shifting' of decision makers' assumptions – and not decision making as is commonly cited in the literature. Chermack (2003b:25) describes scenario planning "as a tool for provoking and providing alternative mental models in such a way that they can be shared and re-constructed", while Saliba (2009:125) speaks of scenario planning as essentially "a means to 'perturb' the unconscious mind". Judge (2009:129) argues that it is a fallacy that "better information" will necessarily lead to agreement about the best way forward. Rather, attention should be put on cognitive and behavioral processes to achieve this. MacKay and McKiernan (2004; 2006) argue that analogies of the past also lock groups into certain ways of thinking and propose counterfactual reasoning as a solution.

Wright and Goodwin (1999:311) recommend that scenario planning be 'standard' procedure prior to conventional decision analysis because of the capacity of the methods to "challenge individual and organizational worldviews". Lang and Allen (2008) show how

the application of soft systems methodology to scenario planning foregrounds the worldviews of the participants so that they can be engaged. Warren (1995) describes the value of cognitive mapping as a technique to assemble the unique perspectives of individuals and for creating a shared cognitive map. Roubelat (2000:99) shows how scenario planning creates networks that can challenge the "representations provided by the various actors who make up the company and its environment".

Scenario planning bringing about a re-perception of the situation. This focus on challenging mental models has led authors such as Wack (1985a:150) to argue that the main rationale of scenario planning should be a conceptual reframing of the strategic situation. Calling it the 'gentle art of re-perception', Wack stated that: "Scenarios give managers something very precious; the ability to reperceive reality". For him, the art of re-perception is about acute perception, intellectual rigor (cited in Tibbs 1998) and deep and long immersion in the subject (cited in Kleiner 2003). Selin (2007) questions whether the modern scenario practice that develops scenarios in isolation without engaging decision makers' views about the environment can really enable this sort of re-perception.

To bring about re-perception, Wright and Rowe (2011:1) find that "a change of opinion following group-based deliberation [such as scenario planning] is most likely to be *appropriate* where the group membership is heterogeneous, the minority opinion is protected from pressure to conform, information exchange between group members has been facilitated, and the recipient of the advice is able – by reasoning processes – to evaluate the reasoning justifying the proffered advice". The authors also highlight the role of trust in relation to "proffered advice", where the advice is not likely to be accepted if the advisor is not trusted. They find that the outcomes of a group-based deliberation are most likely to be accepted when the process is deemed procedurally fair and the participants can be trusted. Frittaion et al. (2011:428) explored what affects scenario planning participants'

ability to suspend disbelief. They find that "participants struggled with the suspension of disbelief due to their experiences, preferences and assessments of likelihood, as well as dynamics within the breakout group sessions". The authors cite trust as absolutely key in providing the space for people to suspend disbelief. Wright and Cairns (2011) suggest a wider consideration of stakeholders in all aspects of scenario planning so as to encourage multiple ways of seeing. Finally, Roubelat (2006) draws an analogy between strategic paradigms and Kuhn's scientific paradigms to argue that re-perception comes about when an anomaly occurs in the strategic situation that cannot be understood or addressed within the existing paradigm of shared beliefs. Scenarios play the role of raising these anomalies, thus potentially shifting the strategic paradigm of the organization.

Despite the attention in the literature to scenario planning bringing about re-perception, Wilkinson and Ramirez (2010) question whether this is really how scenarios are being used. Reviewing the use of scenarios in the context of the 2007-2010 financial crisis, they call for clarification of the purpose and role of scenarios, harking back to the key role of scenarios being to question assumptions. Based on what is plausible – not probable – they see scenarios as framing and reframing devices. Plausibility refers to robustness of causal logics in the scenario and the set of scenarios, while probability is an assessment of what will most likely happen. Scenarios play the role of questioning probability models, interrogating the assumptions on which models are built. Walton (2008:161) similarly argues that the epistemological and ontological challenges of dealing with knowledge related to the future means that "plausible belief" rather than "true justified belief" should guide an evaluation of scenarios. Wilkinson and Eidinow (2008) also encourage consideration of epistemologies, given the way in which something is approached shapes what is seen (Morgan 1983) – and can be re-perceived. They offer a three-fold typology: problem focused; actor focused; and reflexive interventionist/multi-

agent based: “Where the first two processes are intended to help those involved anticipate and respond to future changes in their environments, the aim of this third approach is not responsive but creative... It is not a question of more maps, or more accurate mapping, but of the requisite variety in the set of maps and their plausibility to a range of worldviews that matters most”.

How emotions and defense mechanisms affect scenario planning. In terms of unconscious concerns in scenario planning, this metaphor particularly draws our attention to how emotions and psychological defense mechanisms can impede thinking about the future. For example, Wright et al. (2008) show how negative emotions can limit decision makers’ ability to engage robustly with issues. Similarly, O’Keefe and Wright (2010:39) find that “inertia in strategic decision making can be extreme – more extreme than the extant literature has recognized... Successful leaders, and perhaps scenario practitioners, need to be able to gauge how far to cognitively and emotionally challenge individuals in the process of enabling vigilant decision making”. Finally, Cunha et al. (2006:950) argue that a key tension in scenario planning for participants is between needing to know how the future might unfold and fearing that this may not be in line with current modes of thinking. If participants are fearful, this can result in them looking for “expectancy confirming evidence rather than dissonant, disconfirming information”.

To handle the emotions related to scenario planning, Chia (2004:36) speaks of the importance of organizations developing a capacity for “negative capability” (the tolerance of ambiguity) so as to avoid premature closure when exploring possibilities. Scenarios can also serve as what Winnicott (as cited in Burt 2003:384) called a “transitional object” or representations of the real world. Burt (2003:384) says transitional objects can be particularly helpful in facilitating “movement from the old world to the new world (Rose, 1978; Burt, 2001)”. Finally, Schwarz (2007:15) draws on psychiatry to claim that scenario

planning is a way to treat 'mental disorders' within organizations: "Time distortions in psychiatric illness can cloud the personal future of an individual and distort the view of the future and thereby disrupt goal-directed behavior. The claim of future-oriented psychotherapy is that in order to treat mental disorders, the future needs to be brought under self-control; this process is futuring".

UNFOLDING LOGICS OF CHANGE: ORGANIZATION AND ORGANIZING AS FLUX AND TRANSFORMATION

Conceiving of organizations and organizing as flux and transformation, attention is drawn to how the "logics of change" shape social life (Morgan 1986).

Building social capital

For building social capital, the focus in the literature is on: i) how social capital enables actors to deal with change; and ii) the role of building social capital for innovation.

How social capital enables actors to deal with change. Lyons and Snoxell (2005:1079) analyze the social capital that is created by street traders in Nairobi who are not fully recognized by the government. Traders build social capital "to mitigate negative trends and shocks and take advantage of opportunities". Two interesting findings emerge from their research. First, the authors find that the two by-product views of how social capital is created – Coleman's view that it emerges as a by-product of organizing that people pursue out of rational self-interest and Putnam's view that it emerges as a by-product of associations – are not sufficient for explaining the "complex motivations" behind the formation of social capital among street traders. They suggest, therefore, that a "more integrative model for social capital formation" is required (Lyons and Snoxell 2005:1093). Second, there are gender differences to building social capital, particularly with regard to trust. They find that women "depend more on mutual personal knowledge, while men

depend more on contracts (not necessarily written) to establish similar criteria of trustworthiness" (Lyons & Snoxell 2005:1095).

Building social capital for innovation. Other authors within this metaphor explore the role of building social capital for innovation. Audretsch et al. (2011:153) researched the outcomes of a two-day workshop hosted by Stanford University aimed at building social capital between inventers, potential entrepreneurs and venture capitalists in Silicon Valley to advance commercialization in medical devices. Referring to the workshop as an "innovation accelerator", they found that the workshop did further commercialization "synergies" between participants – but essentially for those entrepreneurs who already knew some investors but did not have a formal relationship with them. Such forums thus provide the venue for relationships to formalize.

Bowey and Easton (2007:273) found that entrepreneurs engage in five activities to build social capital: "reciprocal trading of favours, socializing, joint problem-solving, delivering to expectation and using transparent communications". They also found a number of driving forces or reasons for entrepreneurs to invest in building social capital. These included a need to access resources, the ideology of the entrepreneur (including their views about trust, business values, etc., which influenced social behavior), and the compatibility of interests among the actors.

Scenario planning

For scenario planning, key themes in the literature are: i) how the theory of autopoiesis challenges the way scenario planning is conducted; ii) the role of scenarios in understanding deep systemic change; iii) the contribution of scenario planning to innovation; and iv) incorporating discontinuities into scenario planning.

Autopoiesis challenging the way scenario planning is conducted. The theory of autopoiesis challenges the view that systems evolve in relation to changes in the environment (Morgan 2006:403). Instead, change occurs because systems are self-referential in that "they look at themselves and regulate their functioning through a process analogous to thought". The environment is not seen as 'something out there' but rather as an extension of the system and more particularly as an extension of the way the system conceptualizes itself (as a result of its identity, interests and concerns). An example of the challenge of autopoiesis is provided by Claus (2007), who shows that the traditional music companies such as Universal did not successfully anticipate the impact of digital providers such as iTunes because the identity of these companies was defined as 'selling CDs' rather than 'providing home entertainment'. Eyakuze (2004) describes another example in the case of scenarios developed for Tanzania. He describes how when the scenario builders focused on the future Tanzanians might face, they found themselves focusing on issues of identity and what these would mean for their future. Jacobs and Statler (2006:77) propose the theoretical perspective of "serious play" as a useful way for developing scenarios in this context. Play finds notions of "insider" and "outsider" problematic (Winnicott as cited in Jacobs & Statler 2006:89). The value of play is that it makes explicit the inter-connection between assumptions about identity and context.

The role of scenario planning in understanding deep systemic change. This metaphor also draws attention to understanding the deep systemic patterns which organizations are a part of. Courtney (2001; 2003) argues there are three types of uncertainty, ranging from a discrete set of possible outcomes where one will come to pass, to a range of bounded futures where it is not clear how it will unfold, to complete ambiguity where the uncertainties are unknowable. It is the second level of uncertainty that scenario planning focuses on. Wack (1985b:77) argued that a primary aim of scenario planning was to

explore these uncertainties to identify "pre-determined elements" or "those events that have already occurred or (that almost most certainly will occur) but whose consequences have not yet unfolded". Thus, for Wack, planning could be based on more certainty. Schwartz (2003) refers to pre-determined elements as inevitable surprises.

Burt (2006:833; 2008), seeking to provide further explanation about pre-determined elements, argues that "predetermined forces manifest in the form of conditions that enable one organisation to exert its influence onto another organisation(s), such that, nonrecognition and continued business-as-usual activity would lock-in such non-recognising organisations to a pre-ordained destiny". In understanding pre-determined elements, systems dynamics techniques are often used (e.g. Schriefer & Sales 2006). Systemic analysis is a move away from simple cause and effect to working with negative (balancing) and positive (reinforcing) feedback loops to understand where patterns of lock-in in a system might exist. In a later article, Burt (2010:1483) extends the idea that pre-determined elements are discovered through systems analysis and goes on to describe a "social process to develop a coherent and shared understanding". Reflecting on a scenario planning case study, he shows how developing scenarios provided a way of exploring what had happened that enabled the participants to see the pre-determined changes and re-perceive the situation.

Other writers argue that pre-determined elements and deep systemic patterns can only be viewed over relatively long timeframes that stretch well back into the past and forward into the future. For example, Schwartz (1992) says that attempts to understand the future often fail because the assumptions they are based on about the present and the past cannot be justified. Similarly, List (2004) says that scenarios should not start in the present but in the past so that the main system dynamics can be better understood. Wack (1984)

argued that scenarios were best developed by going sufficiently far enough back in the past to provide a shared understanding of the data and key events.

The contribution of scenario planning to innovation. There is also a grouping of literature within this metaphor about the role scenarios play in innovation. Wilson (2004) suggests the combined use of scenarios, scanning and monitoring for technology forecasting, while Piirainen et al. (2010) find scenarios to be effective for addressing uncertainty in the front end of the innovation process. Strauss and Radnor (2004) and Lizaso and Reger (2004) suggest the use of roadmapping and scenarios to assist with developing and deploying technologies. Similarly, Drew (2006) shows how technology roadmapping and creative group analysis can be combined with scenario planning to identify potentially disruptive technologies, while Saritas and Aylen (2010) call for using scenarios and roadmapping to address uncertainty about competing technologies in developing breakthroughs in sustainable metal processing (clean production). Noori and Chen (2003) also show how to use scenarios as part of the process for developing breakthrough products with environmental attributes. Saul (2002) describes a case study of a company in the insurance industry using scenarios, causal layered analysis and backcasting to generate 40 new 'revolutionary' products. Krause (2002:480) shows how the application of scenario planning was introduced successfully to a high-tech space-based organization to get a longer term strategic perspective on advanced research and development investments. The scenario planning enabled a shift from focusing on the technology – "the next big thing" – to focusing on situations "where technology might need to be developed or conceived differently to solve unfamiliar problems". Verloop (2007:77) differentiates between "inside the box" and "outside the box" innovation, arguing that scenarios play an important role in understanding potential disruptive change in the business environment and making an assessment of how and if an organization

wants to "play the new game". Sarpong and Maclean (2011:7) set out to describe the causal link between scenario planning and innovation. They focus on scenario thinking as a social practice "whose routines and activities are enacted on an everyday basis, sometimes with very little reflection, from an unintended action to an unintended outcome in the moment".

Incorporating discontinuities in scenario planning. The scenario literature also focuses on how scenarios can incorporate discontinuities, which Burt (2007:2) defines as "'a lack of continuity or cohesion' with past experience, bringing about a new order over time". Burt proposes system analysis combined with Christensen's three bases of disruption for enhancing scenario practice to address discontinuities. Selsky and McCann (2008:172) speak of three types of disruptions – operational, competitive and contextual. They argue that contextual disruptions (crises, surprises, disasters) should be "the area of greatest concern to managers operating in volatile industries today". They suggest that scenarios are a useful approach for organizations facing these potential disruptions as they help them improvise in the context of continuous change.

Goodwin and Wright (2010) find that no forecasting methods are able to anticipate rare, high-impact events. They propose that scenario planning, as a non-forecasting method, combined with the Delphi method, dialectical inquiry and components of devil's advocacy, can enhance the anticipation of such events. Postma and Liebl (2005) question the strong criteria of causality in scenario practice, arguing that in very turbulent environments forcing deliberate inconsistencies through counter trends and wildcards may be more useful. Grossman (2007) says the challenge scenarios have in relation to discontinuities is the tension between including such breaks and avoiding arbitrary futures. Banuls and Turoff (2011) develop a method for developing scenarios drawing on cross-impact analysis to better understand the inter-relatedness of events. Furthermore, van

Notten et al. (2005) show that scenarios can address discontinuities by either deliberately starting with a discontinuous event, having the discontinuity as the centerpiece of the scenario, or using the concept of bifurcations to develop mini scenarios that sit outside the main ones.

THE UGLY FACE: ORGANIZATIONS AND ORGANIZING AS INSTRUMENTS OF DOMINATION

Conceiving of organizations and organizing as instruments of domination, attention is drawn to exploitative behavior (Morgan 1986).

Building social capital

For building social capital, key themes in the literature are: i) the impact of authoritarian rule on building social capital; and ii) the concern that issues of gender, politics, race and class are ignored in building social capital.

The impact of authoritarian rule on building social capital. Babajanian (2008:1312) critiques the bottom-up community-driven development models (such as Putnam's work) with their assumption that social capital increases participation in associations, finding it not to be the case in post-Soviet Armenia. Finding abundant levels of social capital among people, the author finds that this does not translate into increased participation in community initiatives because "negative experiences of dealing with state institutions have produced distrust of people in the possibility of achieving beneficial outcomes through democratic forms of participation and collective action". Thus, the author argues that social capital is more relevant for the designing of institutions and mechanisms than for understanding participation across groups. Abom (2004:342) finds a similar problem in Guatemala: "long-standing fears related to violence and corruption within a historically

top-down authoritarian state were the most significant factors impeding social capital". What the author also found to extenuate this situation is international non-government organizations (INGOs) that fostered dependency through intervening in a way that did not encourage local participation. To build social capital in Guatemala, says Abom, means supporting locally based organizing, as well as encouraging local participation among INGOs.

To create social capital in civil society under authoritarian regimes, Fox (1996:1090) outlines three building blocks and a framework. The building blocks are: "political opportunities; social energy and ideas, and the process of 'scaling up' local representation and bargaining power". Political opportunities refers to reformist officials providing incentives that facilitate collective action from below; social energy refers to taking into account what motivates people to participate in collective action; and scaling up means strengthening and expanding reformist organizations so they move beyond being small, locally based and thus vulnerable. The framework he describes for building social capital under authoritarian regimes involves "cumulative cycles of conflict as well as cooperation" (Fox 1996:1092). It begins with reformists who, "defined by their greater concern for political legitimacy and resulting preference for negotiation over coercion", conflict with hard-liners. This conflict opens a space in the system that civil society groups can take advantage of, "demanding broader access to the state while trying to defend their capacity to articulate their own interests autonomously". The response is often a backlash from the authorities which closes the space again. Over time, "these recursive cycles of bargaining between ruling hard-liners, reformist elites, and societal groups can gradually increase official tolerance for autonomous social organizations, often in a 'two steps forward, one step back' pattern". The author concludes by arguing that the key element for social capital building through these cycles is how much "societal political residue –

whether organized or informal – is left after each window of opportunity closes, and how it can be sustained until the next one opens". This is a very different model of social capital building to that outlined by Putnam.

Concern that issues of gender, politics, race and class are ignored in building social capital. A major grouping of material within this metaphor reflects a concern that building social capital ignores and in fact reinforces power, gender and structural inequalities. Coole (2009:180) argues that attempts to build social capital through public policy are a subtle form of power exercised as state managerialism. The need to build social capital is said to derive from "the social consequences of deregulated markets" and "the effects of demographic mobility on ethnocultural diversity". While not denying there are benefits of focusing on activities to build social capital through public policy, the author warns that the enthusiasm to build social capital should be tempered with more critical regard as to the power these policies wield over people's lives. Similarly, Fahey (2003) argues that government policies in Australia to increase volunteerism and social capital are based more on ideology than evidence and that, without further understanding the connection, there is the risk that the policies will do more harm than good.

Mayoux (2001:425) draws attention to how gender inequalities are often ignored in assumptions made about the formation of microfinance groups and how they will build social capital and increase women's emancipation. She says that these assumptions are based on a "narrow understanding of the concept of social capital focusing on horizontal norms, networks and associations assumed to generate trust and information... This preoccupation ignores other dimensions [such as] rules and norms, vertical linkages and the macro-level environment". To truly build social capital, the author argues that the focus needs to not only be on enhancing existing networks, but addressing norms and rules that perpetuate inequities. Timberlake (2005:43) similarly argues that building and using

social capital has gendered dimensions that contribute to organizational inequality. Factors such as "gender stereotypes, conferred legitimacy and status, the attraction of homogeneity, structural position and membership in social networks" all favour the building of social capital by men rather than women in organizations.

Cleaver (2005:904) provides an excellent argument about how social capital building initiatives struggle with the extreme disadvantage of the very poor, stating that "without specific attention to linking the social with the political, to the need to transform institutional arrangements, and to challenge systemic sources of power, social capital remains weak as a policy tool". Cleaver argues that the literature describes social capital as being built – particularly from the rational actor perspective – by individuals exercising agency in their best interests. This agency is dependent upon certain advantages and strengths such as "able-bodiedness... room for maneuver within social relationships; and... ability to represent their interests in fora accessible at low cost", which the author finds are absent among the extremely poor and disadvantaged. This leaves social capital as a "conditional resource" (Thomas et al. 2010:31).

Skinner et al. (2008:268) make a similar point in discussing the role sports programs have in building social capital in disadvantaged communities: "Disadvantaged people/communities have been notoriously difficult to engage partly because policy-makers and sport managers often hold an expectation that 'they should come to us' as we have the expertise, but more often it is because these persons do not have the economic ability to participate". Thus, where the programs are most successful is when the aim of reaching out into very disadvantaged communities for social reasons is foregrounded and the sport becomes the vehicle. Burnett (2006) also looks at social capital building through sport and recreation clubs in impoverished communities in South Africa, finding they build

social capital through the improved functioning of networks and the empowerment of individuals.

Vajja and White (2008:1145) explore the impact of World Bank social fund activities for building social capital. The authors find that "social funds do little to build social capital but instead, appear to be users of existing social capital". Social funds are provided directly to communities (typically by-passing the state) to support projects aimed at the needs of poor and vulnerable communities. Ideally, community participation involves community members meeting to decide on a project they wish to get support for, then forming a committee to administer the funds and execute the project. What the authors find in practice is this process draws on existing social structures in communities which reflect existing power and social relations. Thus, they argue "social funds are primarily consumers rather than producers of social capital" (Vajja & White 2008:1165). A key reason for this is that the time, effort and motivation to conceptualize a project, apply for funding and to execute it rely on those individuals with the necessary time and resources.

Weisinger and Salipante (2005:30) tackle the problem that, while associational activities do build social capital across diverse groups, much of this activity in reality is "exclusionary". Looking at ethnic diversity within voluntary organizations – the Girl Scouts – they find that building bridging social capital – bridges between ethnic groups or people – is challenged by participants' "lack of shared experiences and interethnic interaction skills". This is so even when the mission of the organization encourages inclusion. According to the authors, one way of overcoming exclusion is to bring racially diverse individuals together into a group and have them participate in activities aligned with the organization's mission and values. Hays (2002:266) describes a similar phenomenon in a faith-based housing service. The author says that one of the challenges to

building social capital is for non-government organizations to realize they need to reach out in different ways to disadvantaged communities to involve them (in this case in the leadership of the organization). Thus, Pastor (2001) sees social capital as both debilitating and emancipatory. Looking at environmental hazards, he argues that the people exposed to them are the same people that lack social capital in the form of political influence to affect where facilities are cited. Coming together into larger groups – building new social capital – can improve the situation.

Hofmeyer and Marck (2008) describe safety concerns for nurses and patients within the health system, calling for a focus on building social capital to mitigate these. Social capital in this context can balance the dominance of attention given to economic capital. They call for building social capital at all levels (unit, team, organization, system), focusing on elements such as building networks, sharing information and creating a culture of trust. And in Australia, Moore et al. (2007) find that participation in voluntary conservation work builds social capital in rural communities, which may address some of the negative aspects of rural life (e.g. lower life expectancy, higher suicide rates, and a higher prevalence of cancer and heart disease).

Finally, Lappe and Du Bois (1997) call for agency to become a central aspect in building social capital and public life in the US. By focusing on agency, they highlight three social capital building 'ingredients'. The first is hope – a belief that solutions can be found; the second is an opportunity to be engaged to execute those solutions; and the third is nurturing the skills needed to participate in public life.

Waddock (2001:18) also draws attention to the role the future can play in building social capital. She argues that, because humans experience consciousness, they seek meaning in their life and they do this through building social capital, "a sense of community, of being in 'this' together'". Consequently, she suggests workplaces can

undertake two key initiatives to create social capital. First is to develop an inspiring vision that creates shared meaning and commitment among stakeholders and the second is to create an environment that honors this vision and all stakeholders, enabling them to see how they contribute to its achievement.

Scenario planning

Within the scenario planning literature, the key themes are: i) the role of ethics in the scenario process; ii) the ends to which scenario planning is put; and iii) how scenarios may overcome or abet instruments of domination.

The role of ethics in the scenario process. The first group of material in this metaphor explores ethics and values in scenario planning. Hodgkinson and Wright (2002; 2006) outline a number of actions they attribute to a CEO which contributed to the failure of a scenario project. These included not involving certain people (including board members), ridiculing the presenters, and unilaterally cutting project meetings short. Whittington (2006a; 2006b), in response to this discussion, points out the importance of scenario facilitators being able to address such issues by ensuring the design of the process takes into account cultural issues and not getting involved in clandestine discussions which exclude key decision makers.

Blanning and Reinig (1998; 2002) show how the use of Electronic Meeting Systems (EMS) can be an effective way to develop scenarios around topics that are sensitive and where it is not possible for people to openly express their ideas and opinions. EMS's provide interaction with anonymity.

The ends to which scenario planning is put. In a review of the book *The Scenario Planning Handbook*, Tucker (2007:50) states that there is no mention about the ability of scenarios "to help corporations act more ethically, responsibly, or with greater concern for

their workers, the environment or humanity". Yet he believes the work provides the perfect opportunity to discuss the worthiness of future goals.

Elkington and Trisoglio (1996) argue that Shell suffered controversies such as the attempted sinking of the Brent Spar oil rig and the execution of Saro-Wiwa in Nigeria because, despite their scenario planning, they did not anticipate or act in accordance with emerging social values. Thus, Athanopolous (2008) outlines the role corporate social responsibility scenarios can play in building common ground between an organization and its stakeholders, thereby contributing to ethical outcomes.

Finally, MacDonald (2004) notes that scenario planning with not-for-profit organizations shifts the focus of the work from survival to success – as defined by organizational values. He provides the example of the long-term aim of INGOs being to put themselves out of business. Thus, what the private sector perceives as a threat can be an opportunity for a not-for-profit organization.

How scenario planning may overcome the instruments of domination. There is also a thread in the literature about how scenarios can overcome the effects of the instruments of domination. Some writers see scenarios as making human agency relevant and important in the face of the future (Inayatullah 2009; Serra 2009). Inayatullah (2009:78) argues that "scenarios can be usefully theorized as distancing us from the present. This conceptual distance allows us to see the present or future anew... the distance can be temporal (going back and forth in time) or can be epistemological (see the issue from different ways of knowing)". Thus, scenarios are useful in creating the preferred future – where agency wins over structure. Even Chapman, back in 1976, outlined how scenarios could be liberating in terms of moving away from a deterministic view of the future to one that is in large part shaped by choice.

Chermack and Lynham (2004:42) take up the discussion of scenarios and critical theory, advocating "for the integration of these two processes to help oppressed or transitioning groups imagine a series of plausible futures that could be, should be, and ought to be". Similarly, Ogilvy (1996) argues that scenario planning overcomes the shortfalls of critical theory while also contributing to the creation of normative scenarios. Normative scenarios differ from exploratory scenarios which focus on what might be (and are most typical in scenario practice). Van der Heijden (2004b:206) expresses the difference between normative and exploratory scenarios as part of a wider contrast between a "future of desire" and a "future of fate" in scenario practice. Ogilvy (2005: 345) argues that scenarios can in fact incorporate both fate and desire. "Narratives – stories with suspense, alternative scenarios – contain this perpetual conflict between the creative art of articulating what we want on the one hand, and the science of what must be on the other. Scenario planning is the medium through which we mediate this age-old dialectic". An example of how this dialectic can be executed is provided by Shiftan et al. (2003: 323). They developed an expected and a desirable scenario, whereby "The development of both expected and desired scenarios helped to analyze the feasibility of the desired scenario and assess the likelihood of implementation of its different elements".

FINDINGS FROM THE COMPARISON OF THE TWO BODIES OF LITERATURES

In comparing and contrasting these two bodies of literature, 20 findings emerge about how scenario planning and the building of social capital are related. These are discussed below. As a result of generating these findings, four research sub-questions are identified and outlined.

Machines metaphor

Scenario planning can be a mechanism for overcoming issues of lock-in to build new social capital. The social capital literature draws attention to how, as circumstances change, an organization's configurations of social capital can shift from being an asset to a liability (Miller & Shamsie 1996). Over time, relationships can become over-embedded leading to inefficiencies and a reduction in flexibility for creating the new links needed to respond to changing circumstances (Villena et al. 2011). The review of the literature suggests that scenario planning provides a process for understanding changes ahead of time, thus enabling new social capital to be created as a form of real options (Nahapiet 2009).

How should formal and informal processes be used in scenario planning for the purpose of building new social capital? This metaphor draws attention to when formal and informal processes for building new social capital should be used. Erridge and Greer (2002) for example called for further research on when it is best to foster more informal collaborative supplier relationships that can encourage sharing of risks and access to information, and when it is better to use more formal competitive tendering processes with their rules and procedures for redress. This use of formal and informal processes also has implications for using scenario planning to build new social capital. For example, what are the consequences of choosing scenario-building teams based on informal criteria (such as 'interesting, good thinkers') as compared to working with staff occupying formal positions? And if teams based on more informal criteria are used, how do the outcomes and the social capital they produce successfully interface with formal governance processes?

Motivations for participating in scenario planning projects are likely to vary - impacting the new social capital that can be built. Material in this metaphor suggests people act rationally to build social capital (Glaeser et al. 2002), but material in later metaphors suggest people's motives are far more complex (see for example, Fukuyama 2001 in the politics metaphor). The existence of different motives in building social capital highlights actors' likely different motivations for participating in scenario planning projects. That is, the subject matter and purpose of the work, who the sponsor and facilitator are, as well as the time people have available, are likely to be important factors determining whether they get involved or not. This in turn will impact what new social capital can be built with scenario planning.

Organisms metaphor

Scenario planning can be a process for building new social capital to address turbulence. This metaphor highlights the value of using scenario planning to build new social capital to address environmental turbulence. Gardner (1996) argued that involving community members in a series of activities was vital for being able to bring about the commitment needed to create new, urgent economic development in a region. Scenario planning provides a set of activities for addressing such turbulence given its focus on engaging with uncertainties (Ramirez et al. 2010). Through the process of seeking to understand changes in the external environment, scenario planning can help actors to consider ahead of time what new social capital configurations will be needed to address the turbulence.

In the absence of formal governance mechanisms at the wider system or inter-organizational levels, scenario planning can build the necessary social capital to facilitate new action at these levels. Maak (2007) argued that a firm's success depends

on the success of the system in which it is embedded. Successfully operating within a large eco-system depends on leadership that galvanizes actors and attends to their needs (Melander & Nordqvist 2002; Maak 2007) as well as providing them with the activities for learning and working together (Hall 2006; McGrath & Sparks 2005). Melander and Nordqvist (2002) subsequently suggested that targeted network activities can build social capital in less time than Putnam indicated was necessary. At this system or inter-organizational level, scenario planning can provide a process for actors to reach out to pool their complementary knowledge (Xiang & Clarke 2003) and build commitment to facilitate collaborative action (Cairns et al. 2006; Kahane 2002; 2004).

Brains metaphor

Scenario planning can serve as a structured learning process for accelerating the building of new social capital. Learning is central to both building social capital and scenario planning. The role of learning in building social capital is discussed from multiple perspectives (e.g., communities of practice, appreciative inquiry, action learning and participatory research processes). Social capital is built through learning processes by actors engaging in meaningful activities to make sense of a situation, appreciating their mutual interests, developing a common language, and reflecting on their identities (Falk & Kilpatrick 2000; Kilpatrick et al. 1999). A prominent conceptualization of scenario planning in the literature is that it is a process for speeding up learning (de Geus 1988; 1997). Two ways scenario planning quickens learning is through shortening the traditional feedback time in the Kolb learning cycle (Bood & Postma 1997) and having the scenarios act as ‘memories of the future’ (Ingvar as cited in de Geus 1997) throughout the organization. Thus, scenario planning can be thought of as a structured and intentional learning process for accelerating the building of new social capital.

Digital technologies, utilized within scenario planning, can increase the amount of new social capital built. The role of digital technologies is important for both building social capital and undertaking scenario planning and is likely to become even more so as technologies develop and become more ubiquitous. Social capital researchers have found that information communication technologies can develop all three dimensions of social capital (Sherif et al. 2006). In particular, such technologies make the creation and maintenance of a network relatively easy and inexpensive thus offering greater opportunities to access a wider variety of resources (Mandarano et al. 2010). Similarly, the use of digital technologies in a scenario planning project can enable a greater number of actors to be reached in interesting ways (Vervoort et al. 2010) potentially increasing the amount of new social capital built.

Scenario planning can provide a learning process for overcoming cognitive biases when building new social capital. The building social capital literature reviewed here does not engage with the role of cognitive biases in learning processes. This is probably due to the general lack of attention given to the cognitive dimension of social capital (e.g., Bolino et al. 2002). On the other hand, cognitive biases impacting learning are well discussed in the scenario planning literature. Thus, scenario planning potentially provides a learning process for overcoming cognitive biases for the purpose of building new social capital. It can do so by addressing probability heuristics (Schoemaker 1991; 1993), overconfidence and anchoring biases (Bradfield 2008; Clemons 1995) while also building confidence in the face of uncertainty (Kuhn & Sniezek 1996).

Cultures metaphor

The building social capital literature highlights the likely networks and communities built through scenario planning. The social capital literature in this metaphor draws

attention to the potential of scenario planning for building new networks and communities (as explicitly raised by Galer 2004a; 2004b). Yet there is little research and theoretical discussion in the literature about how this is done (van der Heijden's (2005)) work on strategic conversations is an exception) and what relationships and communities are formed as a result. Addressing this gap is important because scenario planning is usually carried out as a project and the success of its outcomes are likely to be enhanced by the formation of a new network of relationships that can carry the outcomes forward.

Cultural and institutional factors need to be attended to, to successfully conduct scenario planning for the purpose of building new social capital. Both bodies of literature point to the importance of attending to cultural and institutional factors. In social capital building for example, formal and informal arrangements in organizations can lead to the exclusion of certain actors thereby limiting the capital that can be built (Wong 2008). For scenario planning, the work is susceptible to the culture within which it is being carried out, sitting uncomfortably with mechanistic cultures that do not encourage learning (Galer & van der Heijden 1992). Thus, understanding how cultural and institutional factors reinforce current configurations of social capital and influence the way in which scenario planning is conducted is important if new social capital is to be built successfully through the work.

Aspects of the relational and structural dimensions of social capital appear to emerge as by-products of activities, while the scenario planning literature suggests the cognitive dimension can be built directly in situations where there is a premium on sensemaking. Material in this metaphor suggests that aspects of the relational (in particular trust) and structural (for example, networks) dimensions of social capital emerge more as by-products of certain activities (Ostrom & Ahn 2003) - as outlined in Dowla's

(2006) discussion of the establishment of Grameen Bank. This finding lends support to Putnam's (1993) view that social capital takes time to develop and is a by-product of other activities (also the perspective of Coleman 1988). However, the scenario planning literature in this metaphor discusses how the work facilitates interpretation and the making of new meaning in situations characterized by uncertainty – through a process Wright (2005) called prospective sensemaking. This suggests that scenario planning represents a direct investment in building cognitive social capital resources. In situations where the need for sensemaking is high, leading the building of social capital with the cognitive dimension, rather than the relational or structural dimensions, may represent a more direct and quicker way to build new social capital.

Trust in the design and execution of scenario planning projects is essential for building new social capital through the process. This metaphor highlights the importance of trust in building social capital and conducting scenario planning. The scenario planning literature highlights how if the design and execution of the work is not regarded as just and fair, it is unlikely to build social capital. Behaviors facilitating trust include: treating actors respectfully and being transparent about the process (Dowla 2006; Elahi 2008); encouraging participation (Richey 2007); attending to the reputation of the sponsor and facilitator; being consistent in actions, and, stipulating how future interactions will be undertaken (Lewicki & Brinsfield 2009). Attending to these factors can maximize the new social capital built through scenario planning projects.

Politics metaphor

Leadership is important for initiating and conducting scenario planning for the purpose of building new social capital – but it has been under-attended to in the literature. This metaphor raises the issue of leadership in building social capital and in

undertaking scenario planning. Building social capital is dependent on a set of activities (Feld 1981) which are in turn dependent on someone taking the initiative to organize them Crothers 2002; Maak 2007). For scenario planning (as a series of activities) to be conceptualized, initiated, resourced and conducted, leadership at the most senior levels of the organization is required. In addition, to build social capital, scenario planning activities must be led in such a way that emphasizes facilitation and co-production (treating other actors as partners) (Lengnick-Hall & Lengnick-Hall 2003; Maloney 2000). Such an approach encourages participation and prevents crowding out by the dominant actor (Fukuyama 2001; Warner 1999). Thus, leadership capacity and style can impact – both positively and negatively - the building of social capital (Crothers 2002). Despite the obvious importance of leadership in scenario planning projects, there is minimal scholarship engaging with this topic which the social capital literature highlights.

Scenario planning can offer a structured process for building new social capital among people with diverse interests. The need to build social capital in situations where actors' interests diverge significantly (to the point of being conflictual) is well documented in the literature (see for example Park 2010; Pickering 2006). The review of the scenario planning literature here suggests that the work can contribute a number of resources helpful for building social capital in such situations. For example, scenario planning provides a process for: overcoming fragmentation within groups (van der Heijden 2000); providing a forum for multiple viewpoints to be expressed and explored (Wright et al. 2004); not forcing people to defend positions (Brummell 2004); seeing conflict as a positive for generating alternative perspectives (Eisenhardt 1999); and, exploring different viewpoints through storytelling (Neff 2007).

Psychic prisons metaphor

Scenario planning can provide the resources to create new shared systems of meaning among a group of actors. This metaphor sheds lights on how organizations are shaped by favored modes of thinking and unconscious concerns of their constituent members (Morgan 2006). There is very little social capital building literature in this metaphor (the discussion of the role of collective identities in building social capital being the exception). This gap suggests that scenario planning can shed further light on how social capital can be built. That is, by providing actors with the resources to challenge mental models and bring about a re-perception of the strategic situation (Wack 1985a) as well as allay negative emotions and defense mechanisms (Burt 2003), scenario planning can create new systems of meaning about the emerging strategic situation. The creation of such systems foregrounds the cognitive dimension of social capital suggesting its value for leading the building of social capital in situations where a reframing of the situation is needed.

Scenario planning can be used to explore and activate collective identities to build new social capital. The role of collective identities in building social capital foregrounds the importance of collective identity formation – a theme largely ignored in the scenario planning literature, which the social capital literature contributes. Collective identities can be activated by factors salient to a time and place (such as a sporting event; an organization's logo; etc.) (Ashforth & Johnson 2001). This cueing of identities facilitates actors' investments in collective level actions (Kramer 2009). In this light, scenario planning can be seen as a process for enabling actors to explore alternative identities that might be needed in the future and for creating collective identities that can facilitate new action.

Flux and transformation metaphor

Scenario planning can help organizations adapt their social capital over time as strategic circumstances change. There is very little literature discussing the building of social capital in this metaphor, seemingly confirming Maurer and Ebers (2005) statement about the dearth of research as to how organizations can configure their social capital over time. The scenario planning literature on the other hand shows that by foregrounding uncertainty and seeking to understand deep systemic patterns of change (Burt 2006; Wack 1985b; Schwartz 2003), the work can prepare actors for emerging changes. Seen in this context, scenario planning can be regarded as a proactive process for considering what new social capital configurations may be needed in the future and starting to build these through the process of developing and using the scenarios.

Scenario planning with an emphasis on building social capital could improve the innovation process. Both literatures discuss the role of social capital and scenario planning in the innovation process. Building social capital for innovation is important for access to venture capital (Audretsch et al. 2011) and other resources (Bowey & Easton 2007). While scenario planning aids the front end of the innovation process by identifying potentially disruptive technologies (Drew 2006); addressing uncertainty about competing technologies (Saritas & Aylen 2010); and getting a longer term strategic perspective on advanced research and development investments (Krause 2002). Material in this metaphor thus suggests that attending to the building of social capital with scenario planning could make a significant contribution to the innovation process.

Instruments of domination

Scenario planning can challenge power inequities thereby helping build new social capital, but it can also reinforce them without deliberate and careful attention. The

exclusion of issues of power and oppression within social capital theorizing is a significant critique Fine (2010) makes of the concept. However, within this metaphor there are pieces of literature that draw attention to the special measures needed to include the 'disadvantaged' in initiatives such as scenario planning for the purpose of building new social capital. Such measures require deliberate consideration and action by those sponsoring, designing and conducting scenario planning (Cleaver 2005; Mayoux 2001) - including attending to the surrounding messages and actions being taken if these are not compatible with the project. Without such deliberate attention, scenario planning could reinforce power inequities negatively impacting the building of new social capital.

Agency and the inspiration of the future can be harnessed through scenario planning to build new social capital. Scenarios make human agency relevant by reinforcing the view that the future is not determined but open to being understood and shaped (Chapman 1976). By focusing on the future, a space is created that is distanced both temporally and epistemologically from the present (Inayatullah 2009). In this context, scenario planning can build new social capital by bringing actors together in a way that overcomes the obstacles of the present - using the future as a visionary space.

Summary

Comparing and contrasting the two bodies of literature highlights several points of value one brings to the other. For example, from the perspective of building social capital, scenario planning could provide a process for accelerating organizational learning (de Geus 1988); facilitating re-perception (Wack 1985b); anticipating and adapting to turbulent conditions (Ramirez et al. 2008); convening diverse actors (van der Heijden 2005); and using the conceptual future as a way of reframing the present (Inayatullah 2009). Alternatively, the building social capital literature highlights the important role of

leadership in scenario planning; the different motivations actors will have for participating in scenario projects; how issues of identity are central to actors when engaging with the future; and the networks and relationships built through scenario planning (Galer 2004; Kahane 2004) – all topics under-attended to in the scenarios literature. Taken together, the findings from the literature review point to the many ways in which scenario planning can be designed and executed for the purpose of building new social capital.

Identification of research sub-questions

These 20 findings lead to the identification of four sub-questions within the overall research question of this dissertation: "How are scenario planning and the building of new social capital related in the context of addressing perceived or potential turbulence?"

The first sub-question is: "What are the different expressed purposes of scenario planning given they have different implications for understanding how the work builds new social capital?" The review of the scenario planning literature suggests that scholars and practitioners hold different – and often competing views - about the purpose of scenario planning. For example, are scenarios primarily devices for accelerating organizational learning or are they more akin to models for stress testing strategic options? Is scenario planning about improving decision making or challenging mental models? Or is it about balancing groupthink and fragmentation in management groups? All of these purposes are evident in the literature and by delineating them, the contribution of each to building new social capital can be more clearly understood.

The second sub-question is "How can organizations overcome the challenges of 'lock-in' to build new social capital in the context of potential or perceived turbulence? What role can scenario planning play?" The social capital material in the machines metaphor points to the inefficiencies and lack of flexibility that occurs as relationships

become over-embedded and locked in. Turbulence, as discussed in the organisms metaphor, shows how these issues of lock-in can become exacerbated as strategic circumstances change. While material in the flux and transformation metaphor points to the lack of research about how organizations can actually build new stocks of social capital over time to address such changes. The scenario planning literature suggests that the work may overcome issues of social capital lock-in by being an exploratory process that facilitates the reaching out to others - without any necessary commitment to action - and by providing a process to reframe the present.

The third sub-question is "How can scenario planning build – and speed up the building of - new social capital?" Some writers within the social capital literature (e.g., Melander & Nordqvist 2002; Maloney 2000; Pronyk et al. 2008) question Putnam's (1993) view that its creation is largely a bottom-up process that takes considerable time. Scholars in the cultures, politics and instruments of domination metaphors for example point to the role that cultural and institutional factors, including leadership, can play in deliberately intervening to build social capital. Similarly, those in the brains metaphor point to the important role learning can play in bringing actors together and building social capital.

The capacity for scenario planning to build new social capital is raised by practitioners such as Galer (2004a) and Kahane (2004) in the cultures and organisms metaphors respectively but has not yet been the subject of scholarly research. Scenario planning represents a top down intervention (most scenario planning is commissioned by the most senior members of the organization) that can provide a mechanism to hasten the deliberate building of new social capital. In particular, the capacity of scenario planning to facilitate and accelerate organizational learning (the brains metaphor) in the context of strategic change may provide insight into how the work can particularly speed up the building of new social capital.

The fourth sub-question is "What is the role of the cognitive dimension in building new social capital in the context of addressing perceived or potential turbulence?" The cognitive dimension of social capital has been largely under-attended to in the literature (e.g., Bolino et al. 2002) as evidenced in the lack of material on cognitive biases and mental models in the brains and psychic prisons metaphors respectively. Against this lack of attention, the focus on the relational (such as trust) and structural (networks) dimensions of social capital in the literature may explain why scholars (including Putnam) have argued that social capital building takes time and is largely a by-product of other activities. However, the importance of learning for building social capital and the relative ease by which collective identities can apparently be activated (Kramer 2009), suggests that the cognitive dimension could provide a more direct way to build new social capital in the context of addressing turbulence.

The literature also suggests that given scenario planning's focus on learning and facilitating re-perception, the work provides the resources for creating new shared systems of meaning - the cognitive dimension of social capital. Thus, researching scenario planning from the perspective of building new social capital should shed light on the role of the cognitive dimension of social capital – and the contingencies related to when leading with this dimension is likely to be most important.

Research sub-questions and the three papers

These research questions are addressed in the following three papers (chapters 3-5) and the discussion (chapter 6) - as indicated in Table I.

Table I. Research sub-questions and the papers addressing them

Research sub-questions	Paper 1 (Chapter 3)	Paper 2 (Chapter 4)	Paper 3 (Chapter 5)	Discussion (Chapter 6)
1. "What are the different expressed purposes of scenario planning given they have different implications for understanding how the work builds new social capital?"	√	-	-	√
2. "How can organizations overcome the challenges of 'lock-in' to build new social capital in the context of potential or perceived turbulence? What role can scenario planning play?"	-	√	√	√
3. "How can scenario planning build – and speed up the building of - new social capital?"	-	√	√	√
4. "What is the role of the cognitive dimension in building new social capital in the context of addressing perceived or potential turbulence?"	-	√	√	√

In the first paper (chapter three), the purposes of scenario planning are ordered and the outcomes discussed. This aim of this paper is to contribute to the further development of the scenario planning field while setting the scene in this dissertation for better understanding the different purposes of scenario planning and how they can build new social capital. The second paper (chapter four) reports on empirical research into the scenario planning initiatives of two organizations. The paper provides evidence for how scenario planning builds new social capital, overcoming issues of lock-in by using the conceptual future to reframe the present. In doing so, the importance of the cognitive

dimension of social capital is highlighted. The third paper (chapter five) delves deeper into the cognitive dimension suggesting that in the context of making sense of turbulence building new social capital is best led with this dimension. In particular, the paper challenges Putnam's (1993) and Emery and Trist's (1965) views that social capital takes decades if not centuries to create. Finally, the discussion (chapter six) brings together the insights from this literature review and the three papers to propose a model of how scenario planning is related to the building of new social capital.

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CHAPTER THREE.

THE MANY IMAGES OF SCENARIO PLANNING:

ORDERING THE SCENARIO LITERATURE USING MORGAN'S METAPHORS*

Abstract

Scenario planning was introduced to organizations over 40 years ago in response to the failure of single point, long term planning forecasts. Since that time, interest in the field has grown significantly as evidenced by a growth in the literature. However, this growth has resulted in concerns about a body of literature that is under-systemized and which risks impeding development of the field. A key element of this confusion is the existence of multiple and competing images of scenario planning that are rarely made explicit. These images are more than variations in language, reflecting different philosophical stances regarding its purpose. To surface them and help structure the field, 493 pieces of literature published between 1969 and 2009 are classified using Morgan's (1986) metaphors as outlined in his book *Images of Organization.* This paper reports on the outcomes of this structuring process. It is hoped that just as Morgan's analysis opened up a whole new line of theorizing in the general organizational literature, this ordering may start the same sort of development within the scenario literature.

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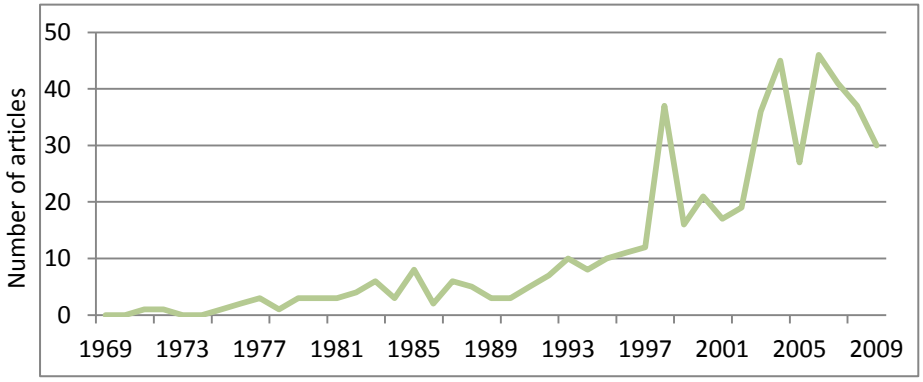
INTRODUCTION

Scenario planning was introduced to organizations over 40 years ago in response to the failure of single point, long term planning forecasts to cope with growing environmental turbulence (Wack 1985a; 1985b). Unlike forecasting, scenarios offered multiple representations of an organization's future context so managers could ask a series of 'what if' questions. Since that time, interest in the field has grown significantly as evidenced by a growth in the literature - shown in Figure I.

Figure I: Growth in the sampled scenario literature (1969 to 2009)



However, this growth has resulted in concerns about methodological confusion (Martelli 2001) and a body of literature that is under-systemized. In response, scholars have started to organize the scenario planning literature outlining different: traditions and methodologies (Bradfield et al. 2005); scenario typologies (Borjeson et al 2006; van Notten et al. 2003); lists of techniques (Bishop et al. 2007); and historical patterns (Varum & Melo 2010).

What these reviews point to, but not necessarily make explicit, is that underlying the field are many competing images of scenario planning that have not been clearly articulated – a fact bought into sharp relief during the global financial crisis. For example, are scenarios analytical devices akin to models for anticipating the future or are they well

crafted stories for making sense of situations of high uncertainty (Wilkinson & Ramirez 2010)? Are scenarios about stress testing existing strategies or are they about re-perceiving the strategic landscape? Are scenarios primarily about improving decision making or challenging mental models?

These differences are more than variations in language. They reflect different philosophical stances regarding the purpose of scenario planning. Thus, when scholars and practitioners talk about the work, they are often talking at cross purposes. While the different purposes to which scenario planning can be put reflects a richness of the field, without some overarching structure providing a context by which theses different purposes can be understood, the field risks becoming increasingly confused and vaguely defined.

The structure used in this paper to elicit and highlight these philosophical differences within scenario planning is Morgan's (1986) metaphors as outlined in his book *Images of Organization*. Morgan (1986; 2006) identified eight dominant metaphors underpinning organizational theory: *machines, organisms, brains, cultures, political systems, psychic prisons, flux and transformation, and instruments of domination.*

The research design decision to use Morgan's metaphors in this study is based on the impact his work has had on the organizational studies field (i.e., peer review). Three editions of his book, *Images of Organization* have been published over a 20 year period indicating its ongoing value theoretically and empirically. His work has been described as highly influential (Grant & Oswick 1996; Mangham 1996) and rewriting organizational theory (Schon as cited in Grant & Oswick 1996) while being used in a number of empirical endeavors (Inkson 2004; Karimalis 1996; Wilson 2000; Winter & Szczepanek 2009). In addition, his set of metaphors is comprehensive incorporating those most widely used in organizational studies (Cornelissen et al. 2005) as well as those critiquing dominant and powerful ideological positions. (The rationale for using Morgan's metaphors – as well as

critiques made of his work – is discussed further in the methods section.) Just as Morgan's analysis opened up a whole new line of theorizing in the general organizational literature, it is hoped that this ordering may start the same sort of development within the scenario literature.

The paper is divided into three sections. The first discusses the methods used in sampling and classifying the literature, including a rationale for using Morgan's set of metaphors. The second section provides an overview of the material ordered into the eight metaphors. This is done by briefly introducing the metaphor and then summarizing the scenario literature within key themes. The third section provides an explanation of the distribution pattern across the metaphors; a discussion of key tensions exposed within the field; as well as outlining directions for future scholarship and practice.

METHODS

The use of Morgan's metaphors

Metaphor is a cognitive process for making sense of complex or abstract situations (Lakoff & Johnson 1980) whereby familiar knowledge (the source or base domain) is applied to something that is new and relatively unknown (the target domain) (Grant and Oswick 1996). Lakoff (as cited in Mangham 1996) referred to the process as one of structuring whereby the source domain is used to structure the target domain. This structuring is what yields inferences and insights. These descriptions are why writers argue that metaphors are far more than a figure of speech, constituting instead a powerful cognitive mechanism for helping people make sense of new, complex or abstract situations (Lakoff & Johnson 1980; Morgan 1996).

The research design decision to use Morgan's metaphors to order the scenario planning literature is a Lockean (Churchman 1971) one. Locke argued that whether a fact

could be considered true or not depended on consensus among a group - that is, peer review. Morgan's work meets this criteria of peer review as it has been extensively engaged with by organizational studies scholars who have acknowledged his foundational and predominant influence in the area (see for example Cornelissen et al. 2008; McCourt 1997: Oswick et al. 2002; Schon as cited in Grant & Oswick 1996). In addition, given scenario planning has traditionally been a practice-led field, the fact that Morgan's metaphors provide insight into values" or "driving forces" at work in organizations (Czarniawska-Joerges 1993:25) suggests they are also ideal for understanding how scenario planning has been conceptualized not only by scholars but also practitioners.

Peer review has extended to critiques of metaphors in organizational studies and Morgan's work. There were early (1980s) concerns about metaphors not being able to provide the clarity of language necessary for advancing social science research. Authors such as Pinder and Bourgeois (1982) argued instead for literal language to be used in research to provide more precision. Morgan (1983; 1996) responded by arguing that metaphors are not just figures of speech, but cognitive devices for making sense of the world. Over time, scholars have accepted that metaphors do exist in organizational theory (Cornelissen 2005) and at the very least are "a useful analytic technique" (McCourt 1997:515).

Another critique has come from scholars concerned that metaphors can be used too easily to reinforce powerful ideological interests (Tinker 1986). That is, those with power in a situation have the capacity to propose and reinforce those metaphors that are in their best interests. This is a valid critique if the social and political context in which metaphors emerge and are used is not attended to. In this regard, Morgan's metaphors are robust being based on a wide spectrum of organizational theory and not privileging any one ideological position. As a set, each metaphor deconstructs the previous one through to the

point of radical politics *(Instruments of Domination).* The value of this comprehensiveness is seen when Morgan's metaphors are compared with the most popular ones used in organizational studies (as documented by Cornelissen et al. 2005). While there is significant overlap with these metaphors, there is no popularly used metaphor similar to *Instruments of Domination* that critiques dominant power arrangements.

More recently, critiques to Morgan's work have come from those concerned that his conceptualization of how metaphors work does not go far enough to understand their role in generating new insights. Some scholars call instead for the use of irony which highlights differences (rather than similarities) between the source and target domains (Oswick et al. 2002:301). However, these same authors acknowledge that metaphor does play a role in helping "focus, crystallize, and better understand existing perspectives, theories and paradigms". Given the focus of this paper on ordering an existing body of literature, the use of Morgan's metaphors would still seem beneficial.

Of these critiques, Oswick and Grant (1996:214) argue that "their common feature is their failure to leave more than a few minor battle scars …". Consequently, Morgan is still regarded as "largely responsible for the prominence which metaphoric thinking has attained in organization studies" (McCourt 1997:520). Given the influence and level of engagement with Morgan's work, a Lockean inquiring system (Churchman 1971) choice based on peer review, seems justified for this study.

Definition of scenario planning

There is no clearly agreed upon definition of scenario planning in the literature, therefore I draw on the one provided by van der Heijden (1996; 2005) whose book, *Scenarios: The art of strategic conversation* is regarded as a definitive work in the field.

Van der Heijden referred to scenario planning as a tool, both in the process and content sense, for addressing the inherent uncertainty of the future and creating adaptable organizations. By 'process', he meant a method that can enable an organization to undertake research and discuss that research and its implications in a "strategic conversation". Taking a resource based view of strategy (Barney 1991; Teece 1986; Wernerfelt 1984) he believed that the success of any organization depended on the unique insights and inventions it can generate to set it apart from others and that scenario planning must help with this. In a passage of the book, van der Heijden (2005:49) summed up this conceptualization of scenario planning as follows:

> Scenario-based planning makes sense of the situation by looking at multiple futures, which are treated as equally plausible, reflecting the inherent uncertainty in the situation, but also what is considered predictable. It is non-prescriptive. It recognizes that successful competitive strategies must be original inventions made by organizations. It therefore employs processes that enhance the capability of the organization to mobilize resources towards greater inventiveness and innovation.

Sampling strategy

Literature was collected for this classification using Hart's (2001) notions of trawling (broad based searching) and mining (focusing in on relevant material gathered in the trawling stage). This literature was sourced from university libraries (electronic databases and books) as well as personal collections.

Four criteria were used to select the pieces. First, they had to have the words scenario or scenarios in their titles, abstracts or keywords and have as their primary focus a discussion of scenario planning – as compared to using scenarios to investigate an issue. Second, the type of scenario planning being discussed had to broadly fit the description of scenario planning defined by van der Heijden, that is, fall within the intuitive logics tradition (Bradfield et al. 2005) of scenario planning. Third, the pieces had to be published

in English (acknowledging that there are bodies of scenario literature written in other languages). Fourth, no filtering mechanisms (such as the most cited articles or books) were applied when gathering the pieces. The reason for this was to undertake this exploratory analysis with as much of the literature as possible. Using this study as a baseline, I anticipate future studies will hone in on certain elements of the literature - such as the most cited.

As a result of this sampling strategy, 493 pieces of scenario planning literature published between 1969 and 2009 were gathered.

Ordering the material

The pieces of literature were classified into Morgan's eight metaphors using the following steps.

1. I closely studied the metaphors in Morgan's book *Images of Organization*, creating a table of the key characteristics of each (see Table I) so that I could make an informed judgement about which pieces of literature should be classified into which metaphor.

Table I. Key characteristics of Morgan's (1986) metaphors

Metaphor	Key characteristics
Machines	Efficiency Objectives Performance Structure
Organisms	Co-evolution with the environment Effectiveness Organizational life-cycles Survival
Brains	Brains Holography

Metaphor	Key characteristics
	Information processing Learning
Cultures	Culture Enactment of shared reality Social construction
Political systems	Conflict Differing interests Organizations as systems of government Power
Psychic prisons	Emotions (e.g. anxiety) Traps of favored modes of thinking Unconscious concerns
Flux and transformation	Autopoiesis Chaos and complexity Logics of change Understanding deep patterns of change
Instruments of domination	Ethics Exploitative or dominant behavior Values

2. I then read through and classified the gathered scenario literature into the metaphors by working with the dominant contribution of the author and asking the question *"When we think of organizations as a machine, organism, etc, what do we see in terms of scenario planning?"* It is important to note that Morgan's metaphors are not either/or categories (Winter & Szczepanek 2009), which is why he refers to a dominant frame and supporting frames when using the metaphors to view organizational life. I thus applied this approach when classifying the literature, working with what I regarded as the dominant contribution of the piece – not denying that there were other supporting ones.

3. To check my ordering, I undertook two initiatives. First, very early in the process I discussed my initial classifications with an experienced scholar and practitioner in a form of "peer debriefing" (Creswell 2003:196). Our differences were discussed until they were resolved. This enabled me to gain further familiarity with the metaphors in relation to scenario planning and to complete the first round of the ordering. I then presented an early version of this paper (using 190 pieces of literature) at the 2008 Academy of Management Meeting in Anaheim and received feedback from two reviewers. Second, after classifying a further 303 pieces I distributed the abstracts of 70 randomly chosen pieces (of the full sample) to three scenario scholars and practitioners and asked them to similarly undertake the classification (although they worked in a more abbreviated way using only the article abstracts and an overview of the metaphors which I provided). I then spoke with these reviewers to understand where we differed and as a result of these discussions and then I did a final review of the full 493 pieces, reclassifying some as a result.

4. Once the pieces were classified within the metaphors, I then inductively categorized them into themes and summarized them. In writing the themes up, I provide references to just some of the authors to give an indication of the literature within each.

ORDERING OF THE SCENARIO LITERATURE BY METAPHOR

This section categorizes the collected scenario literature using Morgan's eight metaphors. The material is organized into the metaphors by asking the question, "W*hen we think of organizations this way (such as machines or organisms, etc.), what do we see in terms of scenario planning?*

1. Mechanization takes command: organizations as machines and scenario planning

This metaphor invites us to see organizations as if they were machines. In doing so, our attention is drawn to concepts such as efficiency, structure, objectives, and performance. In terms of scenario planning, this metaphor stresses the role of the work in contributing to organizational performance while also emphasizing its own need for efficiency.

The first set of material grouped within this metaphor focuses on how scenarios are used as wind tunnels, particularly, to test the robustness of strategic options. Robustness is a preferable criterion (to accuracy) for strategies in situations of uncertainty (Lempert et al. 2006). Those options that are robust across the scenarios are candidates for implementation, while those that are contingent (not common to all) can be addressed through the use of real options (Cornelius, et al. 2005; Miller & Waller 2003).

The second set of material in this metaphor is concerned with the evaluation of scenario planning (of ensuring the machine is performing well) and the lack of "rigorous" studies in this area (Visser & Chermack 2009:581). In response, some writers have advocated for large statistical studies (Phelps et al. 2001) while others propose a single case study approach (Chermack 2003a). The advantages and disadvantages of these approaches are discussed in the literature (Harries 2003).

The third set of material within this metaphor is concerned with 'opening the machine' to understand the scenario process more clearly and to make it more efficient. These take the form of guidelines, checklists, typologies, toolboxes, component kits, handbooks, handrails and pitfalls to avoid (e.g., Becker 1989; Fink & Schlake 2000; Godet 2000; Ralston & Wilson 2006; Schoemaker 1998). In addition, there are writers drawing attention to the challenges that still exist in scenario planning, such as developing processes that are shorter in duration and less resource intensive (Millet 2003).

2. Nature intervenes: organizations as organisms and scenario planning

This metaphor encourages us to see organizations in biological terms as "living systems, existing within a wider environment on which they depend for the satisfaction of various needs" (Morgan 2006:33). Because of the focus on biology and living systems, the key driver within this metaphor is survival. Scenario planning, according to this metaphor, contributes to the survival of organizations by helping managers appreciate and address emerging developments in their organization's environment and working with other system actors to co-evolve.

The first set of material grouped here discusses how an increase in environmental turbulence (Emery & Trist 1965) in the late 1960s, and especially after the oil crisis in the early 1970s, led to the use of scenarios within strategic management. Dealing with turbulence was deemed to be better approached by using multiple scenarios to develop common ground or shared values (van der Heijden 2008) rather than single point forecasts based on extensive quantitative modeling. Ramirez (2008) and Ramirez et al. (2008) have since linked scenario planning specifically to turbulent (as compared to more benign) environments given its focus on uncertainty.

The second set of material in this metaphor explores the benefit of taking an outside-in perspective to strategy work using scenario planning to ensure an organization's fit with the external environment. The focus on the wider contextual environment reflects a belief that this is where change originates. Some writers therefore describe scenario planning as taking an 'outside-looking in' view (Perrottet 1996) or going from the 'macroscopic to the microscopic' (Millet 2006).

A third set of material is concerned with the application of scenario planning at multiple and whole system levels. Scenario planning here includes inter-organizational, industry sector, and multi-stakeholder initiatives (e.g., Cairns et al. 2006; Kahane 2002;

2004; Wilkinson & Elahi 2003). In addition, this literature discusses different scales in scenario planning – and how these can be addressed. One example is how regional scenarios can provide the boundary conditions for local scenarios (Kok et al. 2006).

3. Learning and self-organization: organizations as brains and scenario planning

This metaphor invites us to look at organizations as if they were brains, processing information and learning for the purpose of evolution. It is within this metaphor that the concept of the learning organization has emerged and to which scenario planning contributes.

The first set of material classified here conceptualizes scenario planning as a way to speed up organizational learning (Burt & Chermack 2008; de Geus 1988; van der Heijden 2004a; van der Heijden et al. 2002). Scenarios are said to help organizations see emerging developments as early as possible (Tsoukas & Shepherd 2004) and encourage double loop learning (Becker & van Doorn 1987). Scenario planning also provides 'memories of the future' (de Geus 1997), which provides a form of organizational holography, drawing people's attention to what environmental changes to look for. As an indication of the importance of the concept of learning within scenario planning, de Geus (1988:71) notes that "The ability to learn faster than your competitors may be the only sustainable competitive advantage".

The second set of material in this metaphor focuses on using scenario planning to improve strategic thinking and decision making. To do so, much of this literature draws on cognitive psychology. This includes explaining how scenarios combat thinking biases and probability heuristics (Clemons 1995; Kuhn & Sniezek 1996; Schoemaker 1993). Thus, Grinyer (2000) described scenario planning as a 'softer' cognitive approach to strategic decision taking that complements more analytic strategic planning.

A third set of material calls for an increase in the use of data management techniques (Davies et al. 2005) such as web-based portals (Wild et al. 2005) in scenario planning. Alternative presentation formats such as landscape visualization and digital montages (Dockerty et al. 2006) are also discussed.

A fourth set of material within this metaphor explores the intersections of qualitative and quantitative data in scenario planning. While 'equally plausible' is the most common characteristic for judging scenarios within the intuitive logics tradition (Bradfield et al. 2005) some authors refer to the usefulness of probabilities (Millet 2009). Meanwhile other writers here draw out the complementary roles of modelling versus storytelling in scenario planning using, for example, Fuzzy Cognitive Maps (Kok 2009).

4. Creating social reality: organizations as cultures and scenario planning

This metaphor invites us to think of organizations as socially constructed realities and culture as an ongoing process of reality construction. Citing Weick, Morgan (2006:143) writes that "Organizations choose and structure their environment through a host of interpretive decisions that are extensions of corporate culture". Therefore, this metaphor encourages us to think of scenario planning in terms of its contribution to assisting organizational members construct an understanding of their environment.

The first set of material classified in this metaphor highlights the constructivist perspective to scenario planning. Chermack and van der Merwe (2003) argued that constructivism is a core theoretical domain informing scenario planning, while Wright (2005:86) drew on the fields of social constructionism and narrative to propose that scenarios be considered "prospective sensemaking devices".

A second grouping draws attention to the notion of scenario planning as a set of formal and informal strategic conversations essential for strategy under conditions of

uncertainty (van der Heijden 2005). The literature explores the factors that make such conversations successful, such as applying a design perspective (Hodgkinson & Healey 2008) and attending to the psychological profiles of participants (Naude et al. 2000).

A third set within the literature in this metaphor focuses on the role of stories in scenario planning. Scenarios are told as stories because of their ability to effectively convey complex information. A number of writers make suggestions for how to develop and communicate them including the application of history methods (Staley 2002) and literary theory (Shearer 2004). Others encourage scenarios to be thought of as archetypes (Bezold 1996) and stage sets (Flowers 2003). Scenarios and the strategic conversation also create networks. Galer (2004a; 2004b), while writing about the post-apartheid scenarios developed as part of political change in South Africa, suggests that these scenarios might have supplied the 'myths' that assisted with the transition. He also makes the point that the content may have been no more important than the process – the networks that might have been formed to support change over the long term.

A fourth set of material discusses the influence organizational culture has on scenario planning. Wilson (1998) noted that one of the greatest challenges of scenario planning, is ensuring its compatibility with the organization's culture. However, scenarios can also influence that culture. Korte and Chermack (2007:10) showed that an organization's culture is equivalent to the "collective contributions of individual mental models" and scenario planning is able to influence mental models, thus bringing about cultural change.

5. Interests, conflict and power: organizations as political systems and scenario planning

This metaphor invites us to think of the inevitability of different interests operating within organizations, how these interests manifest as conflict and are resolved through the medium of power. For scenario planning, this metaphor draws our attention to how it can assist organizations deal with different interests while also being influenced by those interests.

The first set of material within this metaphor explores the role scenario planning can play in incorporating multiple perspectives. Morgan argued that the inevitability of differing interests means that they can serve a useful purpose in providing a range of viewpoints. Arvidsson (2008) suggested that scenarios, as part of a future-orientated stakeholder approach, can create more democratic, broad and effective governance processes, while Rosell (2004) talked of the value of scenario planning being to create a strategic conversation at the front end of the governance process.

A second set of literature focuses on the ability of scenario planning to balance groupthink and fragmentation (van der Heijden 2000). Groupthink is the suppression of dissenting views and a tendency for group members to concur with the dominant view while fragmentation occurs when there is no constructive mechanism for dealing with dissent when it dominates (Wright et al. 2004). One way in which the scenario process is said to achieve a balance between groupthink and fragmentation is by not forcing people to defend positions (Brummell 2004).

A third set of material draws attention to the political aspects of institutional contexts within which scenario planning is undertaken. For example, Volkery and Ribeiro (2009) called for greater care to be taken of political and institutional factors to ensure effectiveness in scenario planning; Carillo (2004) showed how scenario planning can be

divisive if the values and core beliefs of the group or organization are highly contested; and Selin (2006:6) described how scenarios are not neutral, but embedded within existing power structures.

6. Exploring Plato's cave: organizations as psychic prisons and scenario planning

This metaphor draws our attention to the fact that while reality in organizations may be socially constructed, these constructions can trap us into certain ways of thinking and acting. In particular, the metaphor invites us to understand how organizations are shaped by the favored modes of thinking of their members as well as their unconscious concerns. For scenario planning this draws our attention to the role the work can play in challenging mental models and bringing about a re-perception of an organization's strategic situation as well as how emotions and psychological defence mechanisms can impede futures thinking.

The first set of material classified in this metaphor emphasizes the value of scenario planning for challenging managers' mental models and assumptions. Some writers argue that the work should be undertaken prior to all conventional decision analysis because of the ability of the work to "challenge individual and organizational worldviews" (Wright & Goodwin 1999:311). Chermack (2003b:25) described scenario planning as "a tool for provoking and providing alternative mental models in such a way that they can be shared and re-constructed".

The second group of material within this metaphor speaks of the main rationale of scenario planning being a conceptual reframing of an organization's strategic situation. Wack (1985a:84) referred to this as the "gentle art of re-perception" which is brought about by having a scenario that destroys current assumptions followed by others that provide managers with new insights (Kleiner 1996). Selin (2007) questioned whether re-

perception can occur in some modern scenario planning where scenarios are developed in isolation and do not sufficiently engage managers' views of the future.

A third set of material discusses how emotions and psychological defence mechanisms can impede thinking about the future. Hodgkinson and Wright (2002:955) argued that scenario practice may cause "dysfunctional stress levels" among decision makers if the dangers of the future are perceived as being too difficult to face. Such emotions can be addressed by using scenarios as transitional objects (Winnicott 1971) to provide a connection between the past and the future (Burt 2003).

7. Unfolding logics of change: organization as flux and transformation and scenario planning

This metaphor invites us to think about organization as a process of constant change, but a process which is connected to a deeper inner logic. Scenario planning in this context assists organizations understand deep patterns of change.

The first set of material within this metaphor discusses the theory of autopoiesis and how it challenges the view that systems evolve in relation to changes in the environment (Morgan 2006:403). Instead, according to this theory, change occurs because systems are self-referential in that "they look at themselves and regulate their functioning through a process analogous to thought". In addition, the environment is not seen as 'something out there', but rather an extension of the way the system (e.g. the organization) conceptualizes itself (its identity, interests and concerns). As a result writers such as Jacobs and Statler (2006) suggested the theoretical perspective of serious play be applied to scenario planning, which makes the connection between assumptions about identity and the environmental context of the organization more explicit.

A second set of material discusses the role scenario planning plays in assisting organizations understand the deep patterns of change of which they are a part. To understand these patterns, systems dynamics techniques are often used (Ward & Schriefer 1998). Systems analysis is a move away from simple cause and effect to working with negative (balancing) and positive (reinforcing) feedback loops to understand where patterns of lock-in in a system might occur. These positive feedback loops are what Wack (1985a) referred to as pre-determined elements or those things that are already in the pipeline that managers can be more sure about their coming to pass. Burt (2006) provided a useful further explanation of how to conceptualize pre-determined elements.

A third group of material describes the role scenarios play in innovation. For example, Wilson (2004) suggested the combined use of scenarios, scanning and monitoring for technology forecasting; Strauss and Radnor (2004) and Lizaso and Reger (2004) suggested the use of roadmapping and scenarios to assist with developing and deploying technologies.

A fourth set of literature in this metaphor looks at how scenarios can better incorporate discontinuities, which Burt (2007:2) defined as "'a lack of continuity or cohesion' with past experience, bringing about a new order over time". A number of suggestions are made in the literature such as combining systems analysis with Christensen's three bases of disruption (Burt 2007); a more explicit use of wildcards (Postma & Liebl 2005); and balancing the causal storyline of the scenarios with the introduction of some discontinuities (van Notten et al. 2005).

8. The ugly face: organizations as instruments of domination and scenario planning

This final metaphor focuses our attention on the exploitative and dominating effects of organizations. In particularly it suggests that domination may be intrinsic to

organizing. For scenario planning this raises the issues of values and ethics in the way in which the process is conducted, as well as the ends to which scenario planning is put.

The first set of material here discusses the ethics and values involved in scenario planning. Some writers point out how a scenario process can turn ugly due to the actions of key participants (Hodgkinson & Wright 2002). Blanning and Reinig (1998; 2002) show how the use of Electronic Meeting Systems (EMS) can be an effective way to develop scenarios around topics that are sensitive and where it is not possible for people to openly express their ideas and opinions. EMS provides interaction with anonymity.

The second set of material touches upon the degree to which scenario planning might "help corporations act more ethically, responsibly, or with greater concern for their workers, the environment or humanity" (Tucker 2007:50). Thus, Athanopolous (2008) outlined the role CSR scenarios can play in building common ground between an organization and its stakeholders, thereby contributing to ethical outcomes.

This grouping also questions whether scenario planning in non-government organizations might be different compared to its application in the corporate and government sectors. MacDonald (2004) noted that scenario planning with international not-for-profit organizations can shift the discussion about what constitutes success – not survival as might be in the private sector – but how to complete their mission and put themselves out of business.

The third set of literature in this metaphor relates to how scenario planning can overcome the instruments of domination. Chapman (1976) argued that the use of scenarios represents a move away from a deterministic view of the future and Ogilvy (2002) described the work as an opportunity to democratize meaning by involving stakeholders in discussions about the organization's future. Chermack and Lynham (2004:42) suggested scenarios should be integrated with critical theory to "help oppressed

or transitioning groups imagine a series of plausible futures that could be, should be, and ought to be". Other writers differentiated between normative scenarios that outline desired futures and exploratory scenarios, which focus on possible developments in the contextual environment (Ogilvy 1996; van der Heijden 2004b).

Summary

This section has ordered 493 pieces of scenario literature into Morgan's eight metaphors. The main themes within each metaphor are summarized in Table II.

Table II: Summary of the themes in scenario planning

Metaphor	Key characteristics	Scenario literature themes
1. Machines	Efficiency Objectives Performance Structure	1.1. Scenarios as wind tunnels and ensuring robustness of strategic options. 1.2. Evaluating scenario planning. 1.3. Attending to efficiencies and improvements in scenario planning.
2. Organisms	Co-evolution with the environment Effectiveness Organizational life-cycles Survival	2.1. Turbulence and the role of multiple scenarios. 2.2. Using scenarios to take an 'outside-in' approach to strategy and other organizational processes. 2.3. Applying scenario planning to inter-organizational and whole system levels.
3. Brains	Brains Holography Information processing Learning	3.1. Scenario planning as a process for speeding up organizational learning. 3.2. Improving strategic thinking and decision making with scenarios. 3.3. New technologies and techniques for generating and storing information related to scenario planning. 3.4. Intersections of different forms of data in scenario planning.
4. Cultures	Culture Enactment of shared reality Social construction	4.1. The constructivist perspective of the environment and scenario planning. 4.2. Scenario planning as a set of strategic conversations. 4.3. Scenarios as stories. 4.4. How organizational and professional cultures influence scenario planning.

Metaphor	Key characteristics	Scenario literature themes
5. Political systems	Conflict Differing interests Organizations as systems of government Power	5.1. Incorporating multiple perspectives through scenario planning. 5.2. Scenario planning as helping to balance groupthink and fragmentation. 5.3. Attending to the political and institutional contexts within which scenario planning is undertaken.
6. Psychic prisons	Emotions (e.g. anxiety) Traps of favored modes of thinking Unconscious concerns	6.1. Challenging mental models and worldviews through scenario planning. 6.2. Scenario planning as bringing about a conceptual reframing of the strategic situation. 6.3. Emotions and psychological defence mechanisms in scenario planning.
7. Flux and transformation	Autopoiesis Chaos and complexity Logics of change Understanding deep patterns of change	7.1. Autopoiesis and scenario planning. 7.2. Understanding the dynamics of systems through scenario planning. 7.3. The role of scenarios in innovation. 7.4. Identifying and incorporating discontinuities in scenario planning.
8. Instruments of domination	Ethics Exploitative or dominant behavior Values	8.1. Ethics and values in scenario planning. 8.2. Ends to which scenario planning is applied or should be applied. 8.3. Scenario planning and its role in overcoming domination.

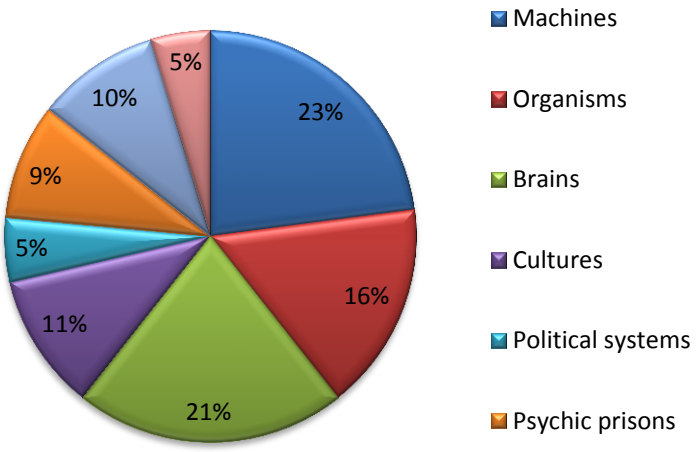
DISCUSSION

As a result of classifying the scenario literature within these metaphors, a number of insights have emerged that relate to the distribution pattern of the literature across the metaphors and through time; the tensions in scenario planning as exposed by the different metaphors; and future directions for scholarship and practice. These are discussed below.

Distribution pattern of the literature across the metaphors

Figure II provides an overview of the distribution pattern of the literature by metaphor. It shows the dominance of the machine metaphor followed by the brain and organism metaphors. Those metaphors with the least pieces of literature are organizations as political systems; and instruments of domination; while cultures, psychic prisons and flux and transformation have a moderate number of pieces.

Figure II: Distribution pattern of the scenario literature by metaphor



The dominance of the machine and organism metaphors is reflective of the wider organizational literature. For example, Morgan (as cited in Grant & Oswick 1996) has

argued that these metaphors have dominated management literature for well over 100 years.

A large number of pieces in the machine metaphor have to do with concerns about how to make scenario planning efficient. This reflects the fact that the field has traditionally been practitioner-led where these concerns are especially salient. Consequently, many writers have proposed checklists, typologies and guidelines to improve the process while others have discussed forms of evaluation.

The amount of literature found in the brain metaphor is related to the conceptualization of scenario planning as a useful organizational learning process and an aid to strategic decision making (by overcoming related cognitive biases). While the relatively large number of pieces in the organism metaphor is due to an early realization that multiple scenarios could provide a better way to deal with environmental turbulence than traditional single point forecasts.

The moderate number of pieces in the culture metaphor is reflective of van der Heijden's (1996; 2005) popular conceptualization of scenario planning as a strategic conversation as well as the more general understanding that scenarios are best expressed as stories (rather than quantitative models). The material in the psychic prisons and flux and transformation metaphors build on the early insightful work by Wack related to re-perception and the importance of unearthing pre-determined elements (those things that are already in the pipeline and from which planning can be undertaken with more certainty).

The two metaphors with the least pieces of literature are political systems and instruments of domination. The likely reasons for the lack of pieces in the political systems metaphor is a preference in politically orientated disciplines (such as international relations) for knowledge based on the past rather than the future (Bernstein et al. 2000). In

addition, limited attention has been given in the literature to the social and political milieu in which every scenario planning project is undertaken (Lang & Allen 2008).

With regard to the instruments of domination metaphor, there are two probable reasons for the lack of literature here. The first is that scenario projects in the public domain are mostly self-reported, success stories. Thus, there are few examples where things have not gone well (the exchange between Hodgkinson & Wright (2006) and Whittington (2006a; 2006b) being an exception). The second is the dearth of literature relating scenario planning to non-government organizations. It is this sector where values are more likely to surface.

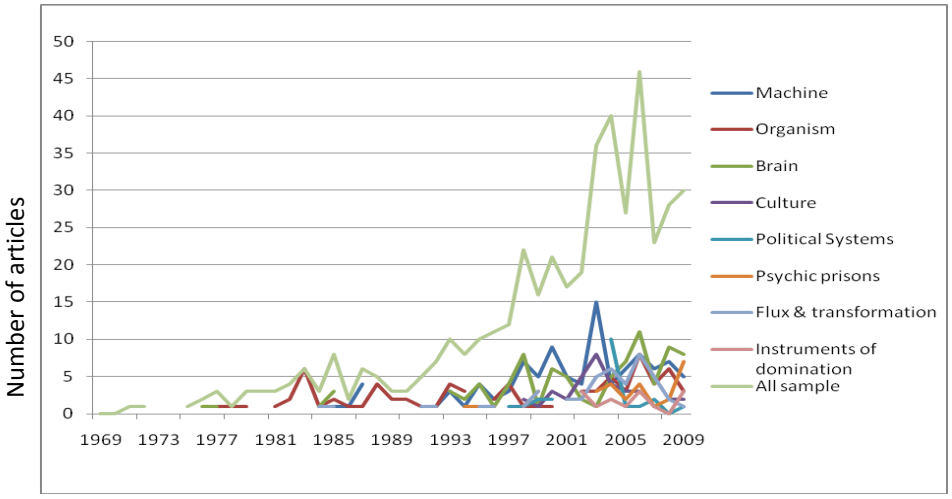
Historical overview

The distribution pattern of the literature also provides an overview of the historical development of scenario planning in organizations. That is, the literature within the organism metaphor explains how organizations adopted scenarios in response to increasing environmental turbulence. Then as scenario planning was taken up there was a focus on the efficiency of the process and its contribution to the performance of the organization (the machine metaphor). Subsequently, it became evident that for scenarios to be effective, attention had to be given to the involvement of managers in the learning process (the brain metaphor). Once scenario planning was then understood as a learning process, it is possible to see how the notion of social constructionism and the strategic conversation came to the fore (the cultures metaphor). Similarly, concern over emotional factors and defence mechanisms that impede managers' ability to re-perceive the strategic situation (psychic prisons metaphor) and grasp deep systemic changes (flux and transformation metaphor) account for these lineages of material.

A historical perspective also reveals the growth in the scenario planning literature over the last 40 years. Figure III shows a general ascending trend line. (In Figure III,

chapters from edited books with more than four chapters have been removed as they created some artificial peaks. These books were published in 1998, 2004, 2007 and 2008. A graph of the full sample can be seen in Figure I.)

Figure III: Distribution pattern of the scenario planning literature by metaphor and year (with chapters from edited books removed)

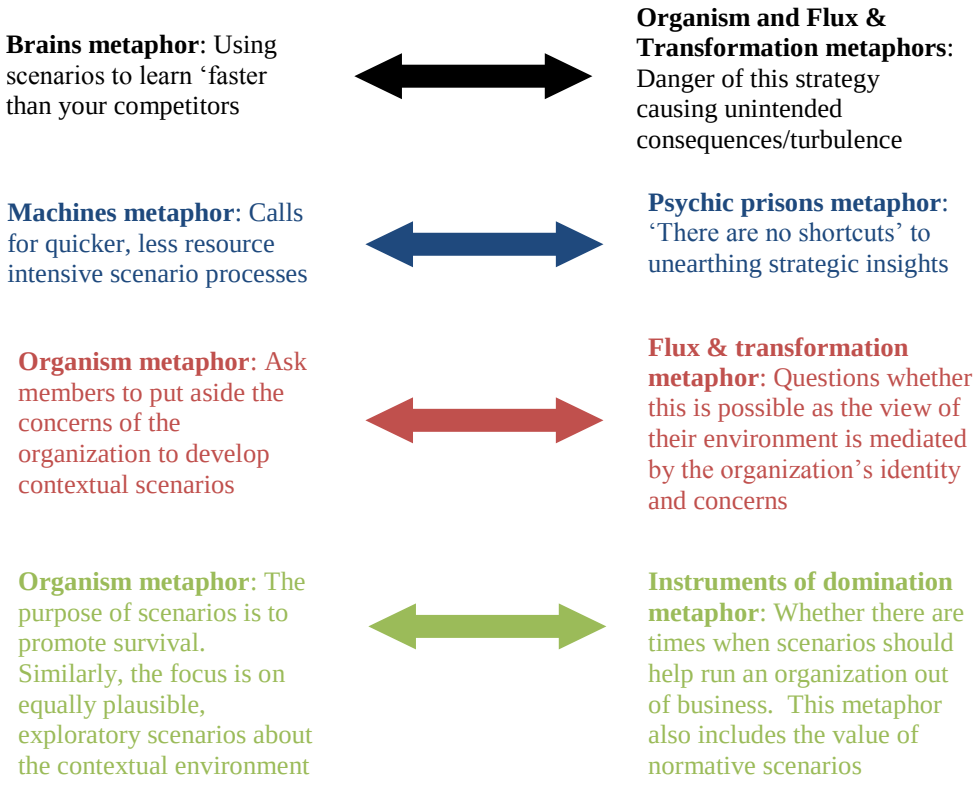


There are two interesting features to note in relation to this graph. The first is the growth post 9/11, which writers such as Ramirez et al. (2008) have argued is related to an increasing acceptance by managers that there are aspects of the environment that cannot easily be controlled. This would be expected to translate into an increased interest in scenario planning as a mechanism for addressing the uncertainty caused by this sense of a lack of control. The second feature is that while the machine, brain and organism metaphors have dominated historically, over the last few years this has started to change with the published material increasingly representing a variety of metaphors. This should be expected to continue as the field matures and new theoretical aspects are developed.

Competing tensions in scenario planning

This classification of the literature has also been instructive in terms of highlighting four tensions within scenario planning which are outlined in Figure IV.

Figure IV. Four tensions in scenario planning



The first is related to de Geus' (1988:71) comment in the brain metaphor that "the ability to learn faster than your competitors may be the only sustainable advantage". The focus here is on the individual organization seeking to stay a step ahead of the competition. However, from the perspective of the organism and the flux and transformation metaphors this is "…a recipe for enormous turbulence" (Morgan 2006:114) that could be self - defeating as uncertainty increases and unintended consequences result.

The second tension emerges between calls for quicker, less resource-intensive scenario processes in the machine metaphor and a reminder by others such as Wack (as cited in van der Heijden 1999) in the psychic prisons metaphor that 'there are no shortcuts'. Wack saw this type of work as something you devoted your life to because it takes time and skill to deeply understand emerging changes. Those advocating for shorter processes argue that organizations are limited by available resources and timeframes that make longer processes counter-productive. Selin (2007:49) offered a middle ground between

these two camps believing that certain benefits of the original conceptualization of scenario planning by people such as Wack may be able to be delivered in modern contexts through "small, fast glances solidified into stories that can become part of the organizational learning".

The third tension is related to the best way to build and use scenarios. Traditionally, the scenario process focuses on the contextual environment (as discussed in the organism metaphor) asking participants to put aside the concerns of the organization at this time. However, the theory of autopoiesis in the flux and transformation metaphor questions the ability of organizational members to be able to do this because their views of the environment are mediated by identity, interests and concerns. This is a form of reflexivity where people's representations shape what they see and in turn what they see influences the nature of their representations (Woolgar 1988). To avoid the danger of reflexivity (where what is 'seen' becomes narrower and narrower) the importance of introducing multiple viewpoints into the scenario process (using remarkable people for example) is highlighted as is viewing scenarios as alternative framing devices (Wilkinson & Ramirez 2010).

The fourth tension is between the application of scenario planning with non-government organizations and corporate and government clients. MacDonald (2004) shows in the instruments of domination metaphor how the strategic objective of international non-government organizations is to put themselves out of business. Whereas the focus for corporate and government organizations, viewed through the organism metaphor, is survival. The interesting question is whether these different objectives have consequences for the way in which scenario planning is undertaken.

Implications

Implications for scholarship. For scholars, this ordering of the scenario literature highlights several research and publication opportunities. First, are those related to the tensions within scenario planning as outlined above. For example, are there other techniques for developing scenarios that take into account the role of organizational identity as highlighted by the theory of autopoiesis? And how can scenario planning be designed in such a way that time and resources are minimized, while not losing the benefit of delving deeply to understand structural changes? How are these tensions to be reconciled?

Second, research within those metaphors with the least amount of literature would be useful. In the instruments of domination metaphor, for example, there is a need for greater understanding of the application of scenario planning to the civil society/not for profit sector. In the literature in the political systems metaphor there are no tools for assessing the social and political context within which scenario projects are conducted. Yet in a review of all the phases of scenario planning, Lang and Allen (2008) found that understanding and accounting for the social and political context of each was relevant and necessary.

Third, there are knowledge gaps within some metaphors that could be usefully explored. For example, in the flux and transformation metaphor there are no applications of chaos and complexity theory to scenario planning, yet both would seem important. Complexity theory implies that we can never be really sure of the outcome of scenario planning; while chaos theory suggests that scenario planning plays the role of generating "new understandings" (Morgan 2006:259) that can 'flip' a system into a completely new configuration. These would both seem to be fruitful areas for research. The 2011 Oxford

Futures Forum, exploring the links between complexity theory and scenarios, will hopefully result in publications in this area.

Implications for practice. For practitioners, this ordering of the scenario literature shows that the multiple and sometimes competing claims about the purpose of scenario planning are the result of authors foregrounding certain aspects of the work. This reinforces the importance of tailoring the work to reflect the context within which it is to be applied. For example, if a company is considering expanding internationally and deciding in which cities to establish a presence, the design of the scenario planning to explore this would need to be shaped by the surrounding context. That is, if many of the management team held different views about which cities they thought the company should expand into, then the scenario planning would need to be designed in such a way that these voices were heard and managed. On the other hand, if the situation was that the management team wanted to get a better understanding of the structural changes occurring within the industry (and what factors might influence their decision about future city locations), the scenario planning would emphasize techniques (such as systems maps) for determining these deep changes. Table III below provides further examples about how using the different metaphors to "read" (Morgan 2006:345) the situation can greatly assist design choices and success in scenario planning.

Table III: Adapting the purpose and design of scenario planning to the situation

Dominant metaphor	Situation maybe characterized by:	Design considerations to be foregrounded:
Machines	There is a desire to find the cities that represent the most robust options. In addition, there are time and budget constraints on the scenario	Wind tunnel the different cities through the scenarios to determine the most robust options. Use real options for the less robust choices. Negotiate

Dominant metaphor	Situation maybe characterized by:	Design considerations to be foregrounded:
	planning that needs to be taken into consideration.	with the 'client' about expectations within available resources.
Organisms	The need for international expansion is driven by changes in the external environment. The choice of cities must therefore enable a good 'fit' between the firm and its environment.	Carefully review the driving forces from the contextual environment and create scenarios of the future transactional environment.
Brains	Little is known about the different cities and information must be gathered from many sources to help facilitate learning and management decision making.	Interview 'remarkable' people to provide insights about the future of the cities. Develop indicators to monitor the scenarios and to provide an indication about which additional cities might be relevant in the future.
Cultures	There is a need to have the scenario process contribute to developing a shared understanding and set of values among the key stakeholders about international expansion.	Give careful consideration as to who to involve in the scenario process – the strategic conversation - and in what capacity. Allow time and interaction opportunities for shared understanding and values to develop.
Political systems	There are many contested views within the management team about where the offices should be located. There may also be questions of who is controlling the scenario process and whether it is transparent and fair.	Undertake a political analysis of the situation to understand who has the power to block the process or final decisions. Ensure that all the management team and other key stakeholders are provided with an opportunity to express their views. Ensure the process is conducted in a transparent and as fair way as possible.

Dominant metaphor	Situation maybe characterized by:	Design considerations to be foregrounded:
Psychic prisons	Emotionally the idea of expanding internationally is not a comfortable one for many on the management team. Consequently, there may be a view that expansion is not needed which may need to be challenged – in a safe way.	Give consideration as to how to make the scenario process 'safe'. Emphasize for example that the scenarios are exploratory with no decisions required at this stage. Consider a scenario that maps onto existing expectations and explore whether these expectations are realistic.
Flux and transformation	A deep understanding is required of the changes impacting the industry and how these changes will shape which cities will be the most lucrative in the future for the company.	Consider using systems maps and causal diagrams to understand the underlying logics of the industry system.
Instruments of domination	There is a desire in the company to make a positive contribution to the cities in which they will be located. Thus, the choice of cities will need to maximize this opportunity.	Build this in to the purpose of the scenario planning.

CONCLUSION

As an exploratory study, this ordering of 493 pieces of scenario literature published between 1969 and 2009, has provided a preliminary analysis of the main images in the scenario planning literature. What has been revealed is that the multiple and sometimes competing discussions in the literature are the result of authors foregrounding certain purposes of scenario planning. This analysis has enabled these to be teased apart and understood separately while also enabling them to be seen in relation to one other (as a

whole). As a result it draws attention to many new lines of scholarship and practice that can be pursued to further develop the field.

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CHAPTER FOUR.

SCENARIO CRANES TO BUILD NEW COGNITIVE SOCIAL CAPITAL

Abstract

This paper reports on the outcomes of exploratory research on building new social capital with scenario planning. The key finding is that scenario planning can build new social capital by using the conceptual future to make new sense of turbulence. This is done through a counterfactual process analogous to building a 'crane' to a new conceptual vantage point (the future) from which the present can be reframed. Through the process of building and using the crane, new framings and possibilities are articulated, thereby creating new shared systems of meaning. Because of the focus on the conceptual future and structuring it using scenarios, the importance of the cognitive dimension of social capital is emphasized. This paper thus makes two contributions to the literature: shedding light on what Maurer and Ebers in 2006 termed the "dearth of research" about how organizations can build and reconfigure their social capital to address changing strategic circumstances; and stressing the important role played by the cognitive dimension of social capital in situations where there is a priority on providing the resources to create new shared systems of meaning.

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INTRODUCTION

The role of action in creating social capital remains implicit in much of the literature (Lin 2001) leaving knowledge about how it is built largely under-attended (a point highlighted by Adler & Kwon 2002; Bolino et al. 2002; Edelman et al. 2004; Ellinger et al. 2011; Pastoriza et al. 2008). This is despite one of the earliest mentions of the term being specifically in reference to its building (see Hanifan's 1916 description of building an accumulation of social capital in a rural US school district). Maurer and Ebers (2006) have thus described the situation about how organizations can build and reconfigure their social capital over time to address changing strategic circumstances as a "dearth of research".

Changing strategic circumstances caused by turbulence in the environment (Emery & Trist 1965), means that an organization's existing configurations of social capital can shift from being an asset to a liability (Miller & Shamsie 1996); limiting its access to non-redundant information and the pursuit of new collective action opportunities (e.g., strategic alliances). Previous research has suggested that an organization's ability to build new social capital over time is positively correlated with success (Maurer & Ebers 2006).

However, building new social capital is regarded as difficult because of the tendency of organizations towards dynamic conservatism (Schon 1971) where relationships become 'locked-in' over time. Structural lock-in reasons include relying on existing connections when reaching out to generate new ones (Gulati & Gargiulo 1999) in order to reduce search time and to minimize costs related to the risks of opportunistic behaviour. This results in over-embeddedness (Polanyi 1957; Granovetter 1985) and increasingly closed systems where everyone knows everyone else (Duysters & Lemmens 2003). Relational lock-in reasons relate to a familiarity with existing partners that has built trust and expectations about reciprocity that need to be maintained as well as concerns over a

loss of reputation for cutting ties that could result in third party defections (Gargiulo & Benassi 2000). Combined with the uncertainty about how new relationships might work out, the reduced costs, time and emotional energy in staying with existing relationships is significant. Cognitive lock-in (Maurer & Ebers 2006; Uzzi 1997) refers to the shared meanings and language developed over time which facilitates communication but can also lead to groupthink and redundancy (Smith-Doerr & Powell 2005).

These challenges for building new social capital have led scholars to argue that effective agency (Lin 2001) is required. Similarly, researchers have drawn attention to the time required. Putnam (1993) suggested that social capital is a historic and almost accidental endowment accumulated over decades – or even centuries – rather than something that can be quickly created. Emery and Trist (1965) suggested it can take generations for values (the relational dimension of social capital) to change. With turbulent or hyper-velocity (Bourgeois & Eisenhardt 1988) environments becoming more salient (Rigby & Bilodeau 2007), finding more direct and quicker ways to build new social capital is urgent.

In this paper, scenario planning and its use of the conceptual future is explored for its capacity to speed up the building of new social capital in the context of organizations addressing turbulent environments. Normann (2001) differentiated between the conceptual past, the present and the conceptual future and argued that by using mechanisms such as scenario planning, participants could temporally re-locate mindfulness to another perspective from which they could see the present afresh. He referred to such conceptual mechanisms as ‘cranes’. Scenario planning is an example of such a crane enabling actors to reframe the present by seeing it from possible futures and in doing so identify and build new social capital.

Scenario planning is used by organizations facing potential or perceived turbulence to help them appreciate the changes occurring in their external environments so as to minimize risks and highlight emerging opportunities (Ramirez et al. 2008; 2010). Reflective practitioners (Schon 1983) have suggested that the practice of scenario planning builds new social capital. For example, Galer (2004), reflecting on the scenario planning undertaken in South Africa as part of the transition from apartheid to democracy, questioned whether a major outcome of this work was the networks that were created for the long term. While Kahane (2004:35) who facilitated one of the most well-known of these initiatives, the Mont Fleur Scenarios, observed that the process contributed to the building of a "cross-sectoral network of trusting relationships – what Robert Putnam calls social capital". Kahane suggested it was these relationships that contributed significantly to the peaceful political transition in South Africa.

This paper reports on research based on two comparative cases - the scenario planning of the European Patent Office (2004-2007) and The Open University in the UK (2002 and 2005) – and finds that the work, through its use of the conceptual future, can build new social capital. Scenario planning does so by acting as a direct investment in developing cognitive social capital, the resources that provide shared systems of meaning among a group of actors (Nahapiet & Ghoshal 1998). By foregrounding the cognitive dimension (as compared to the structural or relational) the building of new social capital can be achieved more quickly than the time Putnam or Emery and Trist indicated was needed. As a result of these findings, the paper contributes to a further understanding of the cognitive dimension of social capital and its construction - and how scenario planning can lead the building of new social capital in situations where there is a premium on creating new shared systems of meaning.

The paper is organized as follows. First, the literature is briefly reviewed to understand what is currently known about building social capital with scenario planning. This is followed by an explanation of the research design and the cases used in the study. Second, the results of the research are presented, outlining the impact of the deployment of scenario planning on building the three dimensions of social capital (the cognitive, structural and relational). Third, the discussion returns to the theoretical contribution outlined above to discuss the value of scenario planning foregrounding the cognitive dimension to accelerate the building of new social capital.

BUILDING NEW SOCIAL CAPITAL WITH SCENARIO PLANNING

The premise of social capital is that investing in social relations can lead to beneficial returns (Lin 2001) "enabling individuals and social groupings to achieve outcomes they could not otherwise achieve, or could only do so at extra cost" (Coleman, Burt & Putnam as cited in Nahapiet 2009:207). Nahapiet and Ghoshal (1998:243), in the most cited social capital article in organizational studies (1,807 times in the Social Sciences Citation Index as of 16 February 2012), defined social capital as "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit".

Naphaiet and Ghoshal (1998) also articulated three dimensions of social capital. The first is the *structural* - patterns of connections among actors including concepts such as network ties, network configuration and appropriability (Coleman 1988). The second dimension is *relational* - the type of relationships among actors including concepts such as trust, norms, obligations and identity. The third dimension is the *cognitive* - the resources that provide shared systems of meaning for actors including concepts such as shared narratives and language. The cognitive dimension is especially relevant in situations where

knowledge intensity is high (Nahapiet & Ghoshal 1998) and to date has received less attention in the social capital literature (as noted by Bolino et al. 2002; Maurer & Ebers 2006; Nahapiet 2008).

Whether these three dimensions – and social capital generally – are built directly and deliberately or emerge as by-products of investments in other activities is a key point of discussion in the literature. Bourdieu (1985:249) for example argued that social capital can be deliberately built because it is not a natural or social given and must be achieved through "endless effort at institution". Similarly, after extensive empirical research, Maurer and Ebers (2006) concluded that an organization can take purposeful action to build and reconfigure its social capital over time. Alternatively, Coleman (1988) took the by-product view, arguing that social capital becomes available to members in an organization once that organization is established for a particular purpose. Baker (2000:22) similarly took the by-product view, quoting the Zen saying that "if you want to go north, head south" to argue that social capital emerges from participation in meaningful activities.

According to Nahapiet (2008; 2009) there is evidence in organizational studies for both strategies. This raises the possibility that some forms of social capital are more conducive to being directly built than others, a position Ostrom and Ahn (2003:xxxi) promote by arguing that investing in creating institutions, is "as much an investment decision as any investment in physical infrastructure".

Lang's (2012) review of the scenario planning literature points to the ways in which the work could build new social capital by foregrounding the cognitive dimension. These include: accelerating organizational learning (de Geus 1988); facilitating re-perception (Wack 1985b); anticipating turbulent conditions (Ramirez et al. 2008); convening diverse actors in a strategic conversation (van der Heijden 2005); and using the

conceptual future as a way of reframing the present (Inayatullah 2009). By leading the building of social capital with the cognitive dimension, the structural (e.g., networks) and relational (e.g, trust) dimensions can emerge as by-products, which the literature suggests is most likely how they are created (Dowla 2006; Ostrom & Ahn 2003).

The role of temporality in building aspects of social capital has already been shown to be effective. Sabel (1993:1136) in his research found that the conceptual past can provide the space by which diverse actors can build trust. By researching and learning about the history of their industry together, these actors had the chance to re-interpret "their collective past, and especially their conflicts in such a way that trusting co-operation comes to be seen as a natural feature…of their common heritage". While learning processes more generally have been linked to building social capital (e.g. Melander & Nordqvist 2002; Maurer & Ebers 2006), scenario planning sheds light on the value of extending the temporal domain for building social capital to learn explicitly from the point of view of the conceptual future.

Normann (2001) argued that there are a number of temporal perspectives from which the present can be re-framed. He identified nine along a matrix defined by two dimensions. The first is the *conceptual time* dimension made up of the conceptual past, the present and the future. The second is the *conceptual level* moving up to a higher logical system level of aggregation to focus on patterns and structures, or down to a lower system level to explore the phenomena in greater detail. Of all the nine resulting conceptual boxes, Normann (2001:200) advocates for a higher level of aggregation in the conceptual future because it "is the area most likely to hold the potential for discoveries of reframing our business, to reflect the opportunity and imperative of reconfiguration". This is the

sphere in which scenario planning operates – thereby offering a crane to this important vantage point.

Scenario planning provides multiple representations of the possible future context faced by an organization facilitating adaptability by enabling them to respond to a range of 'what if' questions (van der Heijden 1996; 2005). The work was introduced to organizations in the 1960s as single point, long term planning forecasts failed to cope with growing environmental turbulence (Wack 1985s; 1985b). Scenario planning on the other hand foregrounds uncertainty and unpredictability, helping actors to appreciate what is driving the turbulence.

To make sense of the uncertain situation caused by the turbulence and to build the cranes to the conceptual future, scenario planning involves reaching out to others, thus providing opportunities for building new social capital (Ramirez et al. 2010). This reaching out is done through activities or what Feld (1981:1025) called a foci – "any social, psychological, or physical entity around which joint activities of individuals are organized". A foci or activity is regarded as essential for the formation of social capital (Baker 2000). In this paper, the activities of scenario planning are explored for their capacity to build new social capital.

Using Shell International's (2003) framework, the activities making up scenario planning are outlined in Table I. Shell's framework is used here as it represents the intuitive logics approach to the work (Bradfield et al. 2005), which was the process used in the two cases researched.

Table I: Scenario planning activities (intuitive logics approach)

Phase	Overview	Activities
1. Preparation	Clarifying goals and resources to design the inquiry.	Conversing with project sponsors. Designing the process.
2. Pioneering	Undertaking research and outlining the scenarios.	Interviewing stakeholders and 'experts'. Researching – document based. Facilitating workshops with stakeholders and 'experts'.
3. Map-making	Developing the scenarios and gaining endorsement.	Writing the scenarios. Consulting with stakeholders and 'experts'. Liaising with project sponsors.
4. Navigation	Communicating and using the scenarios.	Publishing the scenarios (soft and hard mediums). 'Launching' the scenarios. Using the scenarios for 'strategic conversations' within the focal actor and among actors in the wider network.
5. Reconnaissance	Using the scenarios to develop implications, interpret signals, share perspectives and recognize differences.	Developing strategic 'plans' from the scenarios. Using the scenarios to detect weak signals (an early warning system). Using the scenarios in an ongoing way.

These scenario planning activities executed in two case studies offer an excellent opportunity to observe, ex-post, the impact of scenario planning on the ex-ante intention of building new social capital.

RESEARCH DESIGN

To undertake the research, two in-depth case studies (Yin 1994; 2003) were explored – the scenario planning of the European Patent Office (EPO); and that of The Open University (OU) in the UK. However, there were two rounds of scenario planning

conducted in the OU (2002 and 2005) providing in effect a third point of comparison. The case study approach allowed the deployment of scenario planning to be observed over time within different organizational contexts. Pettigrew (as cited in Eisenhardt 1989:537) has suggested focusing on cases where the subject of interest (the building of new social capital) is most "transparently observable". The two cases are also comparable, as those undertaking the scenario planning in both organizations sought to have the work help them reach out to engage various constituencies in strategy development.

While practitioners have suggested scenario planning can build social capital (Galer 2004; Kahane 2004), no scholarly research has been conducted to explore this. Thus, the stance in this research is exploratory – to understand this possible connection by asking "How does the deployment of scenario planning to address perceived or potential turbulence impact the building of new social capital?" Even though this was an exploratory study, the advice of Miles and Huberman (1994) was followed such that the research design was structured to the point of providing enough clarity and focus to prevent data overload and to finish the study within time and budget. This led to the identification of sensitizing concepts (Denzin as cited in Patton 1990) from the literature about how the deployment of scenario planning could build the three dimensions of social capital.

The sensitizing concepts in the structural dimension included understanding the pattern of connections created among actors through the scenario events. This included identifying new actors – the bridging of structural holes (Burt 1992) - and those occupying central positions in the networks. Those occupying central positions could be expected to build more social capital due to more frequent interactions and opportunities to work closely with a wide number of participants. In the relational dimension, creating trust has shown to be important in scenario planning (Elahi 2008) for providing the conditions for

honest communication and suspending disbelief (Frittaion et al. 2011; Wright & Rowe 2011). I was guided by work that showed how trust could be built among actors researching and learning together using the conceptual past (Sabel 1993). Thus, I sought to explore how scenario planning might offer a mechanism for actors to research together thereby building trust – this time however using the conceptual future. In addition, the formation of collective identities (another component of the relational dimension) has been shown to build social capital (Kramer 2006; 2009), thus I was also exploring how scenario planning might provide a set of cues for building such identities. In the cognitive dimension, I was investigating how scenario planning might provide concepts such as language, frames and boundary objects for creating new shared systems of meaning to better address the changes arising from the turbulence.

These concepts were reflected in the interview and survey questions (see appendix I and III). The aim of these sensitizing concepts was to provide an initial starting point for exploration. However, once out in the field, I was attentive to understanding other emergent factors.

To focus the research, the unit of analysis was one social capital link within each case. The choice of this relationship was determined by consulting with those responsible for the scenario planning at the time I was negotiating entry to the field[1] as well as key project team members within the host organizations - using the criteria of accessibility, usability and variance of the data. This resulted in a focus in the EPO case on the building of social capital between the Office and the academic community involved in patenting and intellectual property. The scenario planning represented a deliberate effort to reach out and engage academics from a number of disciplines to consider future contexts the EPO might face. In the case of the OU, the research focused on the building of social capital between

[1] In the EPO case, this was the Controller and in the OU it was the head of the Futures (Planning) Office.

the Vice Chancellor's Executive (VCE) – those responsible for the scenario planning and the university's strategic direction – and the university's own academic community. Academics are traditionally more removed from institutional strategy than administrative staff and an aim of the scenario planning was to engage them in the strategic planning of the organization.

The two cases

While the scenario planning in the two cases did not have the 'building of new social capital' – stated in these terms, in any case – as an a-priori objective of the work, in each case there was an aim to reach out with, and to, others to appreciate the forces causing the potential or perceived turbulence and to pool their complementary knowledge (Xiang & Clarke 2003). An overview of the two cases is provided below and summarized in Table II.

European Patent Office (EPO). These scenarios explored the future legitimacy of the global patenting and intellectual property (IP) system and reflected the desire of the EPO leadership to make sense of the diversity of voices calling for change. The work was initiated in 2004 by the Management Advisory Committee (MAC) – that is, the board of managing directors - and sponsored by the EPO President. An external consultant (the convenor) was appointed as an EPO staff member for the duration of the work and she was responsible for designing and executing the process.

The completed scenarios were made public in April 2007 as part of a ceremony to celebrate the 30th anniversary of the EPO. Approximately 200 people were in attendance including the German President, Dr Angela Merkel, who attended in her capacity as EU President at the time. 2000 booklets of the interviews were printed and distributed (in 2006) and subsequently included as a CD in the final compendium of the scenarios. 20,000 copies

of the compendium were printed to enable 7,000 to be distributed to every member of the EPO and the rest to be available for follow-up presentations. By March 2009 (when I was in the field), there were only 300 copies remaining. This material was also uploaded to the EPO web site to be made more widely available (EPO 2007).

The Open University (UK) Round 1. The Open University undertook two rounds of scenario planning which were sponsored by the Vice Chancellor's Executive (VCE), overseen by the Pro Vice Chancellor for strategy and executed by the Planning Office. The first round of scenario planning was introduced to the organization by the new Vice Chancellor (VC) who, on her arrival in 2002, found an institution very internally orientated. She wished to orientate academics more to the important changes emerging in the external environment and involve them in the organization's strategic planning. As no scenario practitioners were known to the University, the VC suggested someone with whom she had worked with in her native South Africa. He subsequently met with the VCE and was hired. He designed and led a process that took approximately seven months in 2002.

The scenarios were published in the book *The OU Scenarios 2003-2012* and made available to all academics in early 2003. The material was also placed on the intranet where it was linked to a discussion site. To stimulate use of the scenarios across the University, full day meetings were held in all 40 academic and administrative units and sub-units during February and March 2003. These were facilitated by some of the scenario builders (who were administrative staff members) and human resources staff, and were aimed at exploring the threats and opportunities of each scenario for the individual units. In addition, the scenarios informed the development of *OU Futures 2004-2008* – ten strategic priorities that guided planning in the University.

The Open University (UK) Round 2. By 2005, there was a sense among the VCE and staff responsible for strategic planning that the first set of scenarios were becoming outdated, given the turbulent on-going changes in the university's external environment (e.g., government funding, advances in digital technological and additional competitors). A second round of scenario planning was thus conducted between April and October with its design reflecting learning's from the first round. A different (to the first round) external convenor was hired and, assisted by a colleague he designed and executed a process that widened out participation to particularly include the university's leaders. These convenors led the project, working with the Futures Office (previously the Planning Office) who provided management, research and administrative support.

The scenarios were not built in the same way as the first round or that of the EPO. Instead, four books were used to represent the worldviews of the emerging scenarios. From these, one and half pages of text per scenario were written and posted on the intranet. The scenarios were made available to all the Units for inclusion in their strategic planning processes as well as being used to formulate five business areas of operation and to revise *OU Futures* (the university's set of strategic directions).

Table II. Summary comparison of the cases

	EPO	**OU1**	**OU2**
Duration of the process	25 months	7 months	6 months
Convenor	1 external consultant employed internally for duration of project	1 external consultant	2 external consultants
Process designed and executed by facilitator	Yes	Yes	Yes
Sponsor	President	VC and VCE	VC and VCE

Data collection

Three data collection methods were used to allow for triangulation and bias correction: semi-structured interviews, electronic surveys, and a review of documentation.

Semi-structured interviews. 70 semi-structured interviews were undertaken lasting approximately 45-60 minutes between March 2009 and December 2010 with those involved in the scenario planning (35 from each case). Interviews were undertaken in person or over the phone depending on availability and location. Interviewees were categorized in each case into three groups: First, sponsors and those working in the core project teams; second and third were representatives from the two groups of the relationship being investigated. For the EPO, this included academics who had assisted with the development of the scenarios and key EPO staff who had been involved. In addition, I spoke with three academics who had not been directly involved in the scenario building but were using the scenarios in a variety of teaching and research capacities, and one person from a non-government organization who was able to comment on the project and the academic/EPO relationship. For the OU, I spoke with members of the Vice Chancellor's Executive (VCE) at the time of the scenario planning and with academics who had been involved in the scenario planning or were sufficiently close enough to the project to observe and comment.

Using a stratified purposeful sampling technique (Miles & Huberman 1994), interviewees were initially identified through discussions with contacts within the organizations with the aim of getting a diversity of perspectives from people sufficiently familiar with the work and who represented different: organizational positions; geographical areas; academic disciplines; and who participated in different parts of the scenario planning process. Not all those approached for an interview accepted (twelve out

of 47 in the EPO case and six out of 41 in the OU case). Of these, I did not hear from some while others felt they were not in a position to contribute. In addition, I used a snowballing sampling technique (Miles & Huberman 1994) during the interview process to gather other names for consideration. The process for actually contacting interviewees was different in the two cases. In the EPO case, I directly emailed potential interviewees outlining the research, providing the name of my EPO contact should they require further information, and inviting them to participate. In the case of the OU, an email went out from the head of the Futures Office advising of my research and explaining that I would soon be in touch to invite them to participate in an interview. In both cases, when interviewees responded I organized a time, and prior to the interview sent them a schedule providing details of the research, questions to guide our conversation, and seeking their consent to record the interview. [See appendix I for the interview protocol.]

Electronic surveys. To understand the impact of the scenario planning beyond those directly involved, two electronic surveys were undertaken of the wider communities (the academics). In the case of the intellectual property and patenting academic community, I emailed 290 invitations between March and October 2010 explaining the research and directing respondents to a web link. In response, 117 replies were received. Of those respondents 92% were not directly involved in the development of the scenarios. As there is no single global body representing academics working in the area of patenting and intellectual property, I used a number of techniques to generate a list of names. These included names at the back of the scenarios compendium; authors of journal publications (using SSRN, library databases, and Google Scholar); speakers and attendance lists of key conferences (e.g. the European Patenting and Intellectual Property (EPIP) meeting); and a snowballing technique within the survey itself to generate other names. Most respondents

were based in Europe (62%) followed by North America (27%) with the largest single occupation group being professors (33%).

In the case of The Open University, a similar invitation (to that of the EPO) was drafted, but this time it was distributed by the university to all (1068) academic staff. The survey was distributed in May 2010 and resulted in 209 responses. Respondents were evenly distributed across the faculties and the majority were lecturers (76%). 95% of respondents commenting on round one and 97% on round two were not directly involved in the development of the scenarios. [See appendix II and III for the survey design.]

Review of written documentation. This was undertaken for each case and included file notes, journal articles, internal communication documents, project reviews and invitation lists. One use of the documentation was to assemble a complete list of the 659 attendees for the 264 events related to the scenario planning in the cases so that a bi-partite affiliation network analysis (Wasserman & Faust 1994) could be undertaken to understand how the events in the work offered new social capital building opportunities.

Data analysis

Three forms of data analysis were undertaken to also facilitate triangulation and bias corrections.

Analysis of the interviews. The interviews were coded and analyzed using NVIVO software. This analysis was guided by pattern matching (Yin 2003) to enable rival explanations among the independent variables (aspects of the scenario planning) that were particularly important in understanding how the deployment of the work impacted the building of social capital in each case. [See appendix IV for an analysis of the categorical progression of the interview data.]

Analysis of the surveys. The results of the surveys for each case [see appendix V] were compiled. 104 (approximately 50%) respondents provided open ended comments in the OU case and 17 (approximately 14%) in the EPO case. These comments were included in the analysis and write up of the cases.

Bi-partite affiliation network analysis. The aim of this analysis was to understand the nature of the social capital network created through the scenario planning as a result of participants attending events (interviews and workshops). This was undertaken by first creating a bi-partite graph – where events were listed in one axis and individuals in the other. The number 1 was noted in the cell where that person attended the event and a 0 if they did not (Wasserman & Faust 1994). This graph was then used to create a bi-partite or uni-modal network which was converted into a network visualization using a forced algorithm. [See appendix VI for these visualizations.]

Respondent validation. After having completed the initial data analysis, I undertook informant feedback sessions (Bryant 2008). In the EPO, I met the senior manager responsible for the scenario planning at the time (the Chief Economist) as well as the convenor and in the OU case I met with the senior manager responsible for the work at the time (head of the Futures Office) as well five members of staff who had been scenario builders or worked in the planning office and thus had been close to both rounds of the work. In these meetings, I presented my findings and sought feedback on the accuracy of my interpretations.

Case and method comparisons. Finally, I analyzed the data initially within the cases (to gain a good understanding of the unique properties of each) and then compared what I had found across the cases to determine similarities and differences (Eisenhardt 1989). In addition, I looked for similarities and differences across the data sources (interviews,

surveys, and the network analysis) to maximize triangulation so that the data could be investigated from different perspectives – regarded as a useful technique in exploratory research (Glaser & Strauss, Eisenhardt and Sole & Edmondson (as cited in Swan et al. 2010).

FINDINGS

The findings of the research are divided into two sections. Given the suggestion in this paper that scenario planning builds social capital by being a process for creating cranes to the conceptual future from which the present can be reframed (Normann 2001), this first section discusses *how* scenario planning builds these cranes. The section is ordered by focusing first on the cognitive dimension of social capital and then the structural and relational dimensions. Second, an analysis is provided of *where* the cranes or scenario planning built new social capital in the case studies.

How scenario planning builds new social capital

Cognitive dimension (shared systems of meaning). Scenario planning provides a range of cognitive resources for building and operating the cranes. To use the conceptual future to better understand the present, new shared systems of meaning about that future need to be created. The research indicates that scenario planning builds the cognitive dimension of social capital in five ways.

First, scenario planning accepts the inherent uncertainty of the future and reflects this through different frames conceived as scenarios (van der Heijden 2005). Multiple frames or scenarios (usually three to four) means that a range of perspectives can be accommodated encouraging engagement from actors. The explicit consideration of

multiple frames triggers rather than closes down conversations – evident in both cases among those building the scenarios and actively using them. As an OU interviewee noted:

> *"…scenarios create a space where you just dispense with this idea that there's one future. There are a number of futures in the environment and that in turn creates a neutral space where people can enter into a conversation about how quick things happen and what might we do with that. You see? So inherently you must come up with a positive measure on social capital because once people start doing that, social capital goes up... that's just what follows scenarios is that space."*

Second, scenario planning involves exploration and storytelling to construct scenarios because the conceptual future is a situation which Brown et al. (2009:329) refer to as one where there is "a surfeit of information and a deficit of meaning". My research indicates that in the process of making meaning, language is created which helps structure the situation (Normann 2001) making it more comprehensible. For example, an academic in the EPO case noted:

> *"What I see as a big contribution of the study is that it provides a common language, common concepts, and essentially it's a starting point for communication, for speaking about future developments without getting lost in detail and uninformed speculation. So I really think it's supportive of communication in the Office, but also in the community. They* [the scenarios] *are anchors for whatever you want to discuss".*

In the OU case, the creation of new language was particularly evident among those creating the scenarios, members of the VCE and Deans. Interestingly, this extended to the language and concepts of the methodology as was evidenced in one of the OU interviews:

> *"It is now very familiar all over the university to say 'well we better think about some scenarios here, what would we do if'? So because we've been through those two exercises, it's quite a familiar methodology for us now and it allows us to think in ways I don't think we would have thought before. I think we're much more comfortable perhaps than we were ten years ago*

> *certainly with just running the world forward and asking how we perform in this or that sort of world".*

Third, the completed scenarios and related materials provide a set of shared narratives helping actors make sense of the range of possible futures. Two leading US academics described the EPO scenarios as *"remarkably prescient*" (Reichman & Dreyfuss 2007:106) and a number of interviewees commented on the value of compiling and publishing the interviews. As a result only 9% of academics responding to the survey and who knew the work felt that the scenarios had been unsuccessful in providing a common map of possible futures of the global patenting and intellectual property system.

In the OU1 round, among the scenario builders, the members of the VCE and some Council members as well as the Futures Office the scenarios did provide a set of shared narratives about future contexts the university could find itself in. However, for the wider academic staff, many regarded the scenarios as not well researched (the challenges of creating scenarios in an organization of experts when the expertise of those same experts is not drawn upon) and with names that did not easily resonate (e.g., Patchwork). In particular, there was a sense it was not clear how academics could effectively use the scenarios as one of the OU academic interviewees observed:

> *"It's not just that it* [the scenario planning] *didn't come with instructions, but there was no sense in which there was any contextualizing of it. So it might have been better if it had been translated into scenario planning for course proposals or scenario planning for budget setting or scenario planning for manpower planning. So it was scenario as a kind of abstract, this applies to everything…It doesn't work. But it does work at the moment at which I'm putting in a course proposal. So if there had been a workshop for this year's course proposals…"*

Consequently, 61% of survey respondents thought the scenarios had been unsuccessful in providing a common map of possible futures facing the OU, although this is likely to be

exacerbated by the timing of the scenario planning which was completed too late for use by Units in their annual planning cycle.

In the OU2 round, the scenarios were well understood and discussed within the governance groups, thereby providing these actors with a set of shared narratives about the future context of the university. However, for the wider academic audience, the scenarios were limited to publication on the Intranet which would have contributed to why 51% of academics surveyed thought the scenarios had been unsuccessful in providing a common map of possible futures facing the OU.

Fourth, the scenarios and the devices used to communicate them can act as a boundary object (Star & Griesemer 1989; Spee & Jarzabkowski 2009) to facilitate further discussion and action among actors – especially those not directly involved in their development. However, to play this role, the scenarios must be regarded as useful and thus of a good quality – as succinctly noted by an OU interviewee:

> *"If the products, if the outcome doesn't seem to touch you deeply, then you're not going to be impressed with it which means that the people that it came from notionally carry less capital for you. I mean if social capital grows through one group sharing something with another group that's of value, then the value is a key variable. You know, if I do something for you and it has no real meaning, then I haven't built much social capital there."*

In the case of the EPO, the scenarios have been used in many different external forums (e.g., journal articles, teaching, conferences, and meetings). This use was facilitated by the EPO compendium incorporating a number of deliberate design features. These included being able to be read by a 16 year old (this was significant as it was not uncommon for some experts to argue that the subject of patenting and intellectual property was too complex to be able to be presented to a lay person). Other design features included

having an emphasis on fact rather than story or narrative, so as to reflect the dominant communication style of the field, and to have as few words as possible given the very careful use of words in the patenting context. A non-English speaking interviewee also suggested that these characteristics made it excellent for non-English speakers. While for a few academics the compendium was regarded as a little *"too magaziney"* and by implication something lighter in substance and not adding a lot to what was not already known, most others regarded it as *"very complete"* containing nearly 600 footnotes and references. Consequently, 75% of survey respondents said they had used or planned to use the compendium in teaching, research, etc.

In the OU1 round, the scenarios were distributed in a booklet referred to by interviewees as 'the black book'. It was made up of systems diagrams, cartoons and the scenario stories. The aim of these different presentation formats was to cater for different audiences and learning styles – what was described by an interviewee as the provision of *"multiple ramps"* to the material. However, academics struggled with some of the features such as the cartoons which they regarded as not sufficiently serious. Thus, the scenarios and the book struggled as boundary objects with them – which was compounded by the fact that the completion of the scenario planning was too late for use in the development of faculty plans. (Synchronicity between the scenario planning and an internal strategic renewal program at the EPO was also missed representing a lost opportunity for the scenarios to act as a significant boundary object within the Office.)

In the second OU round, four books were used to reflect the worldviews of the scenarios taking shape. The use of books was aimed at catering for the more rigorous research demands of academics. This was an innovative idea providing a powerful boundary object for those whom they were given to. However, they were not distributed

more broadly with most academics relying on a one and half page text summary per scenario placed on the intranet. This summary was a less effective boundary object.

Fifth, scenario planning's focus on the conceptual future provides a 'safe' space from which actors can consider the changes that the turbulence may imply. The future is a safe space because it acts as a transitional object or space (Amado & Vansina 2005) between the changes that maybe needed between the present and the future. Safety is provided in scenario planning by it relocating mindfulness to the conceptual future which provides distance from current arrangements and concerns. This distance allows actors the space to 'play' and understand the implications that the turbulence implies, free of commitments to action. As one of the academic EPO interviewees noted:

> *"Scenarios I think are a way of talking about the future and thus enabling* [people] *to talk about the present in a different way – and about self-perceptions in a different way. And talking about problems in terms of challenges or in terms of future projections takes away a little bit of the, how do you say, acid? It's a way of talking in a more civilized way, maybe a more distant way about problems".*

In the EPO case, the nature of the debate in patenting and intellectual property had become very bipolar – with actors dividing broadly between those for and against a formal patent system. Alternatively, the scenario planning enabled a deeper and more nuanced discussion, with the interviews and multiple scenarios enabling different viewpoints to be considered in depth and held side by side. In the OU, working through future implications of the changing higher education context for the university was empowering for those most directly involved in the work. For those not so closely involved, the scenario planning raised in some actors a level of anxiety (the context is significantly changing and the university has to change too) that they were not able to constructively work through.

Structural dimension (patterns of connections). Building cranes to the conceptual future requires not only the creation of cognitive resources to aid communication and understanding but also the provision of interactive opportunities thereby building the structural dimension of social capital. The research indicates that scenario planning builds the structural dimension in three ways.

First, scenario planning provides an outreach mechanism, with those undertaking the work reaching out to a diverse constituency so as to better understand how things could develop in the future. In the EPO case, 101 external experts from patent offices, international organizations, firms, non-government organizations and think tanks - 31 were academics - were interviewed. In addition, 130 people (EPO staff, members from National Patent offices' and subject experts) were involved in workshops to develop the scenarios – six were academics.

In the OU1 case, a team of 23 - six were academics - representing a diagonal cut of levels and areas of the university were chosen to develop the scenarios in close consultation with eight VCE members. In addition, four external experts ('thought leaders') and four academics provided assistance to the scenario builders as they developed the scenarios. The work was also discussed at a Council meeting attended by 96 people - 24 were academics – and the consultant interviewed 35 formal and informal leaders - eight were academics - to gather information as part of developing the scenarios.

In the OU2 round, the convenors facilitated workshop discussions with seven VCE members and nine Deans (alone and together) and 125 university staff - 38 were academics. In addition, 54 people attended a Council workshop - eight were academics - to discuss the scenarios while the convenors interviewed 62 formal and informal opinion leaders - 22 were academics - within the university as well as 10 external specialists.

Beyond those directly involved in building the scenarios, the published scenarios represented another potential outreach mechanism for new social capital building. This was particularly evident in the EPO case. 31% of survey respondents (academics) said the scenario planning had facilitated new contacts for them helping them to access new information, to collaborate on projects now or in the future, and to appreciate common interests. In addition, the scenarios prompted many invitations for Office staff to come and speak in forums where previously the EPO had no presence (including to the Davos meeting of the World Economic Forum) providing further opportunities for building social capital. As one of the EPO interviewees noted:

> *"So as a visiting card it's* [the scenarios] *just unbelievable. I mean we could not afford to accept the invitations that we get...the number of invitations you get to be in certain things is totally disproportionate to what the Office could possibly do."*

In the OU case, the scenarios acting as an outreach mechanism were less obvious. Only 13% of academics in the OU1 round and 12% in the OU2 round (of those who responded to the survey) said that the scenario planning had facilitated new contacts for them. In the first round the finished scenarios were *"rolled out"* within academic units where staff would have been familiar with each other. Similarly in the second round, the large use of existing governance groups meant people were largely known to each other. The published scenario materials were also unable to trigger further social capital building with the first round output regarded as too abstract with academics not sure how to use them. In the second round, the scenarios were not physically distributed, but uploaded to the intranet thereby limiting their wider use. In both rounds, these factors limited the capacity of the scenarios to build social capital more widely.

Second, as the scenarios are developed and used, the scenario planning facilitates a number of interactive opportunities – interviews, workshops, seminars, conversations – for actors. It is through these interactive activities that the cranes are built and operated. Table III summarizes the number of participants and events involved in developing the scenarios in the cases.

Table III. Number of participants and events involved in developing the scenarios

	EPO	**OU1**	**OU2**
Total number of participants	245	124	290
Interviewees	115	35	72
Number of workshops	8	7	19

In the EPO, four workshops were held with staff and members of national patent offices to develop and assess the scenarios (one interviewed academic attended for one day in the second workshop); while four workshops were focused on writing each of the four scenarios - attended by EPO staff and external specialists (including five interviewed academics). In the OU1 round, five workshops were held with members of the VCE and the scenario builders to develop the scenarios; one workshop involved all the scenario builders in a plenary; and one workshop involved the Council members. In between these workshops the scenario builders met in teams of four as needed to build their particular scenario. In the OU2 round, nine workshops were held with staff from across the university (three specifically involved the academic units); while there were two workshops with Deans; one with Deans and members of the VCE, and five with the VCE alone. In addition, the scenario planning was discussed in two Council forums.

These workshops offered opportunities for participants to interact and learn together thereby building new social capital – especially where they had to meet on more than one occasion. However, the interviews also provided a potent forum for building new social capital. Most (all in the OU rounds) of the interviews were conducted by the convenors for a duration of about 60 minutes. The convenors were not known to most of the interviewees (in both the EPO and OU cases) providing them with significant social capital building opportunities. In the EPO case, where possible, staff members also undertook interviews (either with the convenor or alone) thus broadening-out opportunities to build new social capital (although because of concerns about confidentiality this did not include internal interviews which were conducted by the convenor alone).

Third, as scenario planning tends to be conducted in projects, the new social capital built is nascent and requires on-going mechanisms to sustain and further develop it beyond the project timeframe. That is, at the end of the scenario project, when the cranes are dismantled, there is a risk that the investment involved in building them is not realized. As such, the social capital benefits derived through the project risk being restricted to those directly involved. This led the OU to establish a forum to continue the "*strategic conversations*" started by the scenario planning (these continued between the OU1 and OU2 rounds and after OU2). At these forums, 40 to 50 participants, joined by an external presenter/s, met approximately four times a year for a half or full day at a time. Initially invited by the Vice Chancellor, participation was opened up after the first few years.

Such on-going mechanisms were not defined in the EPO – with the exception of the external invitations the Office received to present the work and the EPO joining with United Nations Environment Programme and the International Centre for Trade and Sustainable Development to undertake a climate change initiative (a direct outcome of the

scenario planning). A contributing factor as to whether it was appropriate for the Office to build on external conversations emerging from the scenario planning was whether it was within its mandate to do so (as compared to the European Commission for example). For many internal staff and some externals, the role of the Office is to process patents and attention should be restricted to clearing the backlog of applications. Without such on-going mechanisms however, the nascent social capital built through the EPO scenario planning could be lost.

Relational dimension (types of relationships). Building and using the cranes involves not only the creation of new cognitive resources and the provision of interactive forums, but also opportunities for relationships to develop. Scenario planning builds the relational dimension of social capital in three ways.

First, by focusing on the future, past grievances and current entrenched positions can be overcome increasing actors appreciation of their inter-dependencies. In the EPO case, the conceptual future provided the opportunity to play out the consequences of currently held views. For example, some stakeholders strongly argued for the abolishment of patents however when this was played out over the longer term in the scenarios, the full impact of this position was better appreciated. As an interview noted:

> *"There were some* [actors] *that were just so against patents that they didn't think about what would happen further. Then you put yourself in the future saying what would have happened. And then you come back and acknowledge it would actually mean another form of protection which would very probably resemble the patent system, that is, it would have some kind of exclusivity. So thinking it through to the end can make you think, well actually we could live with the system if you could change it in different ways".*

In the OU1 case, this appreciation of inter-dependencies was particularly evident between the VCE members and the scenario builders as noted by one of the VCE

interviewees: *"we got to know them and they got to know us quite well and their thinking and our thinking".* It was less evident between the VCE and the wider academic body, given academics had difficulty in engaging with the scenarios and VCE members were not involved in the 40 unit and sub-unit workshops where the scenarios were discussed.

In the OU2 round, the scenario planning provided valuable forums for the governance groups to realize their inter-dependencies, given prior relationships (particularly between the VCE and the Deans) had not always been smooth due to issues about the degree to which Deans should be involved in central university decision making. However, for the academic body, only a small number (as a proportion of all academics) were involved in building and using the scenarios thereby limiting the opportunities for inter-dependencies to be more fully appreciated.

Second, exploring the conceptual future can signal a willingness on the part of the sponsors to engage with stakeholders on a topic of importance which encourages the building of social capital (subject to other competing initiatives). In the case of the EPO, the scenario planning was conceptualized by many academics as part of a greater engagement by the Office with the external world (for example a Chief Economist was appointed at a similar time). As one of the academic interviewees noted:

> *"With the academic community I believe there's a vastly increased level of trust in institutions like the EPO. It is a virtue of the fact that the EPO opened itself up to this kind of...exercise. And I think academics see it as an indication that that kind of opening up is responsible."*

For both rounds of the OU process, for those directly involved in the work, it was a unique opportunity to work on an important topic – the future of the institution's context – with the senior management team (VCE). This provided significant social capital building opportunities, signalling a willingness by the VCE to engage with a wider number of

people in the strategic management of the organization. However, for the larger academic body, while the work flagged a desire by the VCE to engage staff more generally in strategic thinking, competing messages led to some confusion and doubt. For example, although the scenario planning represented a visionary, participative approach to thinking about doing things differently in the future, a number of VCE actions, such as those related to budgeting, seemed to mitigate this. As an OU interviewee noted:

> *"We had a sort of uncomfortable and rather blinkered view, for example, over the budget process at the same time and ended up doing some things around peoples' budgets that didn't look remotely visionary. So you're sending one set of messages – look, we're thinking about all these futures and we must be doing very different things, by the way could you just cut, you know. So actually we weren't coherent in terms of the messages we were sending."*

The third factor about how scenario planning builds relational social capital is the way in which the work is conducted. In the EPO case, the exploration of the content was carried out with limited restrictions from senior management. For example, a scenario contemplated the demise of the EPO, an honesty that was appreciated by external stakeholders. (Although some internal staff members were less enthusiastic, not understanding how any organization could criticize its' own products and wondering why such considerations were not left to policymakers who had the necessary mandate. Thus, what was regarded as openness by academics was not always so well received internally – or by the strong IP lobby.) This transparency and willingness to engage was reflected in the academics level of trust in the EPO. That is, 57% of survey respondents who knew the work said it had increased somewhat or significantly their trust in the EPO. For the remaining 43%, most said they previously trusted the EPO and the scenario planning had not changed this.

In the OU case, the engagement of a wider group in the strategic thinking of the organization - the 23 scenario builders in the OU1 round and the major governance groups in the OU2 round - helped build stronger levels of trust between these actors and the VCE. However, for the wider academic body, this was not the case – especially in the first round.

In this first round, the 'picking' of the scenario team by the VCE led to a sense of a lack of transparency about the process. This was compounded by the fact that the team included junior staff who some academics questioned whether they had the capacity to engage with high level strategic issues and to adequately develop relevant scenarios. My interviews also suggested these decreased levels of trust were impacted by the difficulty the academic community had in relating the scenarios to their work. The scenarios were developed about the contextual environment of the university and it was not immediately obvious how they could help academics, leading to questions about the judgement of the VCE as sponsors of the work.

As a result, the first round of the work adversely impacted trust levels – more so than the second. In both rounds only 7% of respondents who had a relationship with the VCE at the time said it had increased their levels of trust in all or some members of the Executive. Further, in the first round, 39% of respondents said it had decreased their levels of trust in the VCE as compared to 19% in the second round.

Where new social capital is built

The experience of the two cases discussed above indicates that creating and using the cranes in scenario planning results in the building of new social capital in some places rather than others. The work and interests of actors within the focal relationships of the research (the EPO and the academics working in patenting and intellectual property and the OU and its own academics) are diverse and not all people can be involved in the process.

Thus, it could be expected that the impact of scenario planning on the building of new social capital is varied - depending also on how the work sits with other concurrent initiatives.

Scholars have previously argued that social capital is more likely to be built around 'meaningful' issues or activities (e.g., Baker 2000, Cohen & Prusak 2001, Hanifan 2003, Kostova & Roth 2003). Meaningfulness provides the impetus for actors to engage with each other thereby maximizing the return of the social capital building effort over time. Scenario planning suggests three forms of 'meaningfulness' for building new social capital in the context of addressing turbulence; relevance, resonance and responsibility. Sample evidence of these three forms is summarized in Table IV [with the full list found in appendix VII].

Relevance refers to the degree to which the scenario planning is regarded as useful to an actor. Perceived usefulness provides the impetus for engaging with the work and its outputs, therefore creating the opportunity for building new social capital. Relevance subsequently means that the work needs to speak to current and important concerns and fill an unmet need. In addition, the work must be of a sufficiently high quality – thus adding value to actors. Where such relevance is not perceived (e.g., where the scenarios are regarded as too distant from their immediate work) actors are less likely to engage and thus opportunities for building new social capital are reduced.

Resonance refers to the degree to which the scenario planning as an initiative - and the way in which it is conducted – is acceptable to actors and their actions. Where there is a lack of congruence between the scenario planning and perceptions about its need or use or other related messages, actors are more likely to be wary about engaging (or disengage). An example can be found in the EPO case where some actors had reservations as to whether the work was in the mandate of the Office. Resonance means that attention needs

to be given to how to: frame the work; conduct it transparently and fairly, and ensure that surrounding managerial messages and actions are aligned with the intention of the work.

Responsibility refers to the degree to which actors are responsible for undertaking, and sponsoring the scenario planning and using the scenarios. The investment required to produce a successful outcome is a significant impetus for actors to deeply engage with the process that in turn builds social capital. This compares with those actors whose role in the work is more passive. The outcome is that the scenario planning significantly impacts the social capital built by the project team members, facilitators and key sponsors. However, responsibility for the outcome of the work is not an essential factor for determining where social capital is built. For example, if the outcomes of the work are perceived as relevant, it can still engage actors and aid in the building of new social capital, as was evidenced in the EPO case.

Table IV. Examples from the cases of where scenario planning did and didn't build new social capital

	EPO	**OU1**	**OU2**
		Relevance	
New social capital built	Academics (especially those with a more critical perspective of the patenting system) who found the materials useful for teaching, research and policy advice	VCE, Council members and the Planning Office who built and used the scenarios in strategy deliberations	Key governance groups (VCE, Deans, Sub-Deans, Council members) who developed and used the scenarios in strategic planning
No new social capital built	The legal community and traditional IP scholars who already had links with the Office and were embedded in traditional ways of thinking	Academics who struggled to see the connection of the scenarios with their work	Academics who struggled to see the connection of the scenarios with their work
		Resonance	
New social	Those academics with less prior engagement with the	Project team members, VCE and Council	Wider governance groups (e.g. Deans)

	EPO	OU1	OU2
capital built	EPO, who regarded the project as fair (with the Office taking on critical perspectives) and more evidence of the Office opening up	members as well as academics with an interest (and in many cases responsibility) in strategic as compared to operational planning	who were more significantly involved in the process (as compared to the OU1 round)
No new social capital built	Academics and EPO staff who felt it was not the mission of the Office to undertake such a study	Academics (e.g. in economics, politics, etc.) who were not consulted during the production of the scenarios and doubted the research on which the scenarios were based	Academics for whom what was intended with the scenarios did not fit with competing messages from the VCE
		Responsibility	
New social capital built	The facilitator, project team, key Office sponsors and academics who were responsible for producing and publishing the work	The facilitator, project team, VCE members, and Planning Office staff who had responsibility for producing and disseminating the work	The facilitator, VCE members, Planning Office staff, Deans responsible for producing, disseminating and using the scenarios
No new social capital built	Those EPO staff not involved in the project or using the scenarios	Deans and academics in the faculties who experienced the scenarios as a 'roll out'	Those academics not involved directly in the project or using the scenarios

Scenario planning builds new social capital to the degree it resonates as a body of work for a group of actors and is relevant to their needs or actions. For those responsible for producing or using the outcomes of the work, there is an added impetus for engaging deeply which further enhances the building of social capital.

Summary of the findings

By engaging with the conceptual future through building and using the cranes, scenario planning is able to build new social capital - as Galer (2004) and Kahane (2004) suggested. The research provides a detailed understanding of how this occurs, thus providing a scholarly explanation for their practice-based observations.

In particular, the research shows that scenario planning brings in a diversity of actors (the structural dimension) and provides them with an opportunity to appreciate their emerging interdependencies and build trust (the relational dimension). However, it is the range of cognitive resources that scenario planning provides for building new shared systems of meaning (the cognitive dimension) among actors that is significant: new framings; new language; new shared narratives; new shared boundary objects and a common, new transitional space. In fact, the research suggests that in both cases the scenario planning was a direct investment in building new shared systems of meaning so as to better understand the nature of the turbulence. Using scenario planning for sensemaking (Weick 1995) - to make new sense of the turbulent conditions – resulted in the structural and relational dimensions forming as by-products.

The research also shows that the impact of creating and using the cranes through scenario planning does not have a uniform impact on the building of new social capital. The new social capital that is built depends on the degree to which the work is regarded as relevant and resonates with actors - and the degree of responsibility they have for developing and/or using the scenarios. This generally means that the impact is greatest for those more directly involved. Beyond, the impact is more mixed - dependent on factors such as actors perceived need for the work (the 'vacuum' it fills), the quality of the

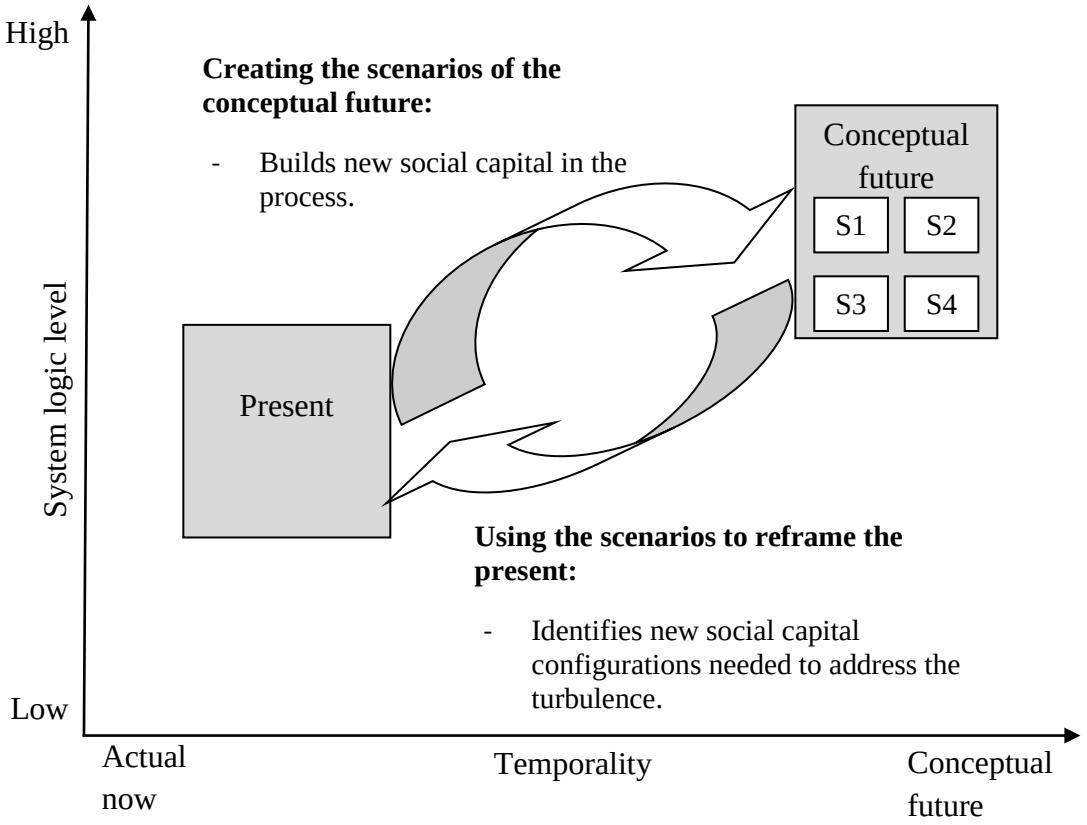
scenarios and the research done to produce them, the uses to which the scenarios are put, and the congruency of surrounding messages.

DISCUSSION AND CONCLUSION

The empirical evidence highlights the importance of the conceptual future and the cognitive dimension in building new social capital afforded by the cranes. This is because the reconfiguration of an organization's social capital relies on a mental reframing of the situation (Normann 2001). The present is characterized by established mental maps that are hard to escape without purposeful building processes that enable it to be conceptually transcended. Normann (2001:182) used the metaphor of building a "crane" to describe how organizations could purposefully design a mechanism that would transport actors to a different conceptual viewpoint whereby they could reframe the present.

Normann's crane provides an apt way of describing how scenario planning overcomes issues of structural, relational and cognitive lock-in to build new social capital – illustrated in Figure I. That is, scenario planning provides a structured learning process for a variety of actors to appreciate actual or potential turbulence and its consequences (Ramirez et al. 2010). The hooks of the cranes enable actors to lower themselves into the scenarios and by backtracking to the present, to identify new social configurations needed to address the turbulence.

Figure I. Scenario planning as building cranes to the conceptual future



This understanding of how scenario planning builds social capital sheds light on gaps in the literature, namely when leading the building of new social capital with the cognitive dimension might be most relevant; and what factors are important for deploying scenario planning to speed up the building of new social capital.

Leading the building of new social capital with the cognitive dimension

The focus on the cranes and learning with the conceptual future foregrounds when the building of new social capital might best be led with the cognitive dimension. The research suggests that in situations where there is a premium on new sensemaking (Weick 1995) – such as making new sense of turbulence - scenario planning can represent a direct investment in building the cognitive dimension of social capital. The need for sensemaking is activated when the current understanding of a situation diverges from what is expected

(i.e., the context is starting to behave differently to expectations). Subsequently, sensemaking involves "turning circumstances into a situation that is comprehended explicitly in words and that serves as a springboard into action" (Weick et al. 2005:409).

Scenario planning is a form of prospective sensemaking (Wright 2005) where the hook of the crane lowers actors into the new context (scenario) enabling them to track back to the present to see it in a new light. Sensemaking is a retrospective activity because it is only once events have passed that we are able to step back and assess what has occurred – to make sense (Weick et al. 2005). The use of the crane suggests that prospective sensemaking can occur with scenarios because it enables the present to be retrospectively viewed from the conceptual future.

The importance of the cognitive dimension for building social capital in situations where there is a premium on sensemaking does not mean the other two dimensions are redundant. Nahapiet and Ghoshal (1998) have clearly shown how the three dimensions are inter-dependent and my research supports this position. For example, the introduction of new actors into a situation (the structural dimension) introduces new logics (the cognitive dimension) and leads to the development of new relationships (the relational dimension).

However, my research also shows the value of scenario planning for directly investing in building the cognitive dimension of social capital leading to the structural and relational dimensions emerging as by-products. By being able to directly invest in the cognitive dimension, my research suggests new social capital can be built more quickly than the decades or centuries Putnam (1993) or generations Emery and Trist (1965) suggested were needed.

Why this might be so is explained within the context of high impact leverage points for intervening in a system (Meadows 1999). Meadows proposed 12 such points with the

two most effective (in ascending order) being: 2) the mindset or paradigm out of which the system – its goals, structure, rules, delays, parameters – arises; and 1) the power to transcend paradigms. "Paradigms are the sources of systems" such that the configuration of a system reflects a dominant mindset which is taken for granted and regarded as "common sense" (Meadows 1999:18). She argued that the most powerful way of bringing about systemic change was for actors to be able to acknowledge other equally possible paradigms or worldviews and work towards transcending the dominant one/s. She also indicated that "there's nothing necessarily ...slow" about this process (Meadows 1999:18).

Scenario planning is a process that employs multiple worldviews to reframe the actual situation or to transcend dominant paradigms for those commissioning the work. Scenario planning thus intervenes at the place where Meadows (1999) suggested powerful change is most easily possible and potentially the quickest. This is how the work can speed up the building of new social capital.

Deploying scenarios to build new social capital

The research identifies four contingencies impacting scenario planning's capacity to build cranes to the conceptual future to accelerate the building of new social capital in the context of perceived or potential turbulence.

The first is a need to focus attention on key leverage points and actors that can amplify the impact of the social capital building. As the impact of scenario planning on the building of new social capital is not uniform - deciding who to involve, and how, is critical. Kilduff et al. (2006:1032) viewed organizational networks as complex adaptive systems where "small investments in social ties can produce large returns to social capital". Ways of thinking about this include understanding where innovation in a system is located and where key decisions are made that impact on the future direction of the organization. For

example, in the case of The Open University, the institution's core business is the development and delivery of courses to cater for its 250,000 students. Thus, using the scenario process, or at least the scenarios with those involved in developing new course proposals, could have been a way of amplifying and speeding up the social capital necessary to help position the organization for the future. This link was missed in both rounds.

Second, the finding that those most directly involved in the work are more likely to build new social capital is a reflection of the type of learning process that scenario planning offers. Vygotsky (1978:86) described how for people the development process lags behind the learning process resulting in what he termed "zones of proximal development". These zones represent "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers". Scenario planning is a form of 'collaboration with capable peers' that if done well can offer a significant new learning opportunity for those directly involved. As the participants in scenario planning work through the uncertainty caused by the turbulence, their effort is rewarded with the creation of new systems of meaning and new, quality relationships.

How collaborative learning bridges the zone of proximal development explains why those less involved in scenario planning processes struggle to get the same benefits from them. By not participating directly, they are not offered the same degree of support the cranes offer - or alternatively, they have already reached higher levels of development that makes the scenarios and the cranes superfluous.

To increase the effectiveness of the cranes for those not directly involved, translation (Czarniawska & Joerges 1996; Latour 2005) rather than diffusion (Rogers 2003) needs to be emphasized in scenario planning. Whereas with diffusion the focus is on communication, with translation, the focus is on engagement or what Bruner (1986:127) referred to as "discovery learning". With such learning, people climb the ladder of the cranes for themselves (through a social process of sharing and negotiating) and so use the scenarios to create meaning in their own specific contexts. To promote translation, the value of the content, the design features of the materials, and the minimization of competing messages need to be carefully attended to so that they are aligned with the "purpose at hand" (Schutz as quoted in Czarniawska and Joerges 1996:28) of end users. In this regard, the EPO compendium worked better than the OU materials in being purposeful for the uses to which many academics could put them.

Third, is to consider the best way to frame the scenario planning – the building of the cranes - so that it encourages rather than discourages the creation of new social capital. Signalling that turbulence represents a crisis can disrupt the normal flow of things making the taken-for-granted problematic, thereby encouraging learning (Barton & Sutcliffe 2009; Christianson et al. 2008). This may be a good strategy where complacency is endemic and needs to be unsettled. The downside of this approach is that those who are innovating and engaging with change can feel ignored or think that the scenario planning will offer them very little. Others can feel apprehensive or disengaged if they are not provided with an opportunity to understand the potential or actual crisis.

Alternatively, the scenario planning can be presented as an opportunity to build on the positives within the organization (Cooperrider & Srivastva 1987; Pascale et al. 2010) or make the core ideology (Collins & Porras 2005) more robust for future circumstances.

This would seem to be a particularly helpful approach where the mission of the organization is strong and unifying as it can be positively leveraged. For example, in The Open University, staff members are committed to the mission (providing the opportunity for anybody to access higher education who wants to), which in their minds provides a clear rationale for the existence of the OU and the focus of subsequent strategies. To build on this strength, the scenario planning could have been framed as a process for better understanding the turbulence so the organization could continue to deliver its mission successfully into the future. In this way, the dominant paradigm or worldview could have been more gently re-perceived (Wack 1985).

Fourth, to overcome the dynamic conservatism (Schon 1971) of existing configurations of social capital, the limits of scenario planning must be acknowledged and addressed. As the work is usually undertaken as a project – the new social capital built is nascent and requires further processes to sustain it. Without these, the investment in the cranes will not be fully realized and the social capital benefits resulting from the work lost – with even the risk of backlash if something is started and not seen to be followed through. Bourdieu (1985:249) argued that social capital is not a natural or social given and must be achieved through "endless effort at institution". Without such ongoing efforts to sustain newly built relations, they will fade away or remain as weak, sporadic, and historical individual contacts. This risk was identified in the EPO case where concerns over mandate and workload within the Office threaten the development of ongoing mechanisms for capitalizing on the new social capital built.

Conclusion

The research has shown that scenario planning can be directly deployed to build social capital to address turbulence. This is especially the case for those actors who find

the scenario planning relevant and for whom the work resonates, as well as for those who have responsibility for developing and/or using the scenarios.

By using the metaphor of the 'crane', scenario planning is able to transfer mindfulness to the vantage point of the conceptual future to help make sense of turbulence – prospective sensemaking (Wright 2005). With the focus on sensemaking, the cognitive dimension of social capital is foregrounded and can be leveraged, resulting in the relational and structural dimensions being created as by-products. Scenario planning thus represents a direct investment in creating cognitive social capital resources suggesting that new social capital can be built more quickly than Putnam (1965) and Emery and Trist (1965) indicated.

These findings demonstrate the value of scenario planning for enabling an organization to build new social capital in the face of turbulence. In doing so, the research, contributes to addressing the 'dearth of research' about how organizations can build and re-configure their social capital to cope with changing strategic circumstances (Maurer & Ebers 2006).

However, the research is not without limitations. This is an exploratory study limited to two organizations in the public sector and while generalizability has been enhanced through linking the findings to theoretical concepts (Eisenhardt 1989), further empirical work in other settings would strengthen it. The research also raises the question about how scenario planning differs from other conversational processes that invoke the future such as search conferences, visioning, Delphi, etc, in building new social capital. Understanding such differences would provide further insight into how to best use the conceptual future for building new social capital.

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APPENDICES

Appendix I. Sample interview protocol

The Open University Case – Interview guide

Thesis title: Building social capital with scenario work

1. Introduction to the research

Thank you for your time and for agreeing to participate in my doctoral research which is supervised by Dr Rafael Ramirez at the SAID Business School, University of Oxford. The intent of my research is to understand whether scenario work can build social capital and if so, how? This research is being conducted through a comparative analysis of scenario work undertaken by The Open University; the European Patent Office (EPO); and the Singapore Government (Strategic Policy Office).

Social capital[2] refers to the networks of relationships among people and groups and the resources that become available as a result of these relationships. Its benefits can include: the flow of information (Lin 2001, Adler & Kwon 2002; Sandefur & Laumann 1998); an increasing solidarity or development of common interests among individuals and groups (Sandefur & Laumann 1998); the creation of strategic opportunities – real options (Nahapiet 2009); opportunities for collective action (Adler & Kwon 2002); and influencing network members and available resources (Lin 2001; Adler & Kwon 2002).

The significance of the research is that social capital is a valuable component of strategic management – facilitating information sharing and collaboration. However, building and maintaining it is not easy – requiring considerable foresight, time, effort and cost (Lin 2001). Despite this, there is anecdotal evidence that suggests scenario work may contribute to the development of social capital especially in the context of changing strategic circumstances. Thus, the aim of the research is to understand whether this is the case, to contribute to the 'dearth' of research on how organisations can adapt their social capital in the context of changing circumstances (Maurer & Ebers 2006) and whether the accumulation of social capital can be sped up.

In the case of The Open University, I am researching how the University's scenario work (the development and use of the scenarios) may have contributed to the building of social capital (or not) between the Vice Chancellor's Executive (the sponsors of the work) and the wider academic community.

[2] Social capital is defined as: "*the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network"* (Nahapiet and Ghoshal 1998:243).

By 'The Open University scenario work' I am referring to all the activities related to: setting up, designing and managing the scenario work; building the scenarios; and using them in strategic conversations and the development of strategic priorities, etc. There were two rounds of scenario work. The first round resulted in set of scenarios developed in 2002 and published under the title *"The Open University Scenarios 2003-2012"*. They were used to generate a strategic discussion in the University and to develop strategic priorities for the period 2004-2008. A second set of scenarios was developed in 2005-06 which was widely discussed in the University alongside four strategic options (downsizing; maintain and improve; international growth; and distributed global university of the internet).

In terms of ethics – my research design has been approved by the ethics body of the University of Oxford. There are two key points I would like to bring to your attention to in relation to this:

1. I would like to seek your permission to record our conversation. This is purely to enable me to focus on our conversation (rather than being preoccupied capturing notes) and so that I can work with the notes afterwards. Please be assured that these files will be stored securely. Is this acceptable?

2. Please also be assured of confidentiality. That is, no comment will be attributed to any individual in the write up of the research.

Before I start the interview, do you have any questions in relation to me or the research?

2. Questions:

The semi-structured questions that I would like to use to guide our conversation are listed below.

1. Can you please describe for me your involvement in The Open University's scenario work?

2. How did the scenario work differ (if it did) from previous University strategy processes involving academics?

3. Are you aware of the scenario work creating any new links (or strengthening weak ones) – either between members of the Vice Chancellor's Executive and the academic community or among academics themselves? If so, can you provide an example?

4. Do you think the scenario work has contributed to *greater* or *lesser* levels of trust (or *made no difference*) between members of the Vice Chancellor's Executive and the academic community? How is this important?

5. Do you feel the scenario work has developed a greater sense of shared identity between members of the Vice Chancellor's Executive and the academic community in relation to addressing strategic directions for The University? Can you please explain?

6. Turning to the language and content of the scenario work, how effective do you feel they were in enabling the Vice Chancellor's Executive and the academic community frame and discuss future strategic issues facing the University? Can you please explain?

7. Do you think the scenario work has accelerated the building of social capital between the Vice Chancellor's Executive and the academic community; slowed the process of building social capital; or has it made no difference?

8. If you feel that the building of social capital between the Vice Chancellor's Executive and the academic community has been accelerated, what have been the major benefits of this?

9. What other processes or initiatives being carried out alongside the scenario work could also have influenced (positively or negatively) the building of relationships between the Vice Chancellor's Executive and the academic community?

10. In terms of building social capital, do you feel there are limitations to scenario work? If so, can you indicate what these limitations are?

11. That is all from me…is there anything else that you feel is important that we have not covered in our conversation?

Thank you.

Appendix II. Sample email sent to academic interviewees inviting them to participate in the survey.

From: Trudi Lang [trudi.lang@sbs.ox.ac.uk]
Sent: Saturday, April 10, 2010 7:16 AM
To:
Subject: Survey invitation: EPO case study

Dear Professor

I am writing to you in relation to a survey I am conducting on the European Patent Office (EPO) Scenarios for the Future project. Might I ask 5 minutes of your research time to complete this short survey?

Survey link: http://www.surveymonkey.com/s/227HHJD

Your participation will assist me to first understand the reach of the EPO Scenarios for the Future project among academics working in the areas of patenting and intellectual property. Thus, knowing of the project is not a requirement to complete the survey. Second, for those aware of the project, the survey will help me understand whether it has impacted their relationship with the EPO.

My name is Trudi Lang and I am a doctoral student at SAID Business School, University of Oxford. My thesis is supervised by Dr Rafael Ramirez and is exploring the links between the building of social capital and scenario projects. One of my case studies is the scenario project undertaken by the European Patent Office (EPO). Access to study the project has been granted by the Office.

If you require further details of the research, please see below, or feel free to contact me.

Thank you in advance.

Sincerely yours,

Trudi Lang
DPhil Candidate
SAID Business School and Institute for Science, Innovation and Society University of Oxford Park End Street Oxford OX1 1HP
trudi.lang@sbs.ox.ac.uk<mailto:trudi.lang@sbs.ox.ac.uk>

Further information about the research:

The intent of this research is to understand whether scenario projects can build social capital and if so, how? This research is being conducted through a comparative analysis of scenario work undertaken in the European Patent Office (EPO), the Singapore Government (Strategic Policy Office) and The Open University (UK).

Social capital refers to the networks of connections among people and organizations and the resources that become available as a result of these connections[1].

The benefits of social capital are said to include: the flow of information (Lin 2001, Adler & Kwon 2002; Sandefur & Laumann 1998); an increasing solidarity or development of common interests among individuals and groups (Sandefur & Laumann 1998); the creation of strategic opportunities – real options (Nahapiet 2009); opportunities for collective action (Adler & Kwon 2002); and influencing network members and available resources (Lin 2001; Adler & Kwon 2002).

The significance of the research is that organizations may need to reconfigure their social capital as strategic circumstances change. However, building social capital is not easy – it can take considerable foresight, time, effort and cost. Yet, there is anecdotal evidence that scenario projects may begin to facilitate the creation of social capital and open up new opportunities for various forms of information sharing and collaboration. Thus, the aim of the research is to understand whether this is the case and whether scenario projects can also speed up the formation of this type of capital.

The focus of this particular case study is to understand if the EPO scenario project has contributed to building social capital between the Office and the academic community involved in patenting and intellectual property. To undertake the research, interviews are being conducted with selected senior members of the EPO and the academic community able to comment on the project. In addition, a survey is being conducted with the academic community to assess the wider impact (if any) of the project. Access to study the EPO scenario project has been granted by the Office.

By the EPO scenario project I am referring to all the activities related to: setting up and managing the project; designing the process; building the scenarios; and launching and using them.

[1] Social capital is defined as: "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network" (Nahapiet and Ghoshal 1998:243).

Appendix III. Sample of the electronic survey

Thank you for agreeing to participate in this short survey. Your answers will remain completely anonymous.

The purpose of the survey is to understand the reach and impact of the European Patent Office (EPO) "Scenarios for the Future" project (see image above) among members of the academic community in patenting and intellectual property.

The EPO interviewed over 100 'experts' external to the Office and developed four scenarios about the future of the global patenting and intellectual property system (image above). These scenarios were Market Rules; Whose Game?; Trees of Knowledge; and Blue Skies. The scenarios were launched in 2007 and were the output of the EPO Scenarios for the Future project (see image above). Further information can be accessed at: http://www.epo.org/topics/patent-system/scenarios-for-the-future.html.

The data from the survey will be used in my doctoral research (supervised by Dr Rafael Ramirez, SAID Business School, University of Oxford). The research is supported by the EPO (although this support is not financial).

Trudi Lang
Doctoral Candidate
SAID Business School and Institute for Science, Innovation and Society
University of Oxford
trudi.lang@sbs.ox.ac.uk

1. Please describe what contact you have with the EPO in 2009-2010? Please tick all those that apply.

- [ ] I have had no contact since 1 January 2009
- [ ] I am on an email or mailing list
- [ ] I hear presentations (such as at conferences) from time to time by EPO staff
- [ ] I access the EPO for data related to my research and/or teaching
- [ ] I provide advice to the EPO
- [ ] I am involved in a patent application
- [ ] Other (please specify)

2. Do you hold a patent?

- ○ No
- ○ Yes

3. Are you aware of the EPO Scenarios for the Future? Please tick one.

- ○ No, not aware of them and no interest in learning about them
- ○ No, not aware of them but am interested in learning about them
- ○ Yes I am aware of them

4. How did you learn about the EPO Scenarios? Please tick all those that apply.

- ☐ I was involved in the development of the scenarios (e.g. interviewed; consulted; attended a workshop, etc)
- ☐ I heard a conference presentation on the scenarios
- ☐ I read about the project
- ☐ I heard about the project from colleagues
- ☐ I acquired a copy of the written compendium
- ☐ I visited the webpage
- ☐ Other (please specify)

5. Do you plan to, or do you already refer to, the EPO Scenarios in teaching, research or other activities? Please tick all those that apply.

- ☐ No
- ☐ Yes, in teaching
- ☐ Yes, in research (writing of journal articles or books)
- ☐ Yes, in meetings or other discussion forums
- ☐ Yes, in consultancy or other situations where I am asked for written advice
- ☐ Other (please specify)

6. Did the EPO Scenarios for the Future project result in you making any new contacts (that is people you have since been in touch with or who you feel you could get in touch with in the future)? Please tick all those that apply.

- ☐ No, it has not facilitated any new contacts
- ☐ Yes, with staff members of the EPO
- ☐ Yes, with other academics
- ☐ Yes with others (please specify)

7. Approximately how many new contacts did you make? Please tick one.

- 1-5
- 5-10
- >10

8. What has been the outcome of these new contacts? Please tick all those that apply.

- No significant outcomes have resulted
- Access to new information
- Opportunity to collaborate now or possibly in the future
- Appreciation of common interests
- Other (please specify)

9. Would those contacts have been made if the EPO Scenarios project had not existed? Please choose one.

- Yes
- Maybe
- No

10. Has the EPO Scenarios project contributed to building your trust in the EPO? Please choose one.

- No
- Yes, somewhat
- Yes, significantly

11. If you said no is this because:

- You didn't trust the EPO and the scenarios didn't change this?
- You already trusted the EPO and the scenarios didn't change this?

12. Do you think of your professional identity as distinct from the EPO or part of a larger collective that includes the EPO? Please place yourself on the following scale.

	Distinct from the EPO				Part of a larger collective that includes the EPO
I think of my professional identity as more:	Do you think of your professional identity as distinct from the EPO or part of a larger collective that includes the EPO? Please place yourself on the following scale.				

13. In terms of where you placed yourself on the scale above, did the EPO Scenarios influence this decision?

No

Yes, it contributed to me seeing my professional identity as more distinct from the EPO

Yes, it contributed to me seeing my professional identity as more part of something larger that includes the EPO

14. In your opinion, to what extent have the EPO Scenarios been successful in making a common map of possible futures of the global patenting and intellectual property system?

- Very unsuccessful
- Unsuccessful
- Neither unsuccessful or successful
- Successful
- Very successful

15. Which area of the University are you affiliated with (please tick all those that apply)?

- [ ] Law
- [ ] Business
- [ ] Public Policy
- [ ] Social Sciences
- [ ] Humanities
- [ ] Science
- [ ] Engineering
- [ ] Medicine
- [ ] Other (please specify)

16. What level are you employed at?

- ○ Emeritus professor
- ○ Professor
- ○ Associate professor
- ○ Assistant professor
- ○ Lecturer (or equivalent)
- ○ Assistant lecturer
- ○ Research officer
- ○ Post doctoral scholar
- ○ Other (please specify)

17. In what region are you located?

- Europe
- North America
- South America
- Africa
- Asia
- Oceania
- Other (please specify)

18. Given the dispersed nature of the academic community in patenting and intellectual property, I am using a snowball technique for sampling. Could I therefore ask you to either:
1. Forward the survey web link (contained in my email) to people you think would be willing to complete it; or
2. Provide me with the names (and email addresses if possible) of three people to whom I could send the link. These details will only be used to forward details to access the survey and will be destroyed at the end of the research.
(Please note respondents don't have to be aware of the EPO scenarios.)

1.
2.
3.

19. Finally, do you have any comments you would like to make regarding the reach and impact of the EPO Scenarios project among patenting and intellectual property academics?

Appendix IV. Categorical analysis from the interviews about h*ow* scenario planning builds new social capital

Case	Preliminary concepts	Aggregate themes	Overarching categories
EPO	Incorporating the range of perspectives on the future of the patent system and presenting them side by side as equally plausible scenarios	**C1. Scenario planning providing an alternative framing device**	Building the **COGNITIVE** dimension of social capital
OU1	Introducing the idea of alternative futures – scenarios reflecting different worldviews		
OU2	Scenarios as alternative futures of the context to strengthen the choice of strategic options		
EPO	The scenario process provided a common language to talk about issues	**C2. Scenario planning providing new/shared language**	
	The names of the scenarios (colors) acted as a shorthand for communications with some actors		
OU1	The project introduced a common language to structure discussions		
	This new language extended to ‘scenarios’ and 'alternative futures’ providing a way to talk about the external environment		
	The names of the scenarios acted as a shorthand within key strategy groups		
OU2	The book titles were regarded as less effective scenario titles than custom built ones (especially for those not directly involved in the creation of the scenarios)		
	The scenarios provided a shared language among actors in key governance groups		

Case	Preliminary concepts	Aggregate themes	Overarching categories
EPO	The compilation of the interviews and the scenarios provided a set of shared stories for actors about the future of the patenting system		
OU1	The scenarios provided a set of shared stories about possible futures for those most closely involved in developing and working with them. The wider academic community on the whole found them too abstract	⇨ **C3. Scenario planning providing shared narratives**	
OU2	The scenarios provided a set of shared stories about possible futures among the governance groups but by being only posted on the intranet they weren't widely used by the academics		
			➡ Building the **COGNITIVE** dimension of social capital
EPO	Use of the scenarios in teaching, research, presentations, workshops, etc. provided a mechanism for different groups to discuss the future legitimacy of the global patent system		
OU1	A 'black' book of the scenario planning outcomes was distributed that many academic staff felt was not sufficiently serious. The scenarios were also regarded as too far removed from the work of most academic staff and came with no guidance about how to use them	⇨ **C4. Scenarios (and related materials) acting as boundary objects**	
OU2	Books were used for the scenarios to increase their academic respectability. However, most academic staff had to rely on a brief document on the intranet which limited the role the scenarios played as a boundary object		

Case	Preliminary concepts	Aggregate themes	Overarching categories
EPO	By providing the space to move beyond a binary patent, no patent discussion to presenting the range of perspectives on the future of the patent system (multiple scenarios), people were engaged in more nuanced conversations and considerations than they might otherwise have had		
OU1	For those closely involved with developing and using the scenarios (VCE and project team in particular), the process was 'optimistic' energizing participants by looking at the future and doing things differently. However, for the wider academic community, the scenario planning did not provide such a space	**C5. The scenarios process providing a transitional space**	Building the **COGNITIVE** dimension of social capital
OU2	For those closely involved with developing and using the scenarios (key governance groups), the process was 'optimistic' enabling strategic options to be considered and tested with the scenarios ahead of a commitment being needed. However, as the process did not significantly involve the wider academic community, it did not provide such a safe space for them		

Case	Preliminary concepts	Aggregate themes	Overarching categories
EPO	Interviews and workshops provided an opportunity to link with new actors. Invitations received to present the scenarios in new external fora – opened up opportunities to build new links	**Scenario planning as an outreach mechanism**	Building the **STRUCTURAL** dimension of social capital
OU1	Opportunity to 'pick' a diversified project team from across different functional areas and levels of responsibility		
OU2	Opportunity to involve the key governance groups in discussions (through interviewees and workshops) in the strategic management of the organization		
EPO	Interviews and workshops provided opportunities for actors from different backgrounds to interact and work together	**Scenario planning providing interaction opportunities**	
OU1	Project team split into four sub-groups to work on a scenario with members of the VCE. Met on multiple occasions		
OU2	Multiple workshops with governance groups and some cross group meetings (e.g. VCE members and Deans; academic units)		
EPO	Links developed through the scenario work could dissipate without development of other interaction channels beyond the project	**Consequences of scenario planning as a project**	
OU1	Limited involvement of wider academic staff. Strategic Forums introduced to continue the building of new links beyond the project		
OU2	Strategic Forums continued offering the opportunity to build relationships beyond the project		

Case	Preliminary concepts	Aggregate themes	Overarching categories
EPO	Reaching out to a wide number of actors highlighted their perceived value. By projecting themselves into the future, actors could also move beyond entrenched individual positions.		
OU1	The scenario planning was introduced by the Vice Chancellor to raise awareness among all staff of changes in the context and to involve them in the institution's strategic planning. With the scenario builders and the VCE members working together, their inter-dependencies could be appreciated. This was less obvious between the VCE and the wider academic community due to the difficulty the academics had engaging with the scenarios and the absence of the VCE in the discussions of the scenarios at the unit and sub-unit levels.	**Focusing on the future provides the opportunity for inter-dependencies to be appreciated through scenario planning**	Building the **RELATIONAL** dimension of social capital
OU2	The scenario planning was undertaken again thus raising awareness especially among key governance groups of changes in the context and the need to work together.		

Case	Preliminary concepts	Aggregate themes	Overarching categories
EPO	Opening up the institution through the scenario planning		
OU1	The project signalled a desire to engage more staff in the strategic thinking of the organization. However, other messages (about budgeting, spending money on the book, etc) coming from the VCE contradicted the message signalled by the scenario planning	**Scenario planning signalling a willingness of key decision makers to engage on a topic of importance**	
OU2	Actively included all the key governance groups		
EPO	Project supported by senior management signalling its importance and having all voices (including critics) reflected in the work thereby validating and legitimizing the range of viewpoints	**Conducting the scenario planning project inclusively, transparently and with respect impacts the building of relationships**	Building the **RELATIONAL** dimension of social capital
OU1	For those involved in the project team, the close working together to produce an outcome for the VCE and university created high levels of trust and shared interests The lack of academics consulted as subject experts and the 'picking' of a team excluded the majority of academics – leading to questions of transparency and legitimacy		
OU2	Engaging members of the key governance groups in the work and actively seeking their views and participation was regarded as positive by them		

Appendix V: Compilation of survey results

EPO	OU1	OU2
Awareness of the scenario planning		
41% of respondents were aware of the work	56% of respondents were aware of the work	46% of respondents were aware of the work
Structural dimension		
31% of respondents who knew of the EPO scenario planning said it had facilitated new contacts for them. For the majority (80%) the number was between 1 and 5. None (0%) said that no significant outcomes had resulted from these new contacts with the main benefit being respectively: access to new information, an opportunity to collaborate now or possibly in the future; and an appreciation of common interests. While the majority (80%) said that they may have made these contacts even without the scenario project, 20% specifically credited these contacts to the project.	13% of respondents who knew of the scenario planning and could recall it said it had facilitated new contacts for them. For many (71%) the number was between 1 and 5 while 24% said between 5 and 10. 29% said no significant outcomes had resulted from these new contacts. For the remainder, the main benefits respectively were: an appreciation of common interests; access to new information and; an opportunity to collaborate. While the majority (76%) said that they may have made these contacts even without the scenario project, 18% specifically credited these contacts to the project.	12% of respondents who knew of the scenario planning and could recall it said it had facilitated new contacts for them. For the majority (91%) the number was between 1 and 5. 46% said no significant outcomes had resulted from these new contacts. For the remainder, the main benefits respectively were an appreciation of common interests and access to new information. While the majority (91%) said that they may have made these contacts even without the scenario project, 9% specifically credited these contacts to the project.
Relational dimension		
57% of those who knew about the scenario planning said it had increased somewhat or significantly their trust in the EPO. For the remaining 43%, nearly all (89%) said they previously trusted the EPO and the scenario planning had not changed that. In addition, 79% of respondents familiar with	7% of those who could recall the scenario planning and had a relationship with members of the VCE at the time said it had increased somewhat or significantly their trust in all members of the VCE. 37% said it had decreased their levels of trust in some or all of the VCE members.	4% of those who could recall the scenario planning and had a relationship with members of the VCE at the time said it had increased somewhat or significantly their trust in all members of the VCE. 19% said it had decreased their levels of trust in some or all members. In addition, 29% described

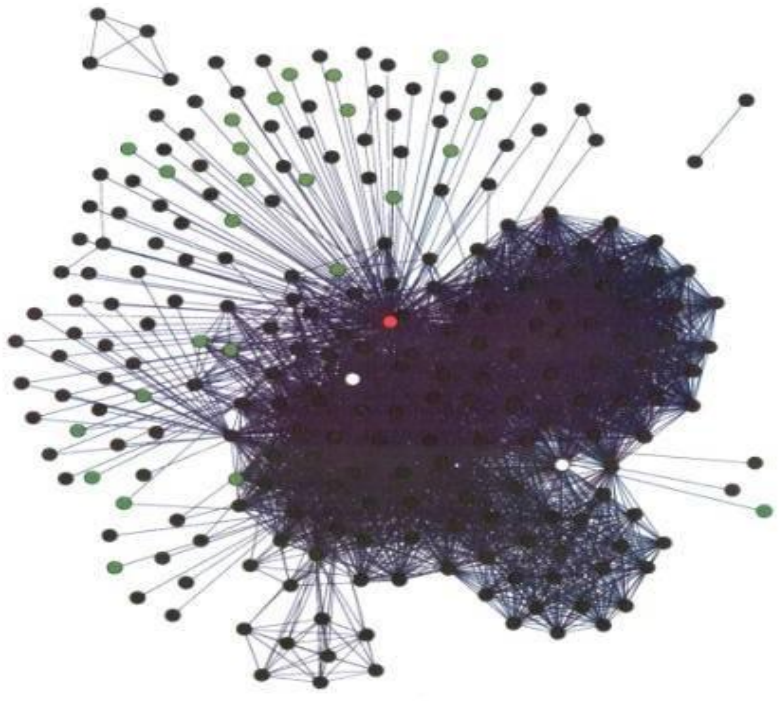
EPO	OU1	OU2
the scenario planning described their professional identity as distinct from the EPO as compared to 21% who saw it as similar. 83% said that the scenarios work had not changed this while 17% felt it had resulted in them seeing themselves as part of something larger that included the EPO.	In addition, 43% described their relationship with members of the VCE as distant. 20% felt the scenario planning had contributed to them seeing themselves as more distant with 10% saying it had made their relationship closer. (60% of all respondents who could recall said the work had made no difference to how they felt.)	their relationship with members of the VCE as distant at the beginning of the work. 30% said that the scenarios work had not changed this while 16% felt it had contributed to them seeing themselves as more distant with 8% saying it had made their relationship seem closer. (68% of all respondents who could recall said the work had made no difference to how they felt.)
Cognitive dimension		
52% of those who knew the scenario planning felt the scenarios had been successful or very successful in providing a common map of possible futures of the global patenting and intellectual property system while only 9% thought they had been unsuccessful (0% thought they had been very unsuccessful).	10% of those who knew the scenario planning felt the scenarios had been successful or very successful in providing a common map of possible futures facing the OU while 53% thought they had been unsuccessful or very unsuccessful.	19% of those who knew the scenario planning felt the scenarios had been successful (0% thought they had been very successful) in providing a common map of possible futures facing the OU while 51% thought they had been unsuccessful or very unsuccessful.

Appendix VI. Bi-partite affiliation network analyses

Figures I, II, and III below provide a visualization of the networks created through the scenario planning. The green nodes represent the academics and the red nodes the convenors. In the EPO case, the black nodes denote EPO staff and national patent office representatives and non-academic interviewees while the white nodes describe two external consultants who assisted with the process. In the OU case, the purple nodes denote the VCE members while the black nodes are non academic staff. The nodes with only one link, means their involvement was limited to an interview. Those with a greater number of links participated in workshops and are reflected in the denser parts of the network.

Figure I visualizes the EPO network created through the scenario planning. The dense parts of this network represent the interactions that occurred through the eight workshops attended by mostly EPO staff and representatives of the national patent

Figure I. Two-mode network analysis of participants in the EPO scenario planning

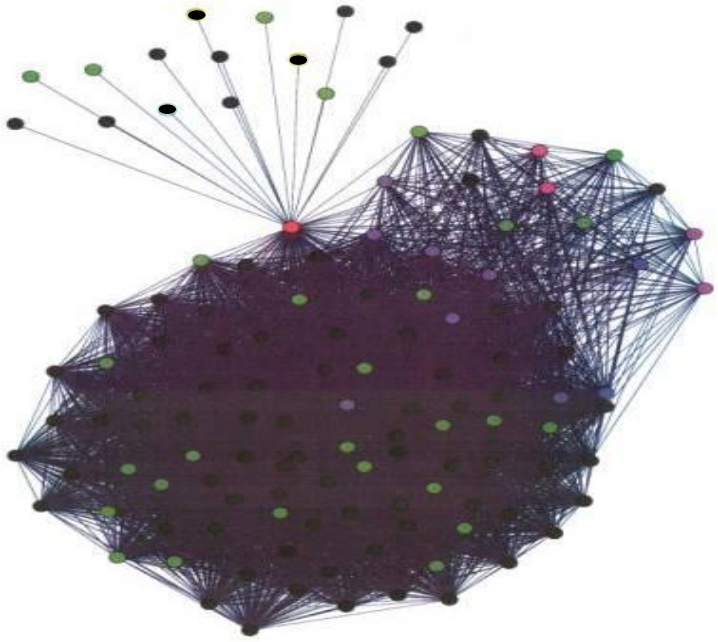


Key:
Red = convenor
Green = academics
White = external consultants assisting in the workshops
Black = non-academics

offices. Some academics were involved in the workshops but these were mostly the smaller one-off one-day events of between 16-20 people to develop the individual scenarios). These academics are represented by the green nodes found at the edge of the dense interactions. Most other academics were involved through interviews and thus are found to the left of the network as single nodes - they had just one interaction in the process. (The black single nodes to the left are other interviewees drawn from the private sector, other international patent offices, the press, etc.) Nearly all the academics are connected to the convenor (red node) who undertook the majority of the interviews and who was involved in every workshop, thus occupying the most central node in the network.

Figure II visualizes the network created in the OU1 round of scenario planning. The dense part of the network largely represents the interactions of the 23 scenario builders and the VCE members who participated in seven workshops (four of these were for a two-day duration). In addition, a half day workshop was held with the builders, VCE staff and Council members. The green nodes on the right

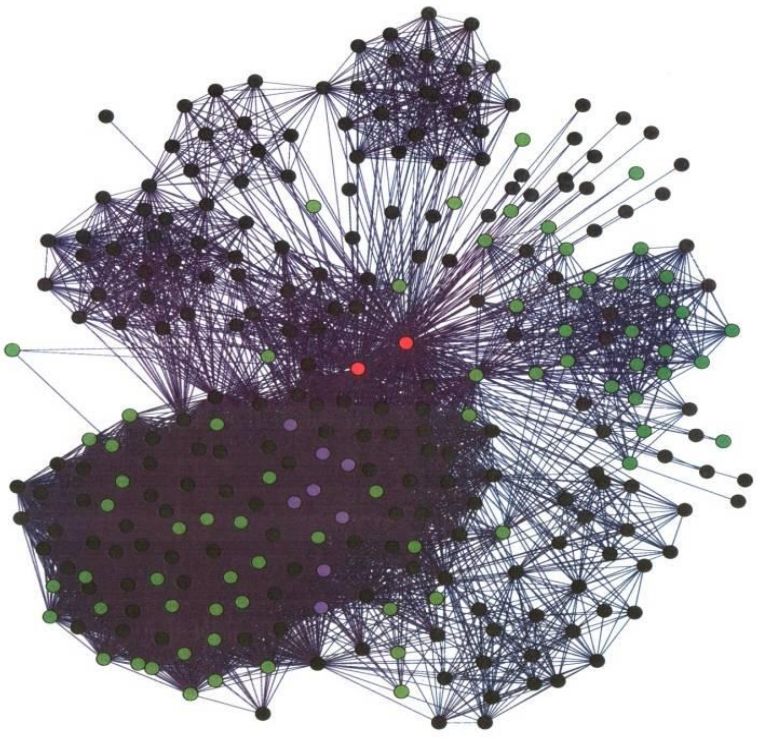
Figure II. Two-mode network analysis of participants in the OU1 round of scenario planning



Key:
Red = convenor
Green = academics
Purple = VCE members
Black = non-academic staff
Pink = external thought leaders'

slightly less dense part of the network represent four academics that were consulted by the scenario builders during the process and the pink nodes in the same area represent the four external thought leaders who each attended one of the scenario building workshops. The single nodes to the top left represent those internal academic and non-academic staff interviewed by the convenor but not further involved in the process. Once again, the convenor has a central role in the network having undertaken the interviews and been involved in the workshops.

Figure III. Two-mode network analysis of participants in the OU2 round of scenario planning



Key:
Red = convenors
Green = academics
Purple = VCE members
Black = non-academic (staff and external interviewees)

Figure III visualizes the OU2 round of scenario planning. The dense part of the network towards the bottom left represents the five workshops the convenor held with VCE members; two with the Deans; one with VCE members and Deans together; two with Council members; and one with the Strategic Forum (a 40 person representative group from across the university). The smaller clusters around the dense

part of the network represent the three half day workshops held with the three groups of units from across the university. One of these groups was the central academic units and they can be found to the right in the grouping with a large number of green nodes (academics). The single nodes again represent one off interviews. The two convenors are central to this network as well having undertaken the interviews and been involved in the workshops.

Appendix VII: Compilation of *where* the scenario planning built new social capital in the cases

	EPO	OU1	OU2
		Relevance	
New social capital built	Senior management for whom the scenarios were directly helpful in strategy deliberations External groups who deemed the work valuable and issued invitations for EPO staff to present the work Academics (especially those critiquing the system) who found the materials useful for teaching and research Project team members who worked with academics and others to gain a good insight into the changes within the patent system	VCE, Council members and the Planning Office who used the scenarios in strategy deliberations Project team members who worked with the VCE, thought leaders and some academics and gained a good insight into the changes within higher education	Key governance groups (VCE, Deans, Sub-Deans, Council members) who developed and used the scenarios in strategic planning for the university Futures Office (Planning Office) who were involved in the work and using the outputs in strategy deliberations
No new social capital built	EPO staff not involved in the process who struggled to see the connection of the scenarios to their work Greater EPO staff with the scenario planning outputs missing the timing of the internal work on strategic renewal The legal community and traditional IP scholars who already had links with the Office and were embedded in traditional ways of thinking	Academics who struggled to see the connection of the scenarios with their work Faculties and units with the timing of the scenario planning outputs missing the planning cycle	Wider academic staff not involved directly in the process and who struggled to see the connection of the scenarios with their work

	EPO	OU1	OU2
		Resonance	
New social capital built	Those academics with less prior engagement with the EPO, who regarded the project as fair (with the Office taking on critical perspectives) and more evidence of the Office opening up	Project team members, VCE and Council members as well as academics with an interest (and in many cases responsibility) in strategic as differentiated from operational thinking/planning	Wider governance groups (e.g. Deans) who were more significantly involved in the process (as compared to the OU1 round) Key governance groups who had the opportunity to develop strategic options along with the scenarios
No new social capital built	Academics and EPO staff who felt it was not the mission of the Office to undertake such a study Academics and staff who felt that the study was 'negative' and critical of the Office	Academics that felt they were already externally orientated and felt the scenario planning did not add value to their work Academic experts (e.g. in economics, politics, etc) who were not consulted during the production of the scenarios and doubted the research on which the scenarios were based Academics and faculty governance for whom what was intended with the scenarios did not fit with competing messages and behaviors from the VCE	Academics for whom the value of a second round of scenarios was not appreciated Academics for whom what was intended with the scenarios did not fit with competing messages from the VCE
		Responsibility	
New social capital	The facilitator, project team, key Office sponsors and academics who were	The facilitator, project team, VCE members, Planning Office staff	The facilitator, VCE members, Planning Office staff, Deans

	EPO	OU1	OU2
built	responsible for producing and publishing the work Interviewees who took a lot of care to prepare themselves to provide a high quality interview	and the Head of Deans who had responsibility for producing and disseminating the work	responsible for producing, disseminating and using the scenarios
No new social capital built	Those EPO staff not involved in the project or using the scenarios	Deans and academics in the faculties who experienced the scenarios as a 'roll out'	Those academics not involved directly in the project or using the scenarios

CHAPTER FIVE.

SETTLING INTO THE FUTURE: COGNITIVE SOCIAL CAPITAL AND SCENARIOS

Abstract

Contrary to received wisdom, which holds that building social capital can only be done over very long time-spans, we propose that it can be deliberately built much faster by deploying scenario planning. In this paper, we show that such building can occur when perceived adaptive capacity to deal with actual or potential turbulent conditions is considered to be insufficient, or possibly soon will be. Drawing on the experience of our university's Newcomers' Club, which helps newly-arrived partners of visiting scholars, graduate students and newly appointed academic members to 'settle in' to our city, we consider this 'settling in' function in a strategy context, in particular the role played by scenarios. The paper makes two contributions: first, it shows that in the context of making sense of turbulence, it is logical to foreground the building of social capital with the cognitive dimension - as opposed to the relational and structural dimensions. Scenario planning builds the cognitive dimension through the creation of frames, narratives, and language to make sense of the turbulence - in short, it creates powerful ideas that helps people to 'settle in' to the future more quickly. Secondly, by explicitly suggesting that social capital building is a possible purpose of scenario planning, it gives this 60 year old practice a new quality standard, helping practitioners evaluate whether the investments to deploy scenario planning are worthwhile, and in doing so, further strengthen the scholarly understanding of why scenario planning is used and how it can be valued.

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INTRODUCTION

The university where we work (name extracted for reviewing) has a Newcomers' Club. In its website, it says that it is an organization, run by volunteers, whose aim is to help newly-arrived wives, husbands or partners of visiting scholars, graduate students and newly appointed academic members of the University to settle in and to give them the opportunity to meet people (in the town). Presumably the Club assumes that the University, its staff and students, will enable those it employs and matriculates to settle in gracefully, but that the university and its members cannot do so for the families of these people.

This paper considers this 'settling in' function in a strategy context, in particular the role played by scenarios. Those who conduct scenario planning (Ramirez et al. 2008; 2010; Schoemaker 1993; van der Heijden 1996; 2005; Wack 1985a; 1985b) do so to explore what possible future contexts they and their organizations might find themselves in. The scenarios that are produced are made to surface and/or challenge current assumptions and to test available strategic options, as well as to develop new ones. The intent is to assess opportunities that the future may hold and to be better prepared for the risks. But just like those people that come into our university (perhaps more so if from another country or culture or way of life) settling into those possible futures may appear to be daunting, stressful, and full of equivocality. The aim of the Newcomers' Club and scenario planning is to ex-ante provide the opportunity for people to become familiar with expected, sudden or emerging changes so that they can settle more easily into these futures.

Our paper suggests that what the Newcomers' Club has to offer has been under-attended to in scenario planning. We explore how the research on social capital

addresses this 'settling in' function from a scholarly perspective. In doing so, we contribute to the literature in two ways. First, we suggest that in the context of making sense of turbulent conditions, building social capital is best led with the cognitive dimension – the dimension that has been under-attended to in the literature (Maurer & Ebers 2006; Nahapiet 2008). And second, by suggesting that building new social capital is a possible purpose of scenario planning, we propose a new quality standard for this 60 year old practice.

The paper is organized as follows: We first discuss how the building of the cognitive dimension of social capital can assist actors to address potential or perceived turbulence in their environmental context. We then outline a model to show how scenario planning is able to build new social capital – leading with the cognitive dimension (as compared to the structural or relational) – and how this in turn increases the adaptive capacity of actors to deal with the turbulence. Finally, reflecting on the model, we first discuss the value of the cognitive dimension for speeding up the building of social capital with the aim of addressing its neglect in the literature; and second, outline how the building of new social capital can be seen as a new quality criterion for scenario planning.

THE CHALLENGE: ADDRESSING TURBULENCE AND BUILDING COGNITIVE SOCIAL CAPITAL

Managers experience turbulence when their (and their organization's) perceived adaptive capacity to cope with actual or imagined changes in one's environment is surpassed (McCann & Selsky 1984). In turbulence, the origin and trajectory of uncertainty in the broader contextual environment (the environment that surrounds one

as well as one's counterparts) is no longer predictable. Turbulence is experienced as a sense that "the 'ground' is in motion" (Emery & Trist 1965:26) and can be a stressful experience for managers (McCann & Selsky 1984; Ramirez et al. 2010).

Turbulence is technically understood as an environmental causal texture, and was first introduced into the literature by Emery and Trist in 1965. Since then, the concept and related terms have been invoked by strategy scholars to describe environments characterized by rapid and disruptive change – what have been called high-velocity environments (Bourgeois & Eisenhardt 1988). These environments are different to those that are dynamic as, although those also involve a great deal of change, they are far more predictable (Eisenhardt & Martin 2000:1110). On the contrary, in high-velocity environments predictability is greatly reduced. High velocity environments however do not attend explicitly to the suddenness that turbulent causal textures may hold for disruptive change in organizational environments.

Managers who address turbulence may decrease their exposure to such conditions by exiting fields where turbulence is present, locating in enclaves where it is absent (Selsky et al. 2007) and/or increasing their organization's adaptive capacities – as would prospective or actual new residents coming to settle in our city. Increased adaptive capacity, whether treated as objective (Emery & Trist 1965) or subjective (McCann & Selsky 1984; Selsky et. al. 2007), involves actors reaching out to build new social capital. Research defines social capital as resources that are available only through networks of relationships (Lin 2001; Nahapiet & Ghoshal 1998). Social capital enables individuals (new residents or managers) to access non-redundant information (Lin 2001), create new opportunities in the form of unprecedented real options

(Nahapiet 2009) and make sense of who they are in their newly formed networks (Latour 2005).

In this light, our university's Newcomers' Club's function is dual: it increases perceived adaptive capacity ("we will help you to settle in, become familiar with your new surroundings, and meet other people, so you can cope better") and as decreasing the perceived changes in one's environment ("new for you, but not for us, so we can make it less challenging for you"). The Club does this through experienced local residents working with members to organize activities that meet their needs. Theoretically then, our University's Newcomers' Club exists to avert turbulence – or to make it manageable and more productive – for those that want its support.

Building social capital has up to now been considered to take years, decades or centuries. Putnam (1993), researching different patterns of social capital formation in distinct parts of Italy, proposed that it takes centuries for relationships to develop and the capital to form – far more time and effort than our university's Newcomers' Club assumes. Emery and Trist (1965) thought it would take a generation while Axelrod (1984:191) suggested that:

> The core of the problem of how to achieve rewards from co-operation is that trial and error in learning is slow and painful. The conditions may all be favourable for long-run developments, but we may not have the time to wait for blind processes to move us slowly toward mutually rewarding strategies based upon reciprocity. Perhaps if we understand the process better, we can use our foresight to speed up the evolution of cooperation.

For those living in contexts where turbulence is experienced or expected, efforts to build new social capital more quickly would be welcome. In this paper we explore the use of scenarios to deliberately and purposefully accelerate the building of new

social capital by foregrounding the cognitive dimension to address possible future conditions.

Sensemaking (Weick 1995) is one logical way to engage turbulence; for making sense of expected or actual new contexts helps one to understand who one might be, and in relation to whom, anew – just think of the last time you moved to a new neighborhood, city, or country. Latour (2005:32) has suggested that in life, individuals and groups are very often actively involved in "mapping the 'social context' in which they are placed" and through that process they define themselves – their identities – and the groups they belong to, depend on, and contribute to. This work of joint self-other mapping activates communication (White 2008) which in turn creates networks and social capital (Cohen & Prusak 2001; Mische & White 1998). To build new sense, one weds new relations to old parties, and new relations to new parties – which is what the university's Newcomers' Club offers.

Sensemaking suggests that building new social capital in the context of actual or expected turbulence may be most usefully led by focusing on the cognitive dimension (Nahapiet & Ghoshal 1998) – as compared to the structural or relational ones. Social capital researchers consider the structural dimension of social capital to entail the *patterns* of connections between actors, and the relational dimension to concern the *quality* of their relationships. These dimensions are far more common in the social capital literature than the cognitive one (Maurer & Ebers 2006; Nahapiet 2009).

The cognitive dimension focuses on shared or common representations, interpretations and *systems of meaning* among actors, which facilitates communication and the exchange of knowledge (Nahapiet & Ghoshal 1998). It has received less attention in the literature at least since Nahapiet and Ghoshal explicitly defined the three

dimensions in 1998. Perhaps this is due to the push by economists to engage with social capital scholars (especially rational choice sociologists, e.g., Coleman 1988, 1990; and Lin 2001) when they realized social capital might be a good way of bringing the 'social' into their work (Fine 2010) and research. The engagement of economists with social capital is particularly evident in the World Bank's embracing of the concept in the 1990s (Fine 2010). Consequently, the engagement of economists may have sidelined other dialogs, such as those between social capital scholars, and social psychologists, cognitive sociologists, and anthropologists who stress the importance of meaning being created among actors. An example of the contribution that social anthropology can make to understanding the cognitive dimension of social capital is provided by Dr. Gillian Tett (2011:27), a social anthropologist who writes a regular column in the *FT Weekend Magazine*. Observing the annual Davos meetings she reflected that: "What these events do is to assemble a scattered network – or 'tribe' – and enable that group to redefine their social ties and identity to themselves and others. As they do that, numerous formal and informal rituals unfold that reproduce a common cognitive map, often in ways that participants barely notice".

Whatever the reasons for less engagement between social capital scholars and those interested in how meaning is created among a group, within the context of organizational studies, cognition can be thought of as a noun focusing on information processing, or as a verb attending to interpretive schemas (Eden & Ackermann 1998; Marshall 2008). Given our interest in the deliberate acceleration of the building of social capital for settling into unfamiliar, challenging futures, it is the second conceptualization that is particularly relevant. Here cognition can be described as "the enactment of meaning over time" (Porac et al. 2002:595). It is the assumption of the

person searching for meaning and "striving to obtain cognitive closure", and not that of the rational actor, that underpins the "sociocognitive framework" (Rydgren 2007:228,227) – the perspective we pursue in this paper to explore the building of cognitive social capital with scenario planning.

Maurer and Ebers (2006), taking the dynamic perspective of cognition, acknowledged the usefulness of learning processes to enlarge managers' cognitive schemas for building social capital. We build on this view to explore how scenario planning, as a learning process (de Geus 1988), can be understood as one way to accelerate the building of the cognitive dimension of social capital in perceived or potentially turbulent conditions.

Scholars have already linked scenario planning to turbulence and to cognition. Ramirez et al. (2010) showed how the work is specifically an approach for managers to address turbulence as compared to more placid environments where predictability is high and thus there is no need to consider multiple futures. Wack (1985a; 1985b), explaining his experience at Shell, described how scenarios were able to overcome individual managers' existing mental models by challenging the likelihood the future would unfold as they imagined and proposing other equally plausible routes. Schoemaker (1993) extended analysis to group-thinking and biases, and showed how scenarios play a valuable role in addressing probability heuristics (Tversky and Kahneman 1974) in decision making by having one set of biases (overconfidence, anchoring and availability) offset by another (the conjunction fallacy). This stretches thinking while making the scenarios more credible. Van der Heijden (2008:89) has shown that scenario planning addresses turbulence by facilitating an appreciation of the organization's environment, providing "decision-makers with a sensemaking tool in

order to gain understanding of what seems chaotic at first sight" while Wilkinson & Ramirez (2010) draw on Kaplan's (2008) insights to present scenarios as framing devices for better understanding turbulence. This focus on cognition has led Grinyer (2000:21) to promote scenario planning as a "cognitive approach to group strategic decision taking" arguing that this 'softer' perspective complements more analytic strategic planning by encouraging learning about the situation. In this paper, we extend this connection of scenario planning with turbulence and cognition to understand how the work builds the cognitive dimension of social capital

A MODEL OF SCENARIO PLANNING: BUILDING NEW SOCIAL CAPITAL WITH ATTENTION ON THE COGNITIVE DIMENSION

In this section we present a model to describe how scenario planning builds the cognitive dimension of social capital, enabling people to more effectively and quickly 'settle in' to potential future contexts they might plausibly inhabit. Scenario planning – according to van der Heijden (1996; 2005), whose book *Scenarios: The art of strategic conversation* is regarded as a definitive work in the field – is defined as:

> Scenario-based planning makes sense of the situation by looking at multiple futures, which are treated as equally plausible, reflecting the inherent uncertainty in the situation, but also what is considered predictable. It is non-prescriptive. It recognises that successful competitive strategies must be original inventions made by organisations. It therefore employs processes that enhance the capability of the organisation to mobilise resources towards greater inventiveness and innovation (van der Heijden 2005:49).

This conceptualization of scenario planning can be categorized as belonging to the intuitive logics school (Bradfield et al. 2005). In this tradition, scenario planning is

made up of a set of activities that can be grouped into five phases (see for example Shell International's Scenario Explorer's Guide 2003). First, is designing the process within time and resource limitations and deciding on the facilitator and other participants; second is reaching out to interviewees within and beyond the boundaries of the organization and conducting workshops to draft the scenarios; third is developing the draft scenarios, which is often undertaken in project groups and in liaison with internal and external experts; fourth is launching the scenarios and using them in further conversations to understand their implications; and fifth involves developing signals to monitor the scenarios and keeping them up to date.

It is the execution of these activities and the use of their outcomes that delivers the equivalent of what the Newcomers' Club offers to people seeking to settle into our city who have not lived here and do not know anyone in the area. The interviews and workshops provide forums for involving participants; developing the scenarios enables participants to explore and learn about the new possible future situations together; and the use of the scenarios helps them to consider how to best settle in as early and as effectively as possible.

Social capital has been defined by Nahapiet and Ghoshal (1998:243) as:

> the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit. Social capital thus comprises both the network and the assets that may be mobilized through that network.

We use their definition because: first, their paper is the most cited social capital article in organizational studies (cited 1,807 times in the Social Sciences Citation Index as of 16 February 2012) demonstrating its value theoretically and empirically; and second,

because they usefully disaggregate the three dimensions of social capital – the structural, relational and cognitive - for analytical purposes.

The three dimensions of social capital are inter-dependent (Nahapiet & Ghoshal 1998) and have "important interaction effects" (Bresnen et al. 2005:241). An example of such an effect is where new actors (the structural dimension) coming into a situation introduce new logics (Campbell as cited in Scott 2000) resulting in new shared systems of meaning being created (the cognitive dimension) and building the quality of their relationships (the relational dimension). However, Andrews (2010:599) has suggested that there is a need for researchers "to disaggregate the different dimensions of social capital" so as to determine "the relative merits of alternative approaches to developing organizational social capital". Thus, in our focusing on the cognitive dimension, we are not isolating it, but rather foregrounding it to explore its value in building social capital in turbulent conditions.

Our model seeks to clarify the process by which scenario planning builds social capital, acting mostly on the cognitive dimension. In doing so it helps people to settle into potential futures more quickly. In presenting the model, we provide illustrations from empirical research by the first author (see Lang 2012b) involving the scenario planning initiatives of the European Patent Office (EPO), The Open University in the UK (OU), and the Strategic Policy Office, Public Service Division of the Government of Singapore.

The scenario planning conducted by the European Patent Office (EPO) focused on plausible global future contexts for the possible legitimacy of patenting and intellectual property (IP) to reconsider what the purpose of the EPO might be in the future. The work was conducted over two years and involved 245 people from around

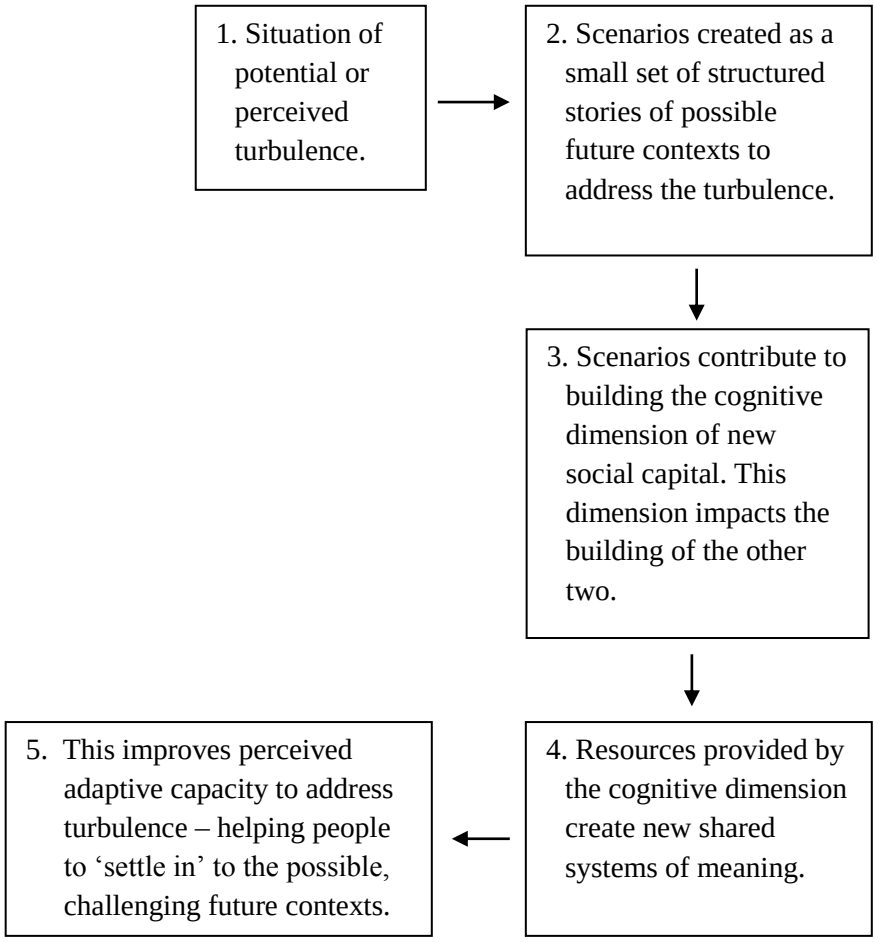
the world and internal to the EPO. The resultant scenarios were published in 2007 and have been used as the basis of strategic conversations (internally and externally) to understand and address potential future directions in patenting and IP regimes.

The Open University (OU), based in Milton Keynes, UK, undertook two rounds of scenario planning to alert staff to expected changes occurring in higher and distance education and to involve them in the institution's strategic planning. The first set of scenarios were created and disseminated over seven months in 2002 involving 124 people and the second set over six months in 2005 involving 290 participants. The scenarios were subsequently used to develop strategic priorities for the University, to guide strategy development across the units that make up the University, and led to the introduction of a series of strategic forums on topics relevant to the future of the OU.

The Strategic Policy Office of the Public Service Division has responsibility for developing national scenarios for Singapore and undertaking 'issue-based' scenario planning. One such issue-based project focused on the impact of new media. This project was initiated after several events where new media had played a significant role – including in the 2006 national elections. The work was undertaken over 10 months and involved approximately 50 participants. The outcomes were distributed to relevant government departments, submitted to a government-appointed taskforce on new media, and presented to a policy forum in the civil service. According to the former Head of the Civil Service, the work "helped us to understand the implications of blogs, social networking sites and other emerging media forms for policymakers. The scenarios were one factor, among several, that prompted MICA [Ministry for Information, Communication and the Arts] to build up its New Media Unit" (Ho 2009:24).

Below is a summary of our model (Figure I) outlining how scenario planning builds new social capital by foregrounding the cognitive dimension thereby helping people to settle into the future.

Figure I. Model describing how scenario planning helps people 'settle in' to potential future contexts



1. Situation of potential or perceived turbulence

Scenario planning is a process used by actors to make sense ex-ante of potential or actual perceived turbulence. This is what the University's Newcomers' Club offers to those coming from foreign lands (whose mother tongue is perhaps not the one spoken here and whose values may be incompatible with those of this area). It offers

prospective sensemaking (Wright 2005), that is, ahead of time facilitating an understanding of how things work here (the newcomers' future context) so as to increase familiarity and provide guidance about who to reach out to and connect with thus reducing newcomer's anxieties and enhancing their adaptive capacities.

Scenario planning is a good way of investigating ill defined, emergent situations and their possible unfolding because of its exploratory focus. In exploratory processes, there is no immediate need for commitment to a given course of action – rather the intent is on reaching out to explore possibilities and to learn, possibly even to experiment. This stance provides the space and the time for interaction, learning together, and thus for new relationships to develop – it is what Winnicott (1971) called a 'transitional space'. In a transitional space, actors have the opportunity and time to reconcile how things in the future might be different from the present without feeling the need to act. (The concept of transitionality is discussed in further detail below.) In addition, as the future in turbulent environments is uncertain, the understanding that is created through scenario planning processes is conveyed in multiple, incompatible, and equally plausible scenarios. This has the effect of accommodating different perspectives among participants and keeping the choice of longer term action open.

2. Scenario planning as exploratory research

Exploration through scenario projects is undertaken as research on possible futures of an unclear and unfolding situation (Schoemaker 1993). The understanding that is arrived at is expressed in structured systems of the future situation and stories of how those conditions might unfold. The structures and stories, in small sets of two to four incompatible but internally coherent versions, are the scenario set that scenario planning offers.

Scenarios are created as plausible and coherent structures and communicated as stories because stories are particularly helpful in understanding new, emergent situations, with the act of structuring and telling a story being the preferred mode of sensemaking in organizations (Boje 1991). This is why scenarios draw predominantly on what Bruner (1986:13) described as the narrative (good story) mode of constructing reality which "leads to good stories, gripping drama, believable...accounts". This mode contrasts with the paradigmatic (well-formed argument) approach, which is used in more settled contexts.

We propose that it is through the process of creating and telling structured, challenging, relevant, plausible stories – what van der Heijden (2005) in scenario planning called "strategic conversations" – that new, shared, cognitive social capital is built in turbulent conditions. As White (2008) has noted, stories make networks explicit. Scenarios and the conversations they sustain and elicit, help those who engage with them to more effectively settle into potential futures.

Attempting to settle in also has implications for people's identities. The constant struggle to establish an appropriate identity or "social footing" in uncertain situations is what creates action and leads to social formations (White et al. 2007:553). A good example of this link between identity and social formations is found in the European Patent Office in-house magazine (EPO 2005:8) after a scenario workshop.

> *"Other spanners were thrown in the works by three external speakers who challenged our own comfortable notions of who we are and what we do as the European Patent Office. We are very comfortable with our situation as a technical organisation routinely processing patent applications...The external speakers confirmed public misgivings about the patent system and made us sit up with their comments that the EPO is <u>seen</u> as a political organisation, as a legislative organisation and an ethical standards organisation. Those are perceptions, whether*

> *we like them or not, of educated, professional outsiders and held also by a broader public. The questions arise, what do we do about those widely held perceptions? "*
> [emphasis in the original]

Rydgren (2007:229) thus notes that "…people not only try to grasp what is going on around them, but also to understand their own self: Who I am? Where do I come from? And What will happen to me in the future?…much research suggests that cognitive strategies for understanding the social surround are strongly influenced by these particular questions". This is why Weick (1995:23) says that it is often the text that needs as much re-interpretation as the context. So sensemaking is self-referential: "I make sense of whatever happens around me by asking, what implications do these events have for who I will be? What the situation will have meant for me is dictated by the identity I adopt in dealing with it…The more selves I have access to, the more meanings I should be able to extract and impose in any situation". Thus, through scenario planning, people can explore ex-ante what the future might mean for who they might become which increases the number of selves they have access to thereby increasing their capacity to make sense of changes as they emerge.

Scenario planning assists people to make sense of impending turbulence ahead of time - to explore possible changes in what they do, and even who they are - in relation to new relevant others. Such explorations increase their adaptive capacities by helping them to settle in to actual or imagined, potential future contexts. This is precisely why people buy travel guides of a destination they intend to vacation prior to flying there. This role is also the one played by our university's Newcomers' Club – new members find themselves in a new and unfamiliar city, country, climate, latitude, language situation where their existing identities of, say, lawyer or teacher or doctor

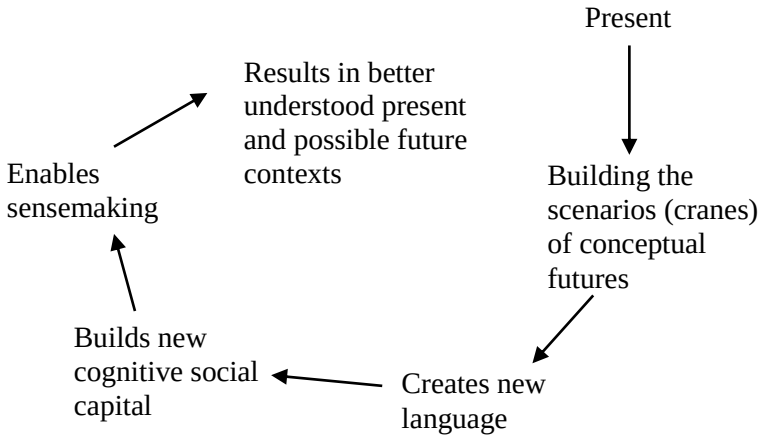
may no longer apply, as they are not licensed to operate here. Other identities instead will be crafted and new meanings will be made.

3. Scenario planning builds the cognitive dimension of social capital

The exploratory research undertaken to develop a small set of scenarios builds the cognitive dimension of social capital – the "shared representations, interpretations, and systems of meaning among parties" (Cicourel cited in Nahapiet & Ghoshal 1998:244). Scenario planning provides five resources for building this cognitive dimension, thus helping people settle into the future: new language; new frames and framing; new shared narratives; new boundary objects; and a new transitional space (Lang 2012b).

New language. A limitation to understanding new situations, such as possible futures, can be a lack of terms to describe it (Normann 2001). As Normann (2001:194) has noted: "Whatever our point of reference it is hard to conceive of new knowledge and a different and differently enacted reality without new language, which structures our world differently. Language is a necessary companion of new knowledge and innovation". As outlined in Figure II, building scenarios of the conceptual future enables new language to be created, thereby building new cognitive social capital, enabling sensemaking and helping people to better understand the future contexts they may face.

Figure II. The link between scenarios, new language, new cognitive social capital and sensemaking



Scenario planning provides the opportunity for people to create a new shared language that helps them understand the emerging future as well as each other's hopes and fears about it. For example, catchy scenario titles can work as shorthand, aiding sensemaking and communications.

Frames and framing. Scenarios provide shared representations (Roubelat 2000) and multiple frames of the possible future contexts in the present (Wilkinson & Ramirez 2010) – usually two to four. With multiple frames one overcomes the problem that individuals are unlikely to 'give up' their established frame of reference without good reason. In fact, taking the fish and water analogy how do we even know what our particular watery frame is without other non-watery ones to contrast it with? Scenario planning, by proactively imagining alternative future contexts, sheds light on those frames we take for granted making them explicit, and providing other frames that are equally plausible. As Wack (1985b:150) noted, "By presenting other ways of seeing the world, decision scenarios allow managers to break out of a one-eyed view. Scenarios give managers something very precious: the ability to reperceive reality"

The impact of scenario planning on creating new frames is twofold. First, alternative frames or ways of seeing the future enable people to become familiar with understanding how the future might be different from the present and provides them with time to consider what they might need to do in such circumstances prior to being fully embedded in them. Second, multiple scenarios as multiple frames can accommodate a range of incompatible perspectives that different people have about the future, thereby encouraging conversation rather than closing it down ("Why are you expecting that and not this? Why am I expecting this and not that?").

Shared narratives. Scenarios provide different conceptual frames for not only those producing them, but also for a wider audience when the scenarios take the form of shared narratives. The importance of such narratives for building cognitive social capital is in their role as 'memories' of the future (Ingvar 1985). More recently, neuroscientists have found that the same part of the brain that is responsible for creating memories of the past also creates memories of the future (Schacter et al. 2007). The importance of these 'memories' is that they provide common conceptual 'hooks' for what is noticed and attended to by multiple actors. These memories or hooks enable self-organization among actors along coherent lines – a form of holography where the whole is present in the parts (Morgan & Ramirez 1984; Morgan 2006). Thus, in the same way that values, mission and vision statements can cohere actors, scenarios can too. This role played by scenarios was well expressed by an an interviewee from The Open University - albeit with what they thought was moderate success:

> *"I think we were variously successful in getting people to have a mental image of what the scenarios would look like. And of course why that's important is that the more people in the organization that are acting as a kind of radar system, the better because then they would*

> *recognize 'ah that's that particular scenario playing out'".*

Boundary objects. Scenario planning usually involves a diverse array of people with their different perspectives, hopes and fears. This diversity can present challenges for working together, which boundary objects (Star & Greisemer 1989) or artefacts (Carlile 2002) can help. Boundary objects, defined as objects "that enable and constrain knowledge sharing across boundaries" (Bechky as cited in Spee & Jarzabkowski 2009:226), provide a common identity for different groups while remaining flexible enough to be adapted to the needs of a particular group. Consequently boundary objects aid communication, knowledge sharing and network coherence (Waddell 2007). Scenarios can act as boundary objects (Spee & Jarzabkowski 2009), removing cognitive barriers to the flow of non-redundant information. This was well expressed by a participant in the EPO scenario planning:

> "*I've been in a number of discussions with people from industry and so forth who have taken the scenarios and said we'll differ in our assessment from this scenario or from that scenario, we don't believe in this, we think that that will happen, but it's just anchored* [the conversation] *around them".*

What products our university's Newcomers' Club offers can also be thought of as boundary objects helping span the 'here' that people come from to the 'there' that they are going to arrive at.

Transitional space. Successfully contemplating the potential impact of turbulence – the things that might be changing – requires attention to both the external and internal worlds of actors (Amado & Ambrose 2001; Wack 1985a; 1985b). The process of developing and using scenarios provides a transitional space – a Winnicott-inspired

(1971) structured and safe environment for actors to reconcile both time and space issues (Amado & Vansina 2005; Ramirez & Drevon 2005). Time refers to actors working through tensions between the past and the future in the present, and rehearsing possible futures. Space involves having the opportunity to reconcile their "inner and outer worlds" (Amado & Vansina 2005:4) with each other – appreciating who they might be in possible future worlds. Thus, when coming to our city, the Newcomers' Club offers people the time and space to explore the myriad ways in which they can become active in their new community – through the arts, sport, social work, intellectual pursuits, or campaigning for any one of a dozen causes.

In scenario planning, this transitionality works in different ways. Interviews in scenario planning are deliberately aimed at not seeking agreement, but canvassing a wide range of views about what is driving the turbulence. Well-facilitated and structured workshops and meetings also provide actors with the confidence to safely voice their intuitions and newly formed ideas (Ramirez & Drevon 2005). However, sometimes the context in which a project is conducted, means that the scenario planning may not provide a sufficiently safe space for actors. In the Singapore case, concerns about confidentiality, government positioning and messaging meant the scenario planning failed to provide civil service staff with a safe space to engage known public figures in the blogging world (especially those active in the political space).

4. These resources facilitate building new shared systems of meaning

Beyond understanding each other better, and under what future conditions given assumptions may be correct or wrong, scenario planning helps people with incompatible views develop new shared systems of meaning (the cognitive dimension of social capital) – to build what Emery and Trist (1965) called 'common ground'. The role

played by scenario planning in building new social capital was well explained by a Singapore scenario planner:

> *"Oh I think it* [scenario planning] *does* [build social capital] *because in scenarios you ask different questions, right? You're not just working on a policy paper or producing a legislative draft or whatever, you're working on issues which are new, emergent, complex usually. So it gave us a chance to develop shared understanding, shared lingos, shared frames of reference; it built communities."*

The resources' (a shared language, frames of reference, etc.) that this interviewee speaks of, and which we discussed in the previous section, facilitates the building of new shared systems of meaning among actors. Shared systems of meaning are important because they make possible communication and the co-ordination of effective action (Cannon-Bowers & Salas 2001; Nooteboom 2009). We understand shared systems of meaning as not identical, but sufficiently overlapping (Cannon-Bowers & Salas 2001; Klimoski & Mohammed 1994) to facilitate comprehension and action among a new configuration of actors.

While developing new shared systems of meaning is more obvious for those directly involved in the creation of the scenarios (Lang 2012b), scenario planning can influence the generation of meaning more broadly. The work does so by manifesting the sponsoring organization's thought leadership where the scenarios not only facilitate a given conversation but, more importantly, frame the very essence or nature of what is to be debated (Wilkinson & Ramirez 2010).

A scenario set can also help people settle into their own potential future contexts by decreasing the stress and anxiety that perceived changes in their future environments pose. This is achieved by exploring the future under less stressful

conditions – just as is the case of visiting our city in advance of actually moving here, and being guided on aspects of life here by our university's Newcomers' Club.

To have this impact of building new cognitive social capital in time for it to be of use in the presence of newly experienced or possible turbulence, the quality of the scenarios, the breadth of perspectives the scenario set accommodates and the comprehensiveness of the supporting material is paramount. As a Singaporean interviewee noted:

> *"So social capital…* [is] *not just about let's all get together and show, right? It's about what do you have of value that you are bringing to the table?"*

Similarly, our university's Newcomers' Club offers something of value to those new to our city that leads them to join the club thus helping them to settle in. Those who are so helped come to develop new (for them) shared meanings about our city: how to best access services; to understand important cultural nuances that will make life agreeable; and to build new networks and access existing ones.

5. Addressing the perceived or potential turbulence – helping people to 'settle in'

The culmination of our model is that deliberately building the cognitive dimension of social capital increases actor's perceived adaptive capacity, thus helping them to better address turbulence.

Because scenario planning imagines challenging, plausible future contexts before they actually unfold, it constructs new cognitive social capital before it is 'actually needed', thus buying time for people to 'settle in' in advance. Whilst our university Newcomers' Club does so individual by individual, or family by family,

publicly released scenarios can do so for whole constituencies and privately distributed ones for groups of intended users.

Research in cognitive psychology holds that imagination, as a learning strategy, can improve performance for learners who already have a reasonable amount of knowledge of the area (Cooper et al. 2001). The requirement of reasonable knowledge is due to it being difficult to imagine both the knowledge area and the act of performing at the same time. Cooper et al. (2001: 69) explain:

> Learners who hold a relatively high level of knowledge in a given content area may find the application of imagination techniques to be beneficial to their learning because their schemas will free working memory sufficiently to enable them to conceptualize, maintain, and execute the mental operations associated with imagination. In contrast, learners who hold a relatively low level of knowledge in a content area may find that attempts to engage in imagining will impede their learning because they lack the prerequisite schemas necessary to enable the elements and their relations to be imagined.

Cooper et al. also found that imagining is important in learning not for its role in constructing new cognitive structures or schemas, but for activating existing ones. In as much as this applies to scenario planning, scenarios help learning because they expand existing cognitive schemas through which signals about emerging possible futures are understood, thus enhancing sensemaking (Eden & Ackermann 1998).

Wright et al. (2008:221) argued that scenario planning is most effective "after there is recognition that the environmental threat to the organization's current strategy is high, but before the psychological processes inherent in coping behavior…are activated". In the three cases researched by the first author, the scenario planning facilitated learning because while those instigating the work were concerned about

potential environmental changes for their organizations, they were not sufficiently threatened by them that "defensive avoidance behavior" (Wright et al. 2008:234) had set in.

Where the threat level is deemed manageable, scenario sets enhance learning because they provide knowledge content about different potential futures, freeing people of anxiety about unknown possibilities and focusing attention on imagining how they would perform in well-structured, researched possibilities. Without well-researched scenarios, people would struggle more to develop new perceptions and relevant adaptive capacities and to recognize the social capital they need to build to settle into those possible futures with enough time to start building it.

Enhancing perceived adaptive capacity, by building cognitive social capital, makes settling into those potential, still challenging, futures more comfortable. The opportunity to work an ill-defined, uncertain and unpredictable emerging or potential issue through with others makes the situation seem more manageable. This is so because even if those futures look challenging, or even more challenging upon being researched, coming to better understand them and having the opportunity to imagine possible options to act in them – 'rehearsing the future' (Schwartz 1991) – is empowering.

Thus, just as our university's Newcomers' Club increases members' perceived adaptive capacities to settle into this part of the world, scenario planning helps people settle into potential futures through building networks and developing new shared systems of meaning that coheres' them.

DISCUSSION AND CONCLUSION

We believe our model demonstrates the value scenario planning can hold for leading the building of new social capital with the cognitive dimension. Here we discuss the significance of this contribution, which has been ignored in the literature. We also outline how scenario planning's ability to build cognitive social capital provides the practice with a new standard for assessing the quality and value of interventions based on it.

The value of leading the building of new social capital with the cognitive dimension

The cognitive dimension described by Nahapiet and Ghoshal (1998) enables communication and the sharing of information and other resources among a group of actors. Speaking particularly in the context of how social capital facilitates intellectual capital, Nahapiet and Ghoshal (1998:253) argued that "knowledge and meaning are always embedded in a social context" and that "meaningful communication…requires some sharing of context between the parties". In this paper, we suggest that leading the building of social capital with the cognitive dimension is particularly relevant when potential or perceived turbulence is experienced.

The literature suggests that social capital can be built both indirectly and directly (Nahapiet 2008; 2009) and doesn't find for either exclusively suggesting that some forms of social capital are more amenable to being directly built than others. Ostrom and Ahn (2003:xxxi) for example, suggested that institutions (rules) can be invested in, whereas other forms of social capital such as trustworthiness and networks are more likely to be created as a by-product of activities: "Investing in the process of examining current conditions and likely future problems and coming to a decision about the most appropriate set of rules to be used to govern future interrelationships is obviously as

much an investment decision as any investment in physical infrastructure". For these authors, the key issue is not the participation in activities as such, but more specifically whether the participation is "a self-conscious *investment*" or "a *consumptive* activity with an unplanned flow of benefits" [italics in the original] (Ostrom & Ahn 2003:xxxi).

Our argument in this paper is that scenario planning represents a direct investment for speeding up the building of new social capital in contexts where there is a premium on making meaning in, or sense of, a situation characterized by perceived or potential turbulence. In particular, we argue that scenario planning foregrounds the building of the cognitive dimension that enables the relational (e.g., trust) and structural (e.g., networks) dimensions to be created as by-products of the process. Given Emery and Trist's (1965) focus on values and ideals to address turbulence – the relational dimension – this may explain why they thought social capital took decades to be created. Similarly, Putnam's (1993) focus on trust and cross-cutting networks, would also explain why he thought social capital took centuries to emerge (as a form of historical path dependency).

On reflection, the idea that in the context of making sense of turbulence, the building of social capital is best led with the cognitive dimension (Galer 2004) seems logical. Coming to understand a situation, creating a language to speak about it and framing a narrative to explain it, is how societies have evolved since time immemorial. One only has to think how Hitler's framing of Germany's situation after the first world war significantly shaped that country – and the world's – relationships and affairs over the next several decades; or the impact Marx and Engels 'The Communist Manifesto' has had on political systems and societal relationships around the world. It is this power of ideas which led John Maynard Keynes (1936:383) to comment that:

> "The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else… I am sure that the power of vested interests is vastly exaggerated compared with the gradual encroachment of ideas."

Scenario planning creates the ideas that make turbulence more understandable thereby helping people to settle in to possible, future contexts more quickly. In conclusion, our argument is that social capital can be deliberately built to address turbulence by foregrounding the cognitive dimension and that deploying a well-established and proven method – scenario planning – can deliberately speed up this building.

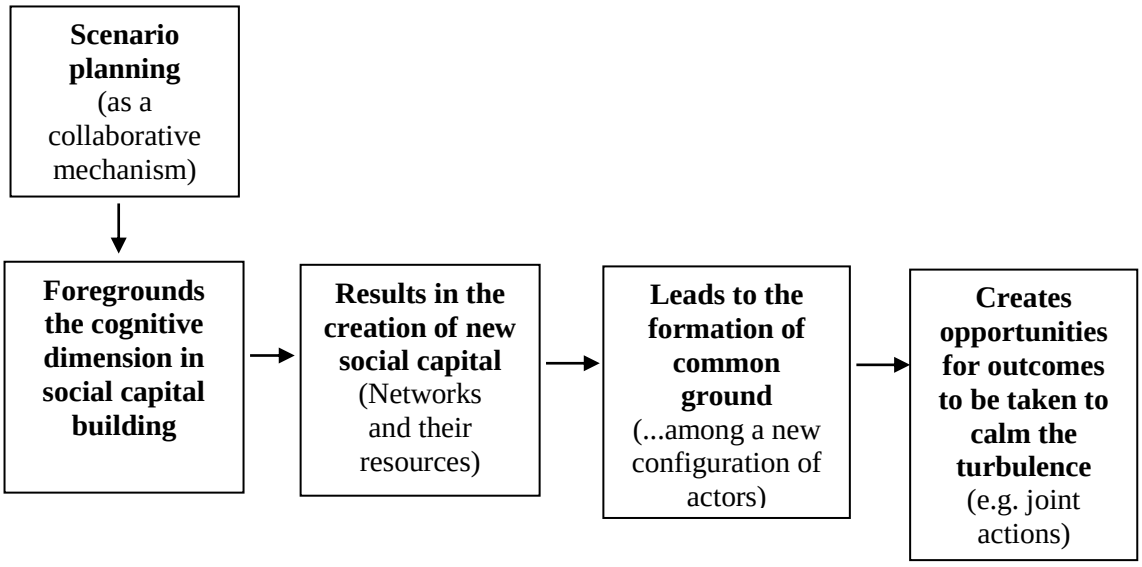
Building social capital as a new quality standard for scenario planning effectiveness

Just as the quality of the Newcomers' Club is judged by how well it helps people settle into our city, a key purpose and measure of the quality of scenario planning suggested by our analysis is how well it helps people to build new social capital and more readily settle into potentially challenging futures. We thank Kees van der Heijden for suggesting to us that the building of new cognitive social capital in effect provides a new quality standard for evaluating scenario planning investments; helping those who decide to use it to determine how they might justify the investments they make.

The creation of social capital through scenario planning enables actors to reach out to others to create common ground and find ways to address the turbulence together (Ramirez et al. 2008). Collaboration – or "working together" (Heckscher 2007:2) – is regarded as a good approach since further independent action (such as competition) would likely only exacerbate the situation (Emery & Trist 1965). Collaboration in

scenario planning projects builds the new social capital that can facilitate the formation of common ground, resulting in the opportunity for actions to be taken to address the turbulence. The relationship between these concepts is outlined in Figure III.

Figure III. The relationship between scenario planning (collaboration), building new social capital and the formation of common ground to address turbulence



We thus suggest that building social capital is an important, and under-acknowledged, intermediary factor between scenario planning, as a form of collaboration, and the formation of common ground. As such, it moves social capital building from being a by-product of scenario planning that some practitioners were aware of, to being a possible, central, clear, and intellectually rigorous reason for undertaking the work.

In her ordering of the scenario planning literature using Morgan's (1986) metaphors of organization, Lang (2012a), found that the quality of the work has traditionally been judged in five ways. The first is in terms of how it supports strategy and innovation, where the aim of scenarios is to provide new insights into the strategic

situation. Wack's (1985b) work on re-perception is exemplary of this view of quality in scenario planning, as is the more recent work on scenarios and real options (Cornelius et al. 2005; Miller & Waller 2003). The second quality criterion for scenario planning is its role in risk minimization. Scenarios developed about the context are used to check assumptions in models, strategies and decisions (Wilkinson & Ramirez 2010). The aim is to increase the robustness of decisions and strategies as robustness is a preferable criterion to accuracy in situations of uncertainty (Lempert et al. 2006). The third quality criterion is the ability of scenario plannimg to proactively aid – speed up – organizational learning (Chermack et al. 2006). de Geus (1988:71) stated that "The ability to learn faster than your competitors may be the only sustainable competitive advantage". The fourth way in which quality in scenario planning has been judged is its ability to foster a strategic conversation among a group of actors (Chermack et al. 2007; van der Heijden 2005) while the fifth, is the role scenarios play in correcting manager's decision biases (Chermack 2004; Schoemaker 1993).

In our proposing that building new social capital to address potential or perceived turbulence is a sixth quality criterion of scenario planning, we break with the primary focus of the five existing criteria which are centered on fostering strategic insights. Instead, we draw attention to how the work impacts the building of relationships – intentionally or not. New relationships and the re-orientation or configuration of existing ones helps address potential or perceived turbulence (Emery & Trist 1965). Focusing only on new insights – the most common outcome imagined in scenario planning – without considering its impact on relationships, could be detrimental to the long term impact and success of the work.

Of course, there is a potential 'dark side' (Ostrom 1997, Putzel 1997, van Deth & Zmerli 2010) to building social capital that a quality standard for scenario planning will need to take into account. Scenario planning is utilized in turbulent situations often characterized as 'wicked problems' (Rittel & Webber 1973) or 'messes' (Ackoff 1979) or 'meta-problems' (Selsky & Parker 2005). In such situations, the work can be a powerful device for actors who are able to frame the situation, create a language for speaking about it and formulate the narratives that shape how it is understood by others. That is, dominant actors can shape the very agenda itself through a reflexive process whereby the representations they create shape the way the world is perceived and in turn the way the world is perceived reinforces the representations they have created (Woolgar 1988). Thus, leading the building of social capital with the cognitive dimension can potentially privilege these actors' interests over others and a quality standard for scenario planning will need to be attentive to this.

Conclusion

In this paper we have explored how scenario planning accelerates the building of new social capital, led by the cognitive dimension. In doing so, we proposed a new quality criterion for scenario planning, a practice that has been established since WW2 and which has grown significantly since 9/11 (Rigby & Bilodeau 2007).

We suggested that in the context of making sense of turbulence, it is logical to build social capital with the cognitive dimension. The power of ideas (Keynes 1936) leveraged through scenario planning to create new shared systems of meaning helps people to settle in to the future more quickly. In turbulent times, where the degree of uncertainty is high, foregrounding the cognitive dimension appears to be an effective way to lead the building of new social capital, instead of leading with investments in

relational and structural capital. This contingent view – based on the appearance or experience of turbulence – also contributes to redressing the imbalance in social capital scholarship where the cognitive dimension has been under-researched compared to the other two dimensions.

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CHAPTER SIX.

DISCUSSION AND CONCLUSION

In this discussion, I draw together the insights from the three papers and the literature review to conclude this dissertation's exploration into how scenario planning and the building of new social capital are related. Although the main findings are captured in the publishable articles and the review of the literature, the intent of this discussion is to provide an overview, albeit with some repetition, so as to identify key scholarly and practical implications of the research as a whole.

This chapter is organized as follows. I: first, recap the research question as outlined in the introduction; second, provide an overview of the findings and research sub-questions that emerged from the literature review; third, summarize the three papers; fourth, present a model outlining the relationship between scenario planning and the building of new social capital, identifying academic and practice implications as well as future research opportunities; sixth, and finally, I provide a personal reflection on my learning journey through the dissertation.

RECAP OF THE LITERATURE REVIEW, RESEARCH QUESTIONS AND THE PAPERS

The overarching research question

This dissertation explores the links between scenario planning and the building of new social capital in the context of organizations addressing perceived or potential turbulence. The premise of the exploration is that environments of systems (such as organizations) evolve over time, inviting these systems to develop different forms of social capital that will ensure their survival (Emery & Trist 1965). The research

explores scenario planning as a mechanism for building new social capital to address turbulence.

The contribution of the research from the perspective of scenario planning is to understand how scenario planning can build – and even accelerate the building of – new social capital, noted in practice by Galer (2004) and Kahane (2004), but not yet theorized by scholars. The contribution of the dissertation to the social capital literature is to attend to the lack of attention given thus far to understanding how social capital is built by organizations to adapt to changing circumstances (Maurer & Ebers 2006) and the value of foregrounding the cognitive (as compared to the structural and relational) dimension for this building.

Literature review of building social capital with scenario planning

The literature review compared and contrasted the two bodies of literature leading to the identification of 20 findings about how they are related. The themes in each metaphor (for both sets of literature) and the 20 findings are summarized in Table I.

Table I - Summary of the relationships between the two bodies of literature

Metaphor	Building social capital themes	Scenario planning themes	Findings about how the two literatures are related
Machines	• The impact of government efficiency measures and collaborative buyer-supplier relations for building social capital. • Building social capital to improve operations for firms operating across geographical distances. • Incentives for investing in social capital.	• Using wind tunnels to test strategic options and strategies. • Evaluating scenario planning. • Attending to efficiencies and improvements in the scenario process itself.	1. Scenario planning can be a mechanism for overcoming issues of lock-in to build new social capital. 2. How should formal and informal processes be used in scenario planning for the purpose of building new social capital? 3. Motivations for participating in scenario planning projects are likely to vary - impacting the new social capital that can be built.
Organisms	• Building social capital to address turbulence. • Building social capital to prepare for and cope with disasters. • Building social capital in inter-organizational or systems contexts.	• Acknowledging turbulence and the role of scenario planning. • Scenario planning as a process for understanding and co-evolving with changes in the contextual environment. • Scenario planning applications in the inter-organizational context.	4. Scenario planning can be a process for building new social capital to address turbulence. 5. In the absence of formal governance mechanisms at the wider system or inter-organizational levels, scenario planning can build the necessary social capital to facilitate new action at these levels.

Metaphor	Building social capital themes	Scenario planning themes	Findings about how the two literatures are related
Brains	• The role of learning in building social capital. • Use of digital technologies in building social capital. • Building social capital to support knowledge workers.	• Scenario planning as a learning process (and a way to accelerate this process). • Scenario planning and overcoming cognitive biases in learning and decision making. • Use of digital technologies and handling quantitative and qualitative data in scenario planning.	6. Scenario planning can serve as a structured learning process for accelerating the building of new social capital. 7. Digital technologies, utilized within scenario planning, can increase the amount of new social capital built. 8. Scenario planning can provide a learning process for overcoming cognitive biases when building new social capital.
Cultures	• Social capital and the creation of communities and relationships. • Building trust and norms. • Attending to cultural differences when building social capital.	• The constructivist perspective of scenario planning. • Scenario planning as a strategic conversation. • The role of stories and storytelling in scenario planning. • Cultural differences affecting scenario planning.	9. The building social capital literature highlights the likely networks and communities built through scenario planning. 10. Cultural and institutional factors need to be attended to, to successfully conduct scenario planning for the purpose of building new social capital. 11. Aspects of the relational and structural dimensions of social capital appear to emerge as by-products of activities, while the scenario planning literature suggests

Metaphor	Building social capital themes	Scenario planning themes	Findings about how the two literatures are related
			the cognitive dimension can be built directly in situations where there is a premium on sensemaking. 12. Trust in the design and execution of scenario planning projects is essential for building new social capital through the process.
Politics	• How different interests affect the building of social capital. • The role the institutional context plays in building social capital.	• Incorporating multiple perspectives in scenario planning. • How scenario planning can balance groupthink and fragmentation. • The role of political and institutional factors in scenario planning.	13. Leadership is important for initiating and conducting scenario planning for the purpose of building new social capital – but it has been under-attended to in the literature. 14. Scenario planning can offer a structured process for building new social capital among people with diverse interests.
Psychic prisons	• The role of collective identity in building social capital. • Building social capital to bring about intentional change.	• Scenario planning challenging mental models. • Scenario planning bringing about a re-perception of the situation. • How emotions and defense	15. Scenario planning can provide the resources to create new shared systems of meaning among a group of actors. 16. Scenario planning can be used to explore and activate collective identities to build

Metaphor	Building social capital themes	Scenario planning themes	Findings about how the two literatures are related
		mechanisms affect scenario planning.	new social capital.
Flux and transformation	• How social capital enables actors to deal with change. • Building social capital for innovation.	• Autopoiesis challenges the way scenario planning is conducted. • The role of scenario planning in understanding deep systemic change. • The contribution of scenario planning to innovation. • Incorporating discontinuities into scenario planning.	17. Scenario planning can help organizations adapt their social capital over time as strategic circumstances change. 18. Scenario planning with an emphasis on building social capital could improve the innovation process.
Instruments of domination	• The impact of authoritarian rule on building social capital. • Concern that issues of gender, politics, race and class are ignored in building social capital.	• The role of ethics in the scenario process. • The ends to which scenario planning is put. • How scenario planning may overcome instruments of domination.	19. Scenario planning can challenge power inequities thereby helping build new social capital, but it can also reinforce them without deliberate and careful attention. 20. Agency and the inspiration of the future can be harnessed through scenario planning to build new social capital.

As a result of the literature review, four research sub-questions were identified:

1. "What are the different expressed purposes of scenario planning given they have different implications for understanding how the work builds new social capital?"
2. "How can an organization overcome the challenges of 'lock-in' to build new social capital in the context of potential or perceived turbulence? What role can scenario planning play?"
3. "How can scenario planning build – and speed up the building of - new social capital?"
4. "What is the role of the cognitive dimension in building new social capital in the context of addressing perceived or potential turbulence?"

These questions are addressed in the three papers (as described below) and in the model discussed in the next section.

The three papers

Paper one: The many images of scenario planning: Ordering the scenario literature using Morgan's metaphors. This paper structured 40 years of the scenario planning literature using Morgan's (1986) metaphors. The field has been traditionally practiced-based resulting in a body of literature that, due to its lack of structure, risks impeding further development of the field. The outcomes of the ordering included a list of themes that highlighted the many different areas in which scholarship and practice has been focused. Despite this diversity there are some notable gaps in the literature for scholars to pursue. These include the application of scenario planning to civil society and inter-governmental contexts; the lack of tools for assessing the social and political

context in which scenario planning projects are conducted (Lang & Allen 2008); the links between chaos and complexity theory and scenario planning (although this topic was the subject of the 2011 Oxford Futures Forum and hopefully will lead to publications usefully exploring these links); and resolution of some of the tensions within scenario planning. These tensions include what design modifications might be needed for scenario planning to take organizational and individual identities more into account; and ways in which scenario planning can be executed with less resources without losing the ability to delve 'deeply' to surface new understandings. For practitioners, highlighting the multiple themes in the literature indicates the need to be very clear about the purpose of the intervention and ensuring the process design reflects this.

Dominant metaphors in this review (those with the most pieces of literature) include the machines and organisms metaphors which have also dominated management literature over the last 100 years (Morgan as cited in Grant & Oswick 1996). Like the management literature, the scenario planning literature has matured over time, diversifying into other metaphors, particularly that of the brains.

There is scant mention in the scenario literature of the specific capacity for scenario planning to build social capital. However, the value of structuring the literature has been to highlight the different ways in which scenario planning can potentially build new social capital. For example, accelerating organizational learning (de Geus 1988); facilitating re-perception (Wack 1985); anticipating and adapting to turbulent conditions (Ramirez et al. 2010); convening diverse actors in strategic conversations (van der Heijden 2005); and using the conceptual future as a way of reframing the present (Inayatullah 2009) point to the various ways in which the work can build new social

capital. If Venkataram and Subramaniam (2002:461) are right that the strategy field is evolving into a third era depicted as a "portfolio of relationships", and if strategic management is to be increasingly understood as a relational process (Starkey & Tempest 2004), then developing the theoretical underpinnings of how scenario planning specifically creates social capital is important.

Paper two: Scenario cranes to build cognitive social capital. Acknowledging the potential usefulness of developing the theoretical underpinnings of how scenario planning relates to the building of new social capital, this paper reported on empirical research undertaken with two organizations. The aim was to understand how the deployment of scenario planning impacts the building of new social capital to address perceived or potential turbulence. The major finding from the research was the important role the conceptual future plays in overcoming issues of lock-in to build new social capital. Using Normann's (2001) crane metaphor, the research shows how organizations can build scenarios to lift them to a "higher systemic logic" in the conceptual future (Normann 2001:200) thereby gaining new perspectives on the present. Social capital is built by actors working together to create new conceptual cranes, and then with them, working back from the position the cranes afford to identify what other new social capital might be required.

By focusing on the building of the cranes and using them to undertake sensemaking (Weick 1995) – tracking back from the future to the present – the cognitive dimension of social capital is highlighted. This is because the reconfiguration of an organization's social capital relies on a mental reframing of the situation (Normann 2001). The cognitive dimension refers to those resources such as a common language and concepts that provides new shared interpretations and systems of meaning

(Nahapiet & Ghoshal 1998). Scenario planning creates the resources that enable new shared systems of meaning to form among actors.

Based on this understanding, a number of suggestions arose from the research about how scenario planning can best be deployed to accelerate the building of new social capital. These were: including in the scenario project the key 'nodes' or actors in networks that are important to the purpose of the work; attending to the learning needs of those not directly involved in the process; choosing whether to lead the work by signalling a potential crisis, or helping to build on the positive; and deciding on on-going processes to leverage the nascent social capital built through the scenario planning.

Paper three: Settling into the future: Cognitive social capital and scenarios. Identifying the importance of foregrounding the cognitive dimension for building social capital, this paper proposed a model of how scenario planning (drawing on this cognitive dimension) helps people 'settle in' to potential futures. Drawing on the example of the Newcomers' Club at our university, who help partners and other family members of newly-arrived students and staff to settle in to the city we explored this function in a strategy context. Just like the newcomers', actors exposed to a perceived or potentially changed organizational environment, seek to increase their adaptive capacity and reduce their sense of uncertainty.

The model is grounded in scenario planning grappling with ill-defined and emergent situations where there is no clear answer about how to proceed. This means that an exploratory research focus is used. The scenario process enables participants to make sense of a situation, as well as who they are in relation to new relevant others brought in as a result of the changing context. Through approaching the emergent

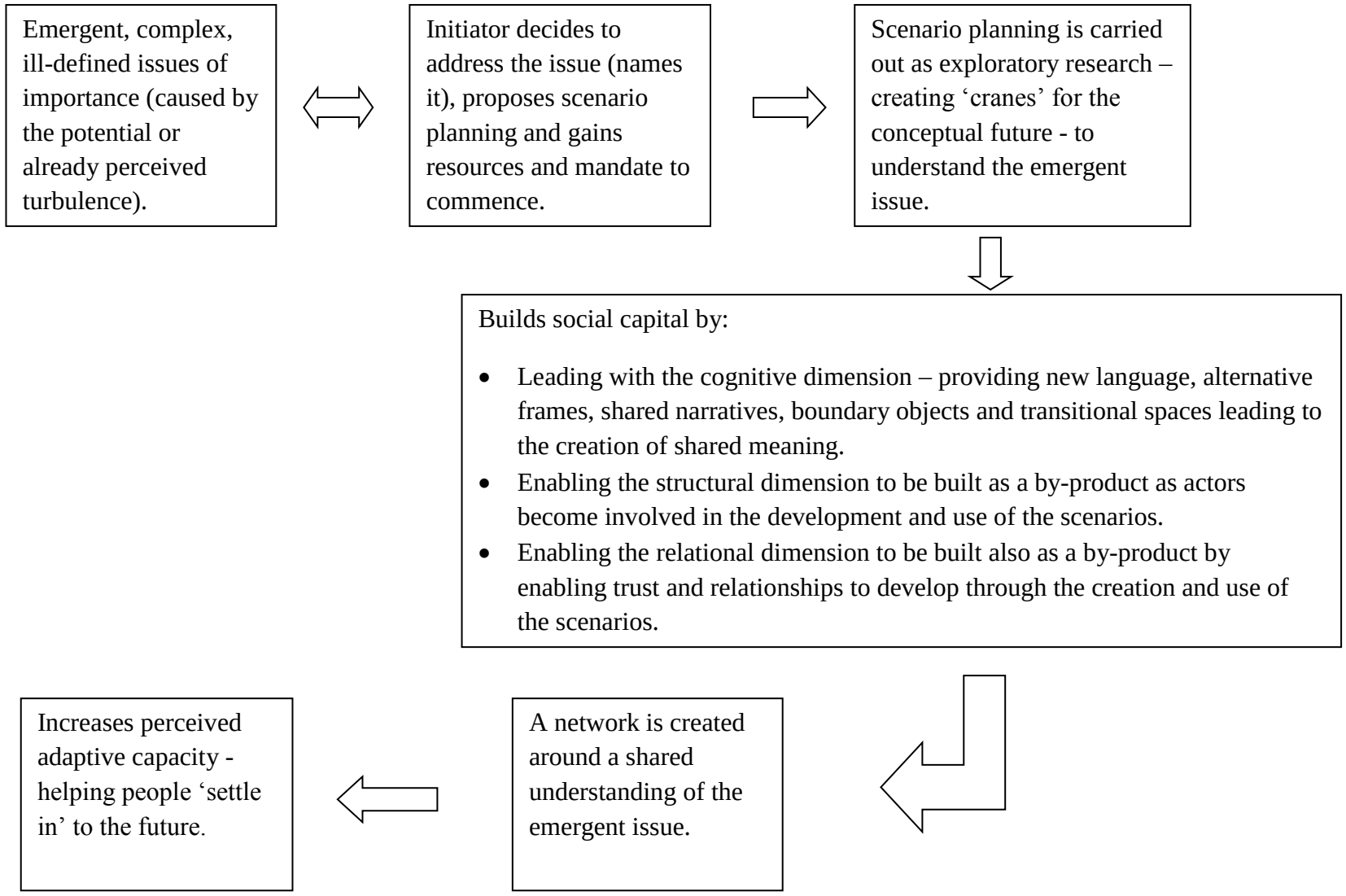
situation with scenario planning, cognitive resources (such as new language; new framings of the situation; new shared narratives; new boundary objects; and a new transitional space) are created. The provision of such resources enables new shared systems of meaning (Nahapiet & Ghoshal 1998) and common ground (Emery & Trist 1965) to be formed. These in turn increase people's perceived adaptive capacity (McCann & Selsky 1984) for settling in to the future.

We thus proposed that in situations where there is a premium on sensemaking, scenario planning can build new social capital more quickly than Emery and Trist (1965) and Putnam (1993) suggested by being a direct investment in cognitive social capital resources. By also suggesting that social capital building is a possible purpose of scenario planning, we identified a new quality standard by which the work can be judged.

A MODEL FOR HOW SCENARIO PLANNING IS RELATED TO BUILDING NEW SOCIAL CAPITAL

Bringing all this together, I propose a model to summarize how scenario planning and the building of new social capital are related. See Figure I below. As each component of the model is presented, key scholarly and practice implications as well as future research opportunities are highlighted.

Figure I. A model of how scenario planning and the building of new social capital are related



Starting with an emergent, complex, ill-formed issue of importance (caused by the potential or perceived turbulence)

In each of the three cases explored in the fieldwork (the European Patent Office; the Strategic Policy Office of the Government of Singapore; and The Open University) turbulence in the contextual environment was experienced by senior managers as ill-defined situations characterized by uncertainty. For the EPO, the legitimacy of the global patent system and their own Office was being called into question; in the case of Singapore, the advent of new media presented many potential changes for public communication and governance; and for the OU, new developments in higher and distance education challenged the institution's strategy. Turbulence thus makes salient the factors in the contextual environment over which actors feel they have little control (Emery & Trist 1965). These factors shape the transactional environment (the field in which organizations 'play' or operate) in ways that are not predictable. It is this lack of predictability that strategy scholars now use to differentiate high-velocity environments from dynamic ones (Eisenhardt & Martin 2000). A lack of predictability calls into question traditional strategies and options and introduces uncertainty about how to act. However, the degree to which the environment is experienced as turbulent has also been found to depend on the perceived adaptive capacity of managers and others within an organization (McCann & Selsky 1984). Those who feel their organization is not able to respond well to the turbulence, experience it more acutely.

The lack of predictability is why scenario planning, with its focus on uncertainty, is relevant to turbulent environments. Scenario planning focuses on understanding and structuring the 'problem', which it may re-scope and re-define so it can be better addressed - thereby increasing perceived adaptive capacity. Turbulence also threatens existing

strategies, and the usefulness of the relationships that have been created to execute these. In turbulence, established roles may become obsolete. Turbulence is thus the point where an organization's current configuration of social capital may cease to be an asset and become a liability. As a liability, an organization can find itself 'locked-in' to existing relationships that constrain it and which are not easy to exit from. It is this lock-in that makes social capital challenging to build. One of the key findings of this research has been that scenario planning with its focus on the conceptual future and the ability to foreground the cognitive dimension can overcome these issues of lock-in to accelerate the building of new social capital.

Future research. There are two ways in which a scenario project can be framed to address turbulence. The first is by signalling that the turbulence represents a potential crisis. In this situation, the scenario planning is offered as a way to avert the crisis by identifying strategies to better deal with the uncertainty and unpredictability. The second is by building on the strengths and the positives within the organization. Here, scenario planning is framed as a way of taking the best of the organization forward, to ensure it is more resilient.

Signalling that turbulence represents a crisis can disrupt the normal flow of things making the taken-for-granted problematic, thereby encouraging learning (Barton & Sutcliffe 2009; Christianson et al. 2008). This may be a good strategy where complacency is endemic and needs to be 'unsettled'. Success often breeds complacency – and all three cases represent organizations that have been extremely successful. Scenario planning is often framed in this way; as an interruption signalling that the turbulence could in a more or less distant future exceed the adaptive capacity of the organization, but that scenario planning can help to find or provide the solutions. The downside of this approach is that

senior management can be seen to be 'crying wolf' (as some of the internal EPO staff thought) and those who are innovating and engaging with change can feel ignored or think that the scenario planning will offer them very little. Others can feel apprehensive or disengaged if they are not provided with an opportunity to understand the potential or actual 'crisis'.

Alternatively, the scenario planning can be presented as an opportunity to build on the positives within the organization (Cooperrider & Srivastva 1987) or make the core ideology (Collins & Porras 2005) more robust for future circumstances. This would seem to be a particularly helpful approach where the mission of the organization is strong and unifying for staff. In the case of The Open University, staff members are committed to the mission (providing the opportunity for anybody to access higher education who wants to), which in their minds provides a clear rationale for the existence of the OU and the focus of subsequent strategies. To build on this strength, the scenario planning could have been framed as a process for better understanding the turbulence so the organization could continue to deliver its mission successfully into the future.

Future research would be helpful in determining which stance in scenario planning is best, and in what circumstances, for the purpose of positively impacting the building of social capital.

Initiator decides to address the issue, naming it, proposing scenario planning as the way to engage with it and gains the resources and mandate to commence the work

As Crothers (2002) noted, leaders are important for building social capital. Someone must take the initiative to organize projects and to gather the resources to execute them. Similarly, scenario planning relies on someone taking the lead – a

sufficiently senior staff member who is familiar with scenario planning and who believes that it is a good way to address the ill-defined situation. In each of the cases I studied, leadership was a key factor in the projects getting off the ground. In the EPO case, a member of the Management Advisory Committee initiated the idea, built support among Committee members and with the help of some, gained the necessary resources and the support of the new President. In the OU case, the work commenced as a result of the new Vice Chancellor taking up her position and proposing scenario planning to the Vice Chancellor's Executive as a way of better orientating university staff to changes occurring in the external environment. And in the Singapore case, the project was conceptualized and led by a senior staff member of the Strategic Policy Office who 'pitched' the idea to the head of the Office, gaining approval and support to proceed. Without the role these leaders took, the scenario planning would never have commenced.

The cases also highlight the amount of work that is required to commence a scenario project: for someone to recognize the potential or actual turbulence; to know about scenario planning as an option to address the situation; to be able to frame the situation and the scenario planning in such a way to garner support and a mandate for the work; and to be able to gather the necessary resources (and defend their use for this purpose).

The role of the sponsors is also important for the work. In all three cases, the sponsor was the most senior person in the organization – the President of the EPO, the Vice Chancellor of the OU, and the Director of the Strategic Policy Office in the Public Service Division, in the Government of Singapore. This sponsorship was vital for the projects, signalling the importance of the work and encouraging participation as well as justifying the investment of resources. However, it also meant the scenario planning

became closely associated with that person – particularly evidenced in the EPO and the OU cases. This meant the perception of the value of the scenario planning was closely connected to the reputation of the sponsor, which varied among constituencies.

Future research. What is evident from the EPO and OU cases is the idiosyncratic nature of scenario planning – and its lack of institutionalization. In both of these cases, the initiation of the scenario planning was completely reliant on a senior manager previously experienced with the work and convinced of its value. They in turn knew of external convenors who they recommended to undertake the work. In both these cases, when I left the field (two years after the scenarios were launched in the EPO and four years after the last round of scenario planning in the OU), there was little evidence that scenario planning had become institutionalized.

Singapore on the other hand does represent an example of scenario planning being institutionalized. The Government adopted Shell's methodology in the early 1990s (after the company had used scenario planning successfully to consider the collapse of the Berlin Wall) to build a greater anticipatory capability across the civil service. Scenario planning is now embedded in government annual strategic planning and budget cycles and national-level exercises are conducted every few years. These national scenarios are used by ministries in their planning. In addition, scenario projects on specific topics are conducted (such as the one researched in this dissertation on new media) and each Ministry is developing its bespoke capabilities.

What makes Singapore different to the EPO and the OU? Singapore is a small city state that feels vulnerable and yet wants to remain a significant global hub. One among a number of major city hubs in the region, such as Shanghai and Hong Kong, the Government is committed to pursuing the tools and mind-set that will keep Singapore

several steps ahead. As Peter Ho (2009:24), the former head of the Civil Service stated "This is the key challenge of government today – to prepare for a future in which we will be surprised time and again". Thus, there is an assumption within the Singapore Government that success can never be taken for granted. This is what drives the institutionalization and constant development of scenario planning and related futures tools.

Future research would benefit a better understanding of how scenario planning projects come about, what happens to them when they are finished, and what factors drive institutionalization (or not). One way of approaching this would be to contrast scenario planning with other management practices that have been successfully institutionalized, such as Total Quality Management (TQM) - see Westphal et al. 1997 for a discussion about the institutionalization of TQM - or Kaplan and Norton's (1996) Balanced Scorecard.

In addition, future research would benefit the understanding of how social, human and financial capitals are related in successfully initiating and carrying out scenario planning. Nahapiet (2011) has recently suggested that the value of different forms of capital depends on how they are linked with each other. The research in this dissertation has highlighted the importance of financial capital and the human capital of the leader - and participants - for undertaking the work. Future research would be beneficial to shed light on the exact nature of the inter-linking mechanisms between the different forms of capital and how they can best be leveraged through scenario planning.

Scenario planning as exploratory research to understand the emergent issue

Scenario planning is a form of exploratory research (Schoemaker 1993) that results in the creation of a set of structured systems about how the emergent issue could develop.

This research is undertaken using interviews, workshops, and desk research that constitutes a 'strategic conversation' (van der Heijden 2005) among a group of actors. In the second paper, this research was likened to the building of cranes where the scenarios provide vantage points in the conceptual future from which the present can be looked at anew (Normann 2001). The importance of the conceptual future is described by Seligman (as reported in an interview with Szalavitz 2011) in what he terms "prospection".

> The basic rock bottom premise of psychology for the last 150 years is that we're driven by our past. Positive psychology has come to convince me that we're drawn into the future…I'm all for past influences, the question is whether they are deterministic. Freud and the behaviorists argue that what we are at any given moment is billiard balls whose past determines our future course. That doesn't take into account that we are forever generating internal representations of positive futures and choosing among them… We haven't been good at teaching people to be good [evaluators] of possible futures…..The past certainly influences what we are, but I think we've had 150 years of social science and are still unable to predict what you're going to do tomorrow by asking what you did yesterday.

The literature review also highlighted the importance of learning for both scenario planning and social capital building; it suggested that scenario planning could provide a mechanism for accelerating the building of social capital. The fieldwork supports this proposition, especially for those directly involved in developing the scenarios. The development of the scenarios through exploratory research facilitates learning that creates cognitive resources leading to the creation of new shared systems of meaning and the building of relationships and networks.

There are some critical factors that impact the success of scenario planning as exploratory research. The choice of convenor is one of the most significant, as they design and execute the project; represent the sponsor; and interact (through interviews and workshops) with stakeholders. In all three cases, the processes researched were a result of

the design suggested by the convenors – and each design impacted the social capital that was built. In the EPO case, the publication of the external interviews before the scenarios were manufactured and the design of the compendium, proved useful mechanisms for reaching out to academics. In the OU1 round, significant social capital was built between the Vice Chancellors Executive (VCE) and the 23 project team members but not so much with the wider academic community; in the OU2 round, social capital was strengthened among the university governance groups such as the VCE and the Deans, although not significantly between the VCE and the wider academic community; and in Singapore, social capital was built among the team developing the scenarios, but not with external stakeholders such as known public figures in the blogging world (especially those active in the political space), who were not interviewed given the political ambiguity of what approaching them would mean.

Future research. The literature review points to the importance of the institutional context in building social capital and undertaking scenario planning. For both scholars and practitioners, paying attention to how the institutional context influences scenario planning, and the social capital built through it, is important. Questions to be considered include: What is the message being sent through the scenario planning and how does this 'sit' with other actions? If these are contradictory, how are they to be managed? What level of resources is being provided? How are those people with the least resources to be engaged? Are certain interests being privileged through the work? Further research on how institutional factors answer such questions and in so doing, influence the success of building new social capital through scenario planning, is warranted.

In addition, this research has shown the value of leveraging the conceptual future for building new social capital – through the process of learning together and looking back

from imagined futures to the present, in order to understand what new configurations of social capital might be needed. Further research would helpfully enhance understanding of how scenario planning differs from other futures methodologies, such as search conferences, visioning or the Delphi method, in terms of using the conceptual future to build social capital.

Building new social capital with scenario planning

The research finds that building new social capital by leading with the cognitive dimension with scenario planning is particularly relevant in the context of perceived or potential turbulence, where the lack of understanding and agreement about what is occurring in the environment can hamper the building of relationships. Scenario planning is a deliberate undertaking by a group of actors to make sense of an ill-defined, emergent situation – to activate deliberate cognition (Cerulo 2010; di Maggio 1997). As was discussed in paper three, the result is the creation of cognitive resources that facilitate new shared systems of meaning. The cognitive dimension has been under-attended to in the social capital literature, both in terms of what constitutes it and how it can be built (Nahapiet 2008; 2009). This research contributes to both of these deficits.

Investing in building the cognitive dimension of social capital using scenario planning enables the structural and relational dimensions to be built more as by-products. The structural dimension is created with scenario planning as people participate in interviews, workshops, meetings and conferences, developing and using the scenarios. Scenario activities provide a vehicle through which new connections can be made. In addition, the EPO case shows how the published scenarios can freeze agency for wider use (Latour 2005), facilitating further opportunities for people to build new connections. This is often in places that cannot be anticipated, such as the EPOs participation in the climate

change initiative with the United Nations Environment Programme and the International Centre for Trade and Sustainable Development. Important factors for building the structural dimension of social capital with scenarios are: the importance of the topic; sponsorship by the senior members of the organization; and the quality of the process and of the scenario product. In the absence of these, people are less likely to be motivated to participate in the work and thus less able to make new connections.

The relational dimension of social capital is created in scenario planning by actors taking the time to work and learn together in the production and use of the scenarios. By offering a process for actors to rise above day to day transactional issues they can come to collectively appreciate their inter-dependencies thereby positively contributing to the building of new relationships. There are three important factors for successfully building the relational dimension of social capital with scenario planning. The first is the choice of who to involve – and how to involve them. If people are 'picked' and the rationale for this choice is not communicated clearly, it can alienate others from the scenario process and from those sponsoring the work. The second important factor is the way in which the process is conducted. Trust among new actors to scenario planning needs to be nurtured and if the process is conducted in such a way that is not respectful, fails to follow procedural fairness, or lacks transparency, this trust can fail to be built (Elahi 2008; Wright & Rowe 2011). Trust is important in scenario planning because it provides the conditions for honest communication and for suspending disbelief (Frittaion et al. 2011; Wright & Rowe 2011). The third factor important for building relational social capital through scenario planning is the quality of the product – the scenarios. A poorly conceived set of scenarios can reflect negatively on the sponsor and those undertaking the work, hindering the building of new relationships. Alternatively, a good set of scenarios can prompt

invitations into all sorts of new forums. Thus, in building social capital, the value of what is being contributed through the scenario planning is important.

Finally, as was suggested in paper three, leading the building of social capital with the cognitive dimension suggests that a major motivation for actors becoming involved in scenario planning or using the scenarios is learning and a desire to make meaning – what Rydgren (2007:228) called "striving to obtain cognitive closure" about a new situation. This finding supports that found in the social capital literature; that people's motivations for building new social capital are more complex than rational actor theories alone would suggest.

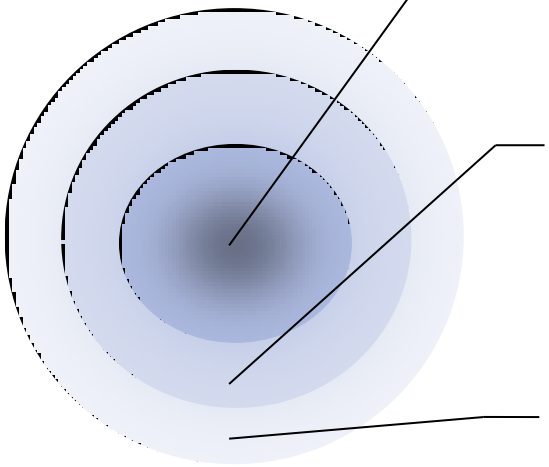
Further research. One of the methods for building new social capital discussed in the literature is the cueing of collective identities (Kramer 2006; 2009). Collective identities can be activated through the use of a common logo, name, for example, and this facilitates action in the interest of the collective. Identity in scenario planning, on the other hand, has been under-attended to – as evidenced in the review of the scenario literature and the discussion in paper one. Paper three underlined how people make sense of uncertainty by asking key questions about their identity – who they are, and who might they have to become in the future (Rydgren 2007). White et al. (2007) in fact argued that seeking to create an appropriate identity in uncertain situations is what creates action and leads to social formations. The importance of identity is why Weick (1995:24) lists it as the first property of sensemaking. His work also suggests that scenario planning can increase the range of identities people consider ex-ante to the turbulence, thereby increasing their sensemaking capacity as it unfolds. Further research on the links between identity and scenario planning to build new social capital, and the processes for doing this, would be valuable.

A network is created around a shared understanding of the emergent issue

Complementarity of resources is a key driver in the formation of networks (Grandori & Soda 1995). Complementarity is experienced in scenario planning with participants being chosen from a wide variety of backgrounds – for their different perspectives and skills. This complementarity places a premium on the creation of cognitive resources for diverse participants to work together. Scenario planning provides such new resources (language, frames, shared narratives, boundary objects and transitional spaces) that enable diverse actors to work and learn together to make sense of the ill-defined emergent situation. In working together and creating shared systems of meaning, scenario planning generates networks and communities.

I also find through the research, that different types of networks and communities are built with scenario planning, depending on the type of involvement the participants have in the projects. These types mirror the core-periphery configuration often found in networks (McPherson et al. 2001:427). "When networks within organizations or small communities are studied, they often display a core-periphery pattern, with a central group of closely interconnected people and a larger group of people who are less densely connected to the core and to each other". Figure II below outlines these different networks.

Figure II. Different types of networks formed through scenario planning



Inner (core team; sponsors; consultant/project leader)
Type of social capital built: bonding
Techniques**:** participative workshops, meetings, learning journeys, war games, interactive modelling, etc.

Middle (interviewees; workshop participants; key stakeholders)
Type of social capital built: bonding and bridging
Techniques**:** interviews and focus /discussion groups; expert consultation; role playing, etc

Outer (other stakeholders; wider community)
Type of social capital built: bridging
Processes: thought leadership – presentations, publications (hard and soft), interactive web pages, dramas, etc.

In network tie terms, the ties are strongest at the core and progressively weaker towards the outer (Granovetter 1973:1361). Granovetter defines the strength of a tie as "a (probably linear) combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the tie". In social capital terms, this suggests that over time, bonding social capital (with its strong ties) comes to characterize the core group as they work intensely together to produce the scenarios. While bridging social capital (with its weaker ties) characterizes those who have a more occasional involvement such as interviewees, workshop participants, etc. This supports Burt's (2001) view that while the value of social capital is found in weak ties and bridging social capital, strong ties and bonding social capital are necessary to realize this value. This is a key reason why I find in my research that most new social capital is built by those directly involved.

The research also indicates the different techniques that build new social capital at the core, the middle and the periphery. In the core or the inner part of the network the development of strong bonds provide the conditions for new understandings of complex knowledge to be generated (Hansen 1999; Newell et al. 2004). Techniques include participative workshops, meetings and learning journeys as participants' undertake exploratory research to build the scenarios. The middle circle includes key stakeholders, 'remarkable people' (van der Heijden 2005) and other experts where the aim is to access new information and inform participants about the project. Here, bridging social capital is most important and is built with techniques such as interviews and focus groups. The outer circle includes a wider set of stakeholders that an organization wants to influence through thought leadership. Here bridging and linking social capital are important and are built through techniques such as publications (hard and soft); presentations; and interactive web pages.

Further research. Understanding the different types of social capital built through scenario planning highlights the importance of considering who is to be involved in the work and in what role (part of the core team, as interviewees, as end users of the scenarios)? That is, what social capital is to be created through the scenario planning project? While participants in scenario planning are often chosen for the intellectual contribution they can make, a social capital perspective places the focus on with whom to build relationships? Further research, particularly from a social network perspective, would help determine the value of identifying key network nodes relevant to the situation being explored, prior to the scenario planning so as to involve them in relevant ways in the work.

Increases perceived adaptive capacity - helping people 'settle in' to the future

The culmination of creating social capital through scenario planning is actors' improved perceived adaptive capacity to address ill-defined emergent situations. In all three cases there is evidence that those most intimately involved (such as the convenors, sponsors, leaders and core participants), knew more about the subject than just about anyone else at the time they were undertaking the project. This significantly increased their perceived adaptive capacity, helping them to 'settle in' to possible futures. Beyond core participants, the success of the scenarios in creating new shared systems of meaning and improving adaptive capacity depends on the quality of the scenarios (as described in paper two), the role they can play in providing thought leadership, and the way they are translated to meet the needs of end users (Czarniawska & Joerges 1996; Latour 2005).

The new social capital that is built through scenarios, although nascent, can provide the basis by which new actors can: access information (Lin 2001; Adler & Kwon 2002; Sandefur & Laumann 1998), increase solidarity or common interests (Sandefur & Laumann 1998), create and maintain strategic opportunities or real options (Nahapiet 2009), and influence network members and available resources (Lin 2001; Adler & Kwon 2002). In addition, prior research has shown that when people experience uncertainty they turn to their networks for insight and ways to minimize it (Baker & Faulkner 2009; Burt 2005). As Burt (2005:94, 95) argued: "Who you know is the available path to stable certainty…In short, people often decide on colleagues before they decide on ventures...". Extending the social capital that people have access to improves' their perceived adaptive capacity by providing them with a richer set of connections for better understanding and addressing turbulence.

One of the key impediments to building new social capital is the structural, relational and cognitive lock-in that can occur. Scenario planning can address the structural constraint by inviting a wide cohort of new people to participate in developing the scenarios, and through sharing thought leadership with the published scenarios. Scenario planning can address relational lock-in issues by providing the opportunity for new relationships to be tested and developed in the production and use of the scenarios. And cognitive lock-in can be addressed by scenario planning providing the resources for actors to reframe the present, creating new systems of shared meanings and understanding different viewpoints better.

The finding in this research of the value of foregrounding the cognitive dimension of social capital for improving perceived adaptive capacity in the face of turbulence goes some way to explaining the lack of social capital literature in Morgan's (1986) flux and transformation and psychic prisons metaphors. These metaphors are about re-perception and logics of change – of how systems evolve. Systems scholar Meadows (1999:2), argues that the most effective place to intervene in a system to bring about change is "The mindset or paradigm out of which the system – its goals, power structure, rules, its' culture – arises". This is a key to better understand the power of scenario planning – its' role in building new social capital by generating new cognitive resources and shared systems of meaning among a system of actors.

Further research. Traditionally, scenario planning has been judged mostly by the degree to which it can generate new insights and have these insights incorporated into strategic options for the organization. The research suggests that another quality standard by which to judge scenario planning effectiveness is the degree to which it can help build new social capital and its role in creating common ground (Emery & Trist 1965) to address perceived

adaptive capacity. Further research to develop a quality assessment tool for scenario planning related to the building of new social capital would be useful. This would take into account both deliberate social capital-building (those actors with whom the work purposefully sought to engage with); the unintended, third-party places where it could not be previously envisaged that the scenario planning would facilitate social capital building; and where and why the intended social capital building failed. The quality tool would also attend to how nascent social capital, built through the scenario project, might be further developed. Because social capital dies if not attended to (Adler & Kwon 2002; Nahapiet & Ghoshal 1998) and scenario planning is conducted as a project, ongoing activities or communications are required to capitalize on the social capital that has started to be built so as to prevent it from withering away.

Summary

In this section, I have presented a model as to how scenario planning and the building of new social capital are related. In addition, I have sought to highlight future research opportunities so that this agenda can be further advanced. Before concluding the dissertation, I now turn to providing a personal reflection on my experience of undertaking my doctoral research.

REFLECTION ON MY RESEARCH JOURNEY

It has been a great privilege to have undertaken this doctoral research. This is largely due to the people I have had the good fortune to interact with – both scholars from different disciplines and practitioners in the organizations who served as case studies in the research. While the content insights from these interactions are evident to see in the proceeding chapters of this dissertation, in this section, I would like to reflect on three key

learning insights I gained in respect to the actual research process. These relate to: first, my role as researcher; second, the use of mixed methods; and third, the pursuit of the three paper route.

My role as researcher. I anticipated my prior experience with scenario planning would be helpful in my role as researcher (Creswell 2003). In Australia, I had undertaken a number of scenario planning projects and was thus familiar with issues related to design and execution. When going into the field, I was aware this experience would shape what I saw and interpreted and in turn what I saw would shape how I thought about things further – in true reflexive fashion where the representation shapes the represented situation and vice versa (Woolgar 1998). While my experience was helpful in the field and making sense of the data, there were two major consequences of this reflexivity.

First, I became increasingly aware of the fine line between where the prior experience of a researcher can enrich a study and where it can detract from it. Given my experience with scenario planning I had already formed my own impressions about what constituted successful projects. However, when I entered the field sites and communicated with the 80 interviewees and heard from the 326 survey respondents, I was quickly reminded of the richness, complexity and contingencies related to the work. As I interacted with people and the data I became aware of needing to hold on loosely to my prior judgements so that the cases could 'speak' on their own terms. (I was helped here by the use of multiple methods and data sources which enabled me to fully ground my observations in the three case settings.) I also came to realize that my research would be best served if my stance was that of learning so that my prior impressions were open to being reviewed and/or developed rather than serving as narrow, aprior categories of judgement. As Hammersley and Atkinson (2007:16) have noted: "...we can work with

what we currently take to be knowledge, while recognizing that it may be erroneous; and engaging in systematic inquiry where doubt seems justified. And in doing this we can still make the reasonable assumption that we are able to describe the phenomena as they are, and not merely as we perceive them or how we would like them to be".

Second, and related, is that early in my doctorate I was focused on being rigorous in the design and execution of the study and regarded my researcher role as that of a comparatively detached observer (Junker as cited in Hammersley & Atkinson 1995). However, once in the field and analyzing the data, I became much more sensitive to the nuances and challenges of undertaking scenario planning (complex projects seeking to bring about change in large, incumbent organizations) and sympathetic to what was trying to be achieved in the three case studies. My increased sensitivity did not compromise the rigor of the study – due largely to the use of triangulation in data collection and analysis – but it did impact the way in which I thought about and presented the findings. That is, I sought to reflect the contingencies and nuances of the work in the cases and the real challenges in building new social capital (Lin 2001) with scenario planning. My empathy towards the cases was also clearly a result of my own experience such that I understood the complexities involved in successfully undertaking the work. As a result of this experience, I realized why much research on scenario planning is often carried out by reflective practitioners (Schon 1983) – as I suspect research in many professional practice areas is.

The use of mixed methods. The critical realist epistemology (Bhaskar 1978; Collier 1994) underpinning my study, favored the use of multiple and mixed methods (Johnson & Duberley 2000). I found this approach to provide significant richness to the outcomes of the research for triangulation and correcting for data biases. In addition, the use of multiple

methods provided me with a significant opportunity to develop my expertise as a researcher. As one of the purposes of a doctorate is to develop skills in advanced research methods I sought to make the most of this opportunity. In particular, while I was much more comfortable with qualitative methods I was keen to move out of my comfort zone and embrace some quantitative methods where these were needed. This resulted in my undertaking a bi-partite affiliation network analysis (Wasserman & Faust 1994). In hindsight, I feel the experience of using a range of methods has enhanced my future research capabilities preventing me from approaching all subsequent research situations as a nail just because a hammer is the only tool I possess.

However, the use of multiple and mixed methods added a degree of complexity to my research. Developing a competence in four different research methods - interviewing, prescriptive surveys, network analysis, and metaphorical analysis – as well as executing them well within the time constraints of the doctoral program was challenging. In addition, social capital is a multi-dimensional concept variously defined and understood by research participants which poses methodological challenges - such as the correct wording for interview schedules and surveys (Coole 2009). Thus, I came to realize the limits in being proficient in both qualitative and quantitative methods – especially in complex research areas such as social capital. To address these limits in the future, I will most likely seek to work with others whose research expertise complements my own which is largely qualitative.

The three paper route. When I commenced the doctoral program in 2007, a three paper dissertation option was provided as an alternative to the traditional manuscript. I chose this option for a few reasons. First, I felt that to graduate from the doctoral program with papers that were 'publishable' would be helpful in seeking further employment. Second,

this route would provide me with another valuable learning opportunity, namely, experience in producing papers for publication. Third, it suited my learning style in being able to segment the doctorate into smaller segments or sub-projects. In reality however, I found it a challenging route.

First, producing three papers regarded as 'publishable' in good journals within the timeframe of the doctorate was a challenge. In addition, it was not completely clear to me what was regarded as a 'good journal'. Thus, I sought to aim for top tier journals, but I would be the first to acknowledge that performing to this level within the doctoral program was extremely difficult for me. Second, I understood the three paper route was to be presented as an integrated project, but at the same time to be made up of three discrete papers. I found this a difficult balancing act at times as I sought to reflect the integrated project dimension through the use of a binding narrative about the purpose of the research, an overarching literature review and the use of chapters - as would be expected in a traditional manuscript – while trying to present the three papers as discrete contributions. Balancing the two objectives also resulted in some duplication between the papers and the introduction and discussion chapters of the dissertation. I apologize to the reader if in places I have failed in finding the right balance between these two objectives.

CONCLUSION

This dissertation has explored the links between scenario planning and the building of new social capital in organizations in the context of addressing perceived or potential turbulence. In doing so it has contributed to the understanding of how new social capital can be built and the value of the cognitive dimension in this regard; and provided a further theoretical underpinning to the growing interest in the practice of scenario planning, including a new quality criterion by which practitioners can judge its effectiveness. While

my research has necessarily been exploratory, a number of further research opportunities have been identified that outline an agenda for fully explicating the links between scenario planning and the building of new social capital. As turbulent environments become more salient (Emery & Trist 1965; Ramirez et al. 2010; Rigby & Bilodeau 2007) and strategic management becomes increasingly conceptualized as a relational process (Starkey & Tempest 2004; Venkataram & Subramaniam 2002), this research agenda will take on more importance.

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