



Rigidities of imagination in scenario planning: Strategic foresight through 'Unlearning'

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ABSTRACT

The emergence of strategic foresight from scenarios has constantly puzzled theorists. Whilst practitioners and scholars of scenario planning contend that scenarios generate strategic foresight by both stretching a manager's mental model by exposing them to a wide range of equally plausible futures, and triggering and accelerating processes of organisational learning, the true nature of this link between strategic foresight and organisational learning remains vague and undertheorised. Our paper tackles this puzzle by explicitly focussing on how strategic foresight emerges from the organisational learning process that unfolds during scenario planning. We undertook a 24-month long longitudinal study capturing both 'actions' and 'reflections' of a leading Scotch whisky manufacturer during their scenario planning exercises. Surprisingly, and perhaps counterintuitively, our findings unearth the role of 'unlearning' rather than 'learning' as a key mechanism that leads to the emergence of strategic foresight within the scenario planning process. Further reflection on the 'unlearning process' reveals that unlearning involves a 'letting go' or relaxing of deeply held assumptions and this in turn inadvertently leads to strategic foresight. Overall, by developing and introducing 'unlearning' as a key mechanism for the generation of strategic foresight, our paper aims to improve the effectiveness of scenario planning interventions as practiced.

1. Introduction

Strategic foresight is deemed to play a crucial role in determining how organisations successfully compete, evolve, and survive in dynamic and disruptive environments (Tapinos and Pyper, 2018; Ramirez and Selsky, 2016; Sarpong and Maclean, 2016; Rhisiart et al., 2015; Peter and Jarratt, 2015; Coates et al., 2010). Scenarios have a long history and well established reputation in helping organisations generate strategic foresight (Spaniol and Rowland, 2018; Derbyshire and Wright, 2017; Wright et al., 2015; Ramirez et al., 2011; Varum and Melo, 2010; Cairns et al., 2004; van der Heijden et al., 2002; Duncan and Wack, 1993; Wack, 1985a, 1985b). Scholars contend that scenarios generate strategic foresight by offering "analysis, communication, education of the organisation and stakeholders in both possibilities and ways of thinking" (Ringland, 2010, p. 1495) about the future.

Foresight from scenarios, as prior research suggests, results from the

stretching of a management team's mental models (Cornelius et al., 2005; Cairns et al., 2004; Grant, 2003; Schoemaker, 1995), opening up of management thinking by developing a number of equally plausible futures (van der Heijden et al., 2002) that help overcome managerial blind-spots (Day and Schoemaker, 2004) and by triggering and accelerating the processes of organisational learning (Chermack and van der Merwe, 2003; Bootz, 2010). Implicit in these theoretical conjectures are the strong ties linking strategic foresight and learning processes (Boots et al., 2019; Haeffner et al., 2012, 2010; Bood and Postma, 1997). However, despite these conjectures, "the true nature of this link remains vague" (Boots, 2010, p. 1588) and a compelling explanation for how scenarios actually lead to strategic foresight is still missing in the scenario literature (Boots et al., 2019; Tapinos and Pyper, 2018; Rhisiart et al., 2015; Haeffner et al., 2012). So how does organisational learning emanating from scenarios generate strategic foresight?

There are three main reasons why this theoretical lacuna persists. First, despite claims that scenarios offer support to strategic decision

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makers (Rohrbeck, 2012; Postma and Liebl, 2005), much of the scholarship on scenarios has been plagued by both a “dismal” state of theory and “methodological chaos” (Spaniol and Rowland, 2018, p. 33). “Scenarios”, as Wilkinson et al. (2013) aptly put it, “are best described as a highly innovative, pragmatic field of practice grappling with theoretical grounding” (p. 699). Progress would therefore depend on developing a coherent theoretical framework that resonates with how scenarios and their corresponding impact unfold in practice.

Second, much of the scenarios research has been influenced by three dominant traditions, namely, intuitive-logic models, *la prospective* models and the probabilistic modified trend models (Varum and Melo, 2010; Bradfield et al., 2005). Important distinctions between these traditions notwithstanding, much of the theoretical conjectures about foresight from such research rely on different understandings of process. Process, according to Van de Ven (1992, p. 169), is often used in three ways in the literature: (1) a logic used to explain a causal relationship in a variance theory, (2) a category of concepts that refer to actions of individuals or organisations, and (3) a sequence of events that describe how things change over time. While the first two understandings of process are widespread within the intuitive-logic, *la prospective* and the probabilistic modified trend traditions of scenario planning, there is a paucity of research that explores scenarios from the third perspective. As Van de Ven (1992) astutely observes, in the first two instances, theorising depends on a story or logic that “is used to explain why an independent (input) variable exerts a causal influence on a dependent (outcome) variable” (p. 170) without the theorists actually observing the process. Theoretical advancement would thus depend on embracing a ‘process’ approach (Langley et al., 2013, 1999) where cross-sectional observations or retrospective case histories are replaced by studying the actual “sequence of events” (Poole et al., 2000) that describe how and why scenarios generate strategic foresight.

Third, even though several key scholars have suggested that learning is a key component of scenario planning (van der Heijden, 2005; de Geus, 1998; Schwartz, 1991) and plays a critical role in the generation of strategic foresight (Bootz et al., 2019, 2010; Chermack and van der Merwe, 2003; Bood and Postma, 1997), it is surprising that little attempt has been made to integrate the extensive literature on organisational learning with the theory on scenario planning. As Chermack (2005) correctly observes “while the conceptual case linking learning and scenario planning has been made, there are no empirical studies that support or refute this relationship” (p. 62). Thus, understanding the mechanisms through which the learning processes that unfold during scenario planning generate strategic foresight would not only require a deeper theoretical integration of the literatures on organisational learning and scenario planning but would also warrant an empirical exploration into how strategic foresight emerges from the organisational learning process.

To summarise, the theoretical fragmentation within the scenarios literature, the underdeveloped status of longitudinal ‘process’ research within scenarios scholarship and the relatively little attention devoted to integrating the literatures on strategic foresight and organisational learning have all ensured that the complex processes that link organisational learning to strategic foresight remain undertheorised and underexplored. Consequently, on one hand prior research has established the contribution of scenario planning to a culture of learning in organisations (Bootz et al., 2019; Haeffner et al., 2012; Chermack et al., 2005; de Geus, 1998) while on the other hand, prior research has also highlighted the contradictions of such claims by demonstrating how scenario planning can actually narrow mental models and make organisations even more prone to ‘blindsiding’ than they would be without it (Chermack et al., 2015; Derbyshire and Wright, 2014; Wright et al., 2013; Wright and Goodwin, 2009). Therefore, we still know very little about the links between organisational learning and strategic foresight.

So how does strategic foresight emerge from scenario planning? Our paper aims to answer this question, both theoretically and empirically, by unpacking the ‘black box’ that links organisational learning, strategic

foresight and the scenario planning process. To do this, we first undertook a three-part literature review. In part one we analysed the literature that links strategic foresight to the scenario planning process. In part two, we consult the literature on organisational learning and review the findings from the learning literature in tandem with the theories linking learning with strategic foresight. In part three, we explore the role of learning and ‘unlearning’ in generating strategic foresight. A synthesis of our review reveals that scenario theorists have unproblematically imported assumptions of organisational learning into the scenarios literature. Since organisational learning is susceptible to ‘learning traps’ (Levitt and March 1988), this could lead to strategic oversight rather than foresight (March, 2008). The organisational learning literature review also highlights the crucial yet under-emphasised role played by ‘unlearning’: a promising concept for overcoming these limitations.

To reinforce these emergent theoretical insights, we undertook a 24-month long longitudinal study capturing both ‘actions’ and ‘reflections’ (Bootz et al., 2019, 2010) of a leading Scotch whisky manufacturer during their scenario planning exercises. Surprisingly, and perhaps counterintuitively, our findings unearth the role of ‘unlearning’ rather than ‘learning’ as a key mechanism that leads to the emergence of strategic foresight within the scenario planning process. Drawing on empirical evidence from scenario planning workshops, we outline the stages of the unlearning process and argue that strategic foresight from scenarios stems from ‘unlearning’. By exploring the etymological German roots of the word ‘learn’ which originally meant ‘to furrow’, unlearning, we argue, implies eradicating furrows and returning to the unfurrowed flux of organisational experience from which new possibilities are ‘revelated’ (Paton et al., 2014). Unlearning requires letting go or relaxing the rigidities of previously held assumptions and beliefs, rather than forgetting them, as part of the general approach to creating strategic foresight.

Overall, our paper makes three significant contributions. First, we offer a theoretical analysis of the links between organisational learning, strategic foresight and the scenario planning process. This exercise not only clarifies the conceptual links between these previously unintegrated concepts but also allows us to unpack the complexities associated with learning and foresight. Second, our process methodology offers yet another arrow into the methodological quiver of scenario scholars. By empirically tracing the emergence of strategic foresight from scenario planning, our process approach offers a more robust means to fortify foresight theory. Finally, by developing and introducing ‘unlearning’ as a key dynamic within the scenario planning process, our paper aims to improve the effectiveness of scenario planning interventions as practiced.

The remainder of our paper is structured as follows. First, we undertake a three-part literature review that analyses the conceptual links between strategic foresight, scenarios and organisational learning. Next, we present the methodology used for investigating the research question. The following two sections present the findings and analysis from our longitudinal field research. In the penultimate section, we discuss the implications of our findings and analysis for the theory and practice of strategic foresight. Finally, we conclude by summarising our contributions and suggesting avenues for future research.

2. Literature review

2.1. Strategic foresight and the scenarios planning process

The scenario planning approach has been widely deployed and successfully used to boost strategic foresight within a wide range of organisations including Shell (Cornelius et al., 2005; de Geus, 1998), British Airways (Moyer, 1996), ICL (Ringland, 1998) and Nokia (Siilasmaa, 2019). Organisations use scenarios to “create and maintain a high-quality, coherent and functional forward view, and to use the insights arising in useful organisational ways” (Slaughter, 1995;

Ringland, 2010, p. 1494). Yet, despite the enthusiastic embrace of scenarios by strategy practitioners, the scholarship on scenarios reveals a “paucity of theory” (Bradfield et al., 2016, p. 60) and “methodological chaos” (Martelli, 2001). The persistence of these theoretical gaps have prevented scholars from developing a comprehensive understanding of the links between strategic foresight and scenario planning (Spaniol and Rowland, 2018; Wright et al., 2015; Coates et al., 2010).

The primary source of this methodological chaos has been the imprecise use of the term ‘foresight’. Within the scenarios literature, ‘foresight’ has been “used to designate the process as well as those tools used in creating the image” (Coates et al., 2010, p. 1423) of the future. This failure to distinguish between three very distinct aspects of ‘foresight’ studies, namely, the scenario planning process, the resulting scenarios and the strategic ‘foresight’ derived from these scenarios, has led to a proliferation of foresight research where theorists speak simultaneously of the appearance of new “mental models” (Ringland, 2010, p. 1498) as scenarios and of scenarios as the *process* that creates or brings strategic foresight into being. Scenarios are, in other words, simultaneously reduced to both a mechanism and an output. The result has been an assembly of empirical generalisations which neither resonate with the scenario planner’s ongoing challenges nor are general enough for practitioners to adopt. Theory advancement, therefore demands precise conceptualisation that captures the nuances of the phenomena under investigation by clearly distinguishing between the scenario planning process, the resulting scenarios and the emergent foresight.

In order to make this distinction, we define the scenario planning process as the means of “creating stories of equally plausible futures and planning as though any one could move forward” (Tucker, 1999, p. 70). Scenarios are then defined as a “hypothetical sequence of events leading to a possible future” (Kahn and Wiener, 1967, p. 6). Scenarios, therefore, emerge from the scenario planning process. Strategic foresight refers to “the ability to see through the apparent confusion, to spot developments before they become trends, to see patterns before they emerge, and to grasp the relevant features of social currents that are likely to shape the direction of future events” (Whitehead, 1967, p. 89). This definition accommodates two contrasting understandings of ‘foresight’. In the first, foresight refers to insights gained from anticipations of the future (Tapinos and Pyper, 2018; Ringland, 2010; 1998) whereas in the second, foresight is attained through a better understanding of the ‘present’ in the here and now. We are thus able to account for two distinct yet complementary understanding of ‘foresight’ which is not readily evident within the mainstream scenarios literature. In other words, foresight is derived from scenarios. Fig. 1 below summarises the distinction between the scenario planning process, resulting scenarios and strategic foresight.

Reconceptualising scenario planning as a process and scenarios and strategic foresight as outcomes of that process has an added advantage of avoiding the “episodic, linear nature” of scenarios that “makes them appear ‘cognitivist’ and ultra-rational in form” (Sarpong and Maclean, 2016, p. 2813). Put differently, the clear distinction between the scenario planning process, scenarios and strategic foresight allows theorists to pry open the scenario planning process and explore the temporal sequence of activities that lead to scenarios and to the

subsequent strategic foresight that these scenarios yield. Conceptual clarity on the links between scenarios and strategic foresight thus makes it possible to ask: How do scenarios generate strategic foresight?

2.2. Organisational learning, learning traps and strategic foresight

Several scenario scholars have acknowledged the crucial role played by organisational learning in the generation of strategic foresight (Bootz et al., 2019, 2010; Chermack, 2005; van der Heijden, 2004; Chermack and van der Merwe, 2003; Bood and Postma, 1997). Prior research has defined organisational learning as “the process of improving actions through better knowledge and understanding” (Fiol and Lyles, 1985, p. 803). Scenario planning scholars contend that learning allows the organisation to re-perceive its environment (Wack, 1985a, 1985b) and this re-perception leads to strategic foresight (Chermack, 2005). Yet, several scholars have disputed this logic. They argue that scenario planning can also inhibit learning by distorting perceptions of environmental uncertainty by using simplistic assumptions that narrow mental models and limit the range of possible outcomes (Derbyshire and Wright, 2014; Wright et al., 2013; Wright and Goodwin, 2009). In other words, organisational learning from scenarios can lead to either strategic foresight or oversight (Chermack et al., 2015). Since little effort has been devoted to assessing the cognitive and evaluative limitations on organisational learning, assessing this claim requires us to re-examine the relationship between scenarios and the organisational learning process.

In scrutinising the scenarios literature to delineate the relationship between scenarios, organisational learning and strategic foresight, we find mostly conjunctures and limited empirical research (Bootz et al., 2019; Chermack et al., 2015; Haefner et al., 2012). The prevailing widespread assumption within the scenarios literature is that by “building a set of internally consistent and imagined futures in which decisions about the future can be played out” (Chermack, 2011, p. 16), scenarios can foster organisation learning that lead to strategic foresight. Put differently, scenarios generate strategic foresight through organisational learning where learning is defined as “the detection and correction of errors” and errors are defined as “any feature of knowledge or of knowing that makes action ineffective” (Argyris, 1976, p. 365). Thus for organisational learning to yield strategic foresight, we must show *how* scenarios led to the detection and correction of errors. Without this, it is a risk to assume that organisational learning leads to strategic foresight.

Debates over whether organisational learning should be understood as a change in cognition or behaviour are a recurring theme within the learning literature (Argote and Miron-Spektor, 2011; Fiol and Lyles, 1985). The implications of this distinction between cognition and behaviour find expression within the scenarios literature when scholars make a distinction between “foresight attitude” and “foresight activity” (Bootz, 2010, p. 1588). The former refers to the “cognitive dimensions of anticipation and to individual learning” and the latter refers to the behaviour of a “groups of individuals participating in more interactive learning within organisations” (Rhisiart et al., 2015, p. 126). Due to these distinctions, definitions of organisational learning assume a change in the organisation’s knowledge that occurs as a function of experiences (Argote and Miron-Spektor, 2011; Easterby-Smith et al., 2000). In other words, experience plays a key role in linking the organisational learning process that unfolds during scenario planning with strategic foresight.

Therefore, when scenario theorists like Bood and Postma (1997) incorporate Kolb’s (1984) learning theory and Piaget’s (1977, 1937, 1936) learning theory, or when Chermack and van der Merwe (2003) incorporate Senge’s (1999) three stage organisational learning process, or when van der Heijden (2004) invokes a constructivist organisational learning process, or when Bootz et al. (2019) draw on Argyris and Schön’s (1978) theory of single and double loop learning, they are all implicitly emphasising the crucial role of concrete experiences that

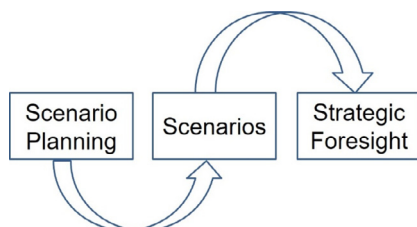


Fig. 1. Relationship between scenario planning, scenarios and strategic foresight.

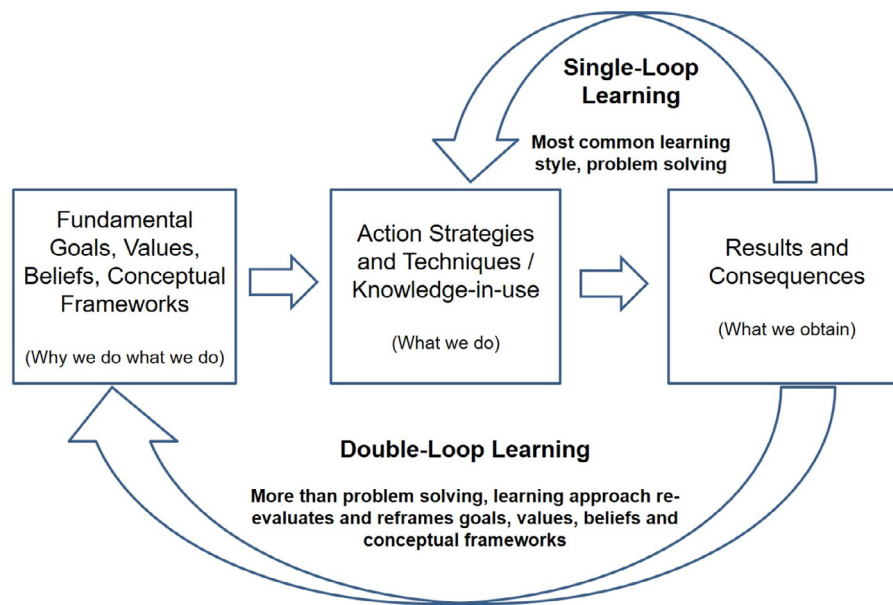


Fig. 2. Relationship between single and double loop learning.

groups of individuals participating in the scenario planning process draw on while building a set of internally consistent and imagined futures. Since building plausible scenarios requires drawing on experiences from the past to imagine a hypothetical future, experience plays a key role in linking scenarios and organisational learning. Yet, learning from experience is fraught with difficulties and plagued by three significant learning traps, namely, the competency trap, superstitious learning trap and the myopia trap (Levitt and March 1988; Levinthal and March 1993).

The competency trap arises when learning from experience encourages organisations to stick to and refine the skills that they have already honed to a finer degree rather than spend time developing new skills (March and Coutu, 2006). Organisations learn from experience what strategies to use, thereby gaining competence in the strategies they use. If the organisation uses a strategy and experiences favourable outcomes, they will repeat the strategy. The more a particular strategy is used, the more competent the organisation using it becomes. Competency increases the likelihood of a favourable outcome which in turn reinforces the use of the strategy. Thus, the organisation could quickly become firmly committed to a particular strategy, given their competence at it. However, they are likely to be trapped with a previously successful strategy that has become inferior when circumstances change by the positive feedback loop of their own competency (March, 2008, p. 88). The competency trap can therefore lead to strategic oversight.

“Superstitious learning” trap, as Levitt and March (1988) describe, “occurs when the subjective experience of learning is compelling, but the connections between actions and outcomes are misspecified” (p. 325). Situations where the subjective evaluation of success or failure is insensitive to actions that the firm takes can trigger superstitious learning within an organisation. For example, executives from an oil pump manufacturer might believe that higher profits in years where the global oil prices are high are a result of their superior management practices. However, when global oil prices are low, the same executives are likely to blame the business environment rather than their management practices for the drop in profits. The superstitious learning trap can thus cause strategic oversight.

Finally, the myopia trap refers to the tendency within experience based learning to overlook distant times, distant places, and failures (Levinthal and March, 1993). As Levinthal and March (1993) explain: “The first form of myopia is the tendency to ignore the long run. The short run is privileged by organisational learning. As a result, long run

survival is sometimes endangered. The second form of myopia is the tendency to ignore the larger picture. The near neighbourhood is privileged by organisational learning. As a result, survival of more encompassing systems is sometimes endangered. The third form of myopia is the tendency to overlook failures. The lessons gained from success are privileged by organisational learning” (p. 101). Consequently, myopia leads firms to underestimate the risks of failure. The myopia trap is thus yet another source of organisational oversight.

In light of these learning traps, some organisational learning scholars have proposed ‘unlearning’ as the means for overcoming the challenges of learning from experience (Tsang, 2017a, 2017b; Starbuck, 2017; Howells and Scholderer, 2016; Becker, 2010, 2008; Nystrom and Starbuck, 1984; Hedberg, 1981).

2.3. Learning, unlearning and strategic foresight

To recap our earlier argument, to assert that organisational learning generates strategic foresight requires theorists to demonstrate *how* learning from scenarios lead to the detection and correction of errors where errors refer to knowledge-in-use that makes action ineffective. *Therefore, detection of errors can become both a condition of organisational learning and a consequence of it.* Scholars of organisational learning have acknowledged this argument by distinguishing between ‘single loop’ and ‘double loop’ learning (Argyris and Schön, 1978; Bootz et al., 2019).

Single loop learning occurs when errors are corrected without altering “the fundamental design, goals and activities” (Argyris, 1976, p. 367) of the organisation. Single loop learning thus involves learning from experience. However, learning from experience, as we have already seen, is fraught with learning traps. Learning traps ensure that errors are no longer detected, corrected or both. Learning traps thus inhibit organisational learning which in turn suppresses the generation of strategic foresight. Therefore, overcoming these ‘learning traps’ to create strategic foresight requires double loop learning.

Double loop learning occurs when the fundamental design, goals and activities of the organisation are confronted, challenged, questioned (Bootz et al., 2019; Argyris and Schön, 1978) and are then recognised as the cause of ineffective action (Argyris and Schön, 1978). This triggers a re-imagination of an organisation’s “system of norms, beliefs and organisational rules” (Bootz et al., 2019, p. 93). The relationship between ‘single’ and double loop learning is summarised in

Fig. 2.

For example, when photography companies like Fujifilm and Kodak, develop and improve on their technical expertise in silver-based photosensitive film making materials, the resulting developments and improvements are a result of single loop learning. However, if these firms switch to develop and improve on the key technologies of the digital era, such as imaging software and digitalisation of printing plates as the basis for photography, then these are considered to be outcomes of 'double loop' learning. This is because, without double loop learning, the 'learning traps' would ensure that Fujifilm and Kodak continue to build on their proprietary technical expertise – the photography technology built up over the years, including high precision coating of chemicals on film – which would no longer be relevant in the digital era. Put differently, within these firms, strategic foresight would require not only 'learning' the limits of chemical photography technology (i.e. single loop learning) but also replacing the chemical photography technology paradigm with the digital photography technologies paradigm (i.e. double loop learning).

In other words, single loop learning can detect errors (ineffectiveness of chemical photography technology in a digital era) but because of 'learning traps' cannot correct them thereby causing these errors to persist. Overcoming these errors requires overcoming the 'learning traps' which in turn requires double loop learning. Given the crucial role of double loop learning for strategic foresight, we must now ask: How can scenarios generate strategic foresight by effecting a switch from single to double loop learning?

Prior research has speculated on the crucial role played by 'unlearning' in facilitating this switch (Starbuck, 2017; Tsang, 2017a, 2017b). While the literature offers several definitions for 'unlearning', it broadly refers to "the process by which individuals and organisations acknowledge and release *prior* learning (including assumptions and mental frameworks) in order to accommodate new information and behaviours" (Becker, 2010, p. 252). Unlearning can thus facilitate new knowledge creation by enabling firms to discover the limits of their current beliefs and methods (Starbuck, 1996). However, recent research by Howells and Scholderer (2016) has called into question some of the assumptions underpinning 'unlearning'.

According to Howells and Scholderer (2016), unlearning is an 'empirically unwarranted' concept for two reasons. First, they claim that 'unlearning' lacks a firm root within the psychology literature from which it claims to originate (Hedberg, 1981; Nystrom and Starbuck, 1984) and so question the relevance of 'unlearning' research for management practice. Yet, proponents for 'unlearning' counter this first claim by arguing that "whether and how far the concept of organisational unlearning has a firm root in the psychology literature should not significantly affect its usefulness in advancing organisational research" because as "a metaphor, *organisational unlearning* helps researchers describe certain phenomena" (Tsang, 2017a, p. 40) that has a significant bearing on management practice. They claim that 'unlearning' helps to "label phenomena that cannot be comfortably fit in the domain of organisational learning" and argue that 'unlearning' aids theory development by offering "precision in conceptualisation so that nuances of different phenomena can be captured" (Tsang, 2017a, p. 42) by researchers.

Second, central to Howells and Scholderer's (2016) critique of 'unlearning' is their proposal to replace 'unlearning' with 'theory-change'. They claim that such a substitution can be made without "loss of intellectual value" (p. 459). According to them, 'theory' and 'theory-change' are defined as:

"Theory is a "system of ideas held as explanation of a group of facts or phenomena" (Oxford English Dictionary 2nd edn.1989) and our understanding of the process of theory-change is that the acquisition of new facts or phenomena may challenge established theory so that the theory may eventually be set aside in favour of an alternative with perceived superior explanatory power" (Howells and

Scholderer, 2016, p. 445).

However, theorists sympathetic to 'unlearning' have questioned Howells and Scholderer's (2016) notion of 'theory change' by arguing that it's "sloppy wording is not conducive to formulating rigorous arguments" (Tsang, 2017a, p. 45). As Tsang (2017a) astutely observes:

"Unlike theories, practices are created for the purpose of achieving certain objectives, rather than explaining "a group of facts or phenomena". By the same token, one practice is replaced by another, not because the latter is perceived to have "superior explanatory power". Last but not the least, it makes no sense to talk about the acquisition of new phenomena, because phenomena can be observed but not acquired" (pp. 44–45).

This ensuing debate between the opponents and proponents of 'unlearning' has led to calls for a more precise conceptualisation and greater clarity on the role of 'unlearning' within organisational learning (Tsang, 2017b; Starbuck, 2017). However, unlearning remains a relatively underdeveloped concept within both organisational learning and strategic foresight research. Therefore, further research is required to better understand the links between organisational learning, unlearning and their role in generating strategic foresight from scenarios.

2.4. Summary

In this three-part literature review, we have analysed and evaluated research that theorises the links between scenarios, strategic foresight and organisational learning. Our review has identified imprecise conceptualisation where scenarios are simultaneously considered as both, a mechanism and an output, as the primary reason for the field's methodological chaos. The review also establishes the need for more *process research* (Langley, 1999; Van de Ven, 1992; Van de Ven and Huber, 1990) within scenarios and foresight studies. Exploring the theoretical links between strategic foresight and organisational learning allowed us to show how much of the scenario literature assume that organisational learning straightforwardly leads to strategic foresight. These assumptions are based on learning from organisational experience (Bootz et al., 2019; Rhisiart et al., 2015; van der Heijden, 2004; Chermack and van der Merwe, 2003; Bood and Postma, 1997).

However, reviewing the challenges of learning from organisational experience revealed three valuable insights. First, it highlighted the possibilities of 'learning traps', namely the competency, superstitious learning and the myopia trap which could lead to oversight rather than foresight. Second, it suggests the presence of two very different kinds of learning, namely single and double loop learning. Third, it showed how 'learning traps' can confine organisations to single loop learning that inhibits strategic foresight. Overcoming these challenges requires organisations to switch from single loop to double loop learning. Our analysis also speculates on the role of unlearning as a mechanism to facilitate this switch. These insights suggest that to "grasp the true nature of the link between foresight and organisational learning" (Bootz, 2010, p. 1592), we must empirically pry open the 'black box' that links scenarios, strategic foresight and organisational learning.

3. Methodology

3.1. Context and company background

In order to empirically explore the links between organisational learning and strategic foresight, we undertook a 24 month long longitudinal field study with a leading Scotch whisky producer (Langley et al., 2013, 1999; Van de Ven and Huber, 1990). Having been founded in the 19th century, the company has a full-range of distilling, blending, bottling and brand management capabilities. Its portfolio includes both iconic single malt Scotch whisky brands as well as UK's leading blended whisky.

At the time of research, the firm's business context was characterised by flat demand for spirits and whisky, creating a highly competitive price sensitive market. Concerns were also evident about the level of tax and duties levied by the UK Government on Scotch whisky and spirits. Together, the price sensitivity and taxes were putting pressure on margins (Company Annual Reports). With flat demand a number of distilleries were either closed or 'moth-balled' as historical levels of Scotch whisky production had created a 'whisky loch' (Buxton and Hughes, 2012, p. 261). As a consequence, some distillers had resorted to selling whisky in bulk at discounted prices. Year-on-year production levels resulted in Scotch whisky stocks rising in the company's balance sheets (Company Annual Reports). The following participants from the whisky producer took part in the scenario workshops:

- Managing Director
- Operations Director
- Operations Manager
- Quality Manager
- Human Resource Director
- Marketing Director
- Financial Director
- Group Business Development Manager

These participants (henceforth referred to as the management team) remained in place throughout the 4 workshops and 16 one on one meetings that were undertaken as part of this research. They were all engaged in the activities described in this paper. Thus our unit of analysis for this study was 'team-level' learning which triggered changes to the collective cognition of the management team.

3.2. Scenario planning activities and workshops

In light of the challenges described above, the management team were interested in using the scenario approach to help them understand the future of the global market for Scotch whisky and spirits in order to support their business planning activities. At the time exports were predominately to USA, France and Japan. Other markets were not as developed in comparison with today's industry. There were several third-party supply chains, with limited in-house supply chain capability. In the UK, whisky and spirits were predominately sold off-trade through supermarkets, with the remainder of sales through on-trade public houses and restaurants.

The scenario project was designed around a number of key activities and 4 workshops (van der Heijden, et al., 2002). First, the scenario facilitator conducted one-to-one interviews (which the researcher attended) with all members of the management team to explore and learn about their individual views and concerns regarding the opportunities and challenges facing their firm (and the industry) (Alvesson, 2003). [The researcher also conducted informal meetings with all members of the management team.] Second, after (anonymising and) analysing the interviews, the emergent themes from the interviews (and supporting comments) were shared with the management team in Workshop 1 (Langley, 1999). The feedback had a three-fold purpose. First, to validate and ensure accuracy of the interview data. Second, to highlight to the management team a spectrum of views held by them. Third, to jointly agree the focus of the scenario development workshop (Workshop 2) this followed a few weeks later. The focal issues agreed by the management team during workshop 1 were:

- Technological developments, including the process of accelerating the whisky aging process, advances in bottling technology, and environmental developments in bottling/packaging/production.
- Lifestyle effects, including health implications for whisky, consumer attitudes to alcohol, and development of attitudes to recreational drugs.

- Demand and demand drivers, including other spirits pricing, attitudes to duty on alcohol, growth areas in world spirits market, changes in seasonality, whisky as a percentage of spirits, life cycle of whisky, relative position of Japanese whisky, average age of whisky drinker.
- Trends in presentation, including packaging, product differentiation, and promotion.
- Distribution structure, including ownership of distribution channels, changes in methods of distribution.
- Consumer attitudes, including consumer preferences for price/quality, percentage of buyers-own-brand whisky, whisky as a gift item, consumer preferences for whisky in the future.
- Industry structure, including opportunities for joint ventures, competition, trends in vertical integration/disintegration, consolidation within the big six, bottling costs in other countries, industry attitudes to bottling.

Source: internal company document

3.3. Data sources and data analysis

Face-to-face meetings (Alvesson, 2003) and participant observation (Ingold, 2011) were the primary means of gathering data. However, as Ingold (2011) reminds us, participant observation refers not to "see what is 'out there'" but rather to "watch what is going on" (p. 223 our emphasis). Detailed verbatim notes and observations were recorded, capturing speaker, setting, time and responses during the 4 scenario project workshops. Key in situ moments were noted and discussed at the participant's earliest possible convenience in order to develop a deeper understanding of their comment(s) (Miles and Huberman, 1994). Critical incidents were also noted as they occurred (Flanagan, 1954; Chell, 1998; Butterfield et al., 2005). All critical incidents, with supporting explanations were recorded in a database for further analysis. In total, there were 213 critical incidents. All empirical data was then coded for further analysis (Miles and Huberman, 1994; Strauss and Corbin, 1998). We followed "an approach that captures concepts relevant to the human organisational experience in terms that are adequate at the level of meaning of the people living that experience and adequate at the level of scientific theorising about that experience" (Gioia et al., 2012, p. 16). During the data analysis, we first moved from the raw empirical data to first order themes (Van Maanen, 1979; Gioia et al., 2012). Our inductive and iterative data coding and data analysis process is summarised in Fig. 3.

Themes were identified, coded and iteratively analysed to identify the following first order themes:

- Challenge to investment, operational and strategic priorities
- Precious Scotch/Whisky is King, Branding and Operational Efficiency key to success
- Information is king, Information technology and management key to success and Customer centric reorganisation required
- Need to restore external and internal fit, need for strategic realignment

Next, we explored the temporal complexity inherent within these first order themes by undertaking a longitudinal analysis of the critical incidents and empirical notes. The process allowed us to jointly explore both the actions and reflections attributed to organisational learning. This resulted in further refinement of the initially observed themes from which we unearthed four second order themes (refer Fig. 3) listed below:

- Challenge to managerial assumptions
- Rigidities of imagination
- Unlearning
- Inquiry and (re)learning

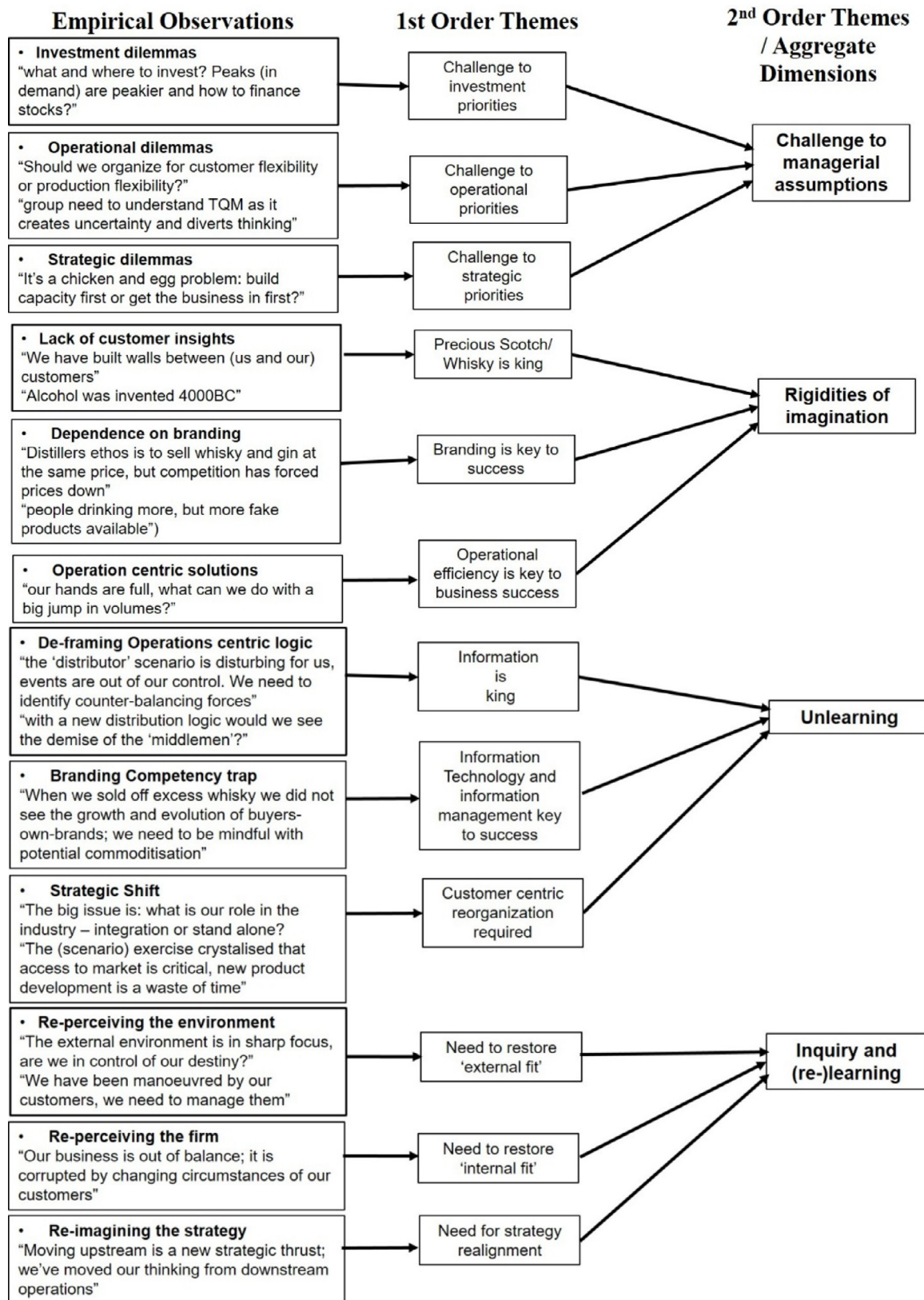


Fig. 3. Data structure summarising the coding/analysis.

The key advantage of adopting a longitudinal process research methodology (Langley et al., 2013, 1999; Van de Ven and Huber, 1990), such as the one followed here, is that it allows scholars to capture both 'reflections' of participants in the scenario planning

workshops as well as track their subsequent organisational 'actions'. Capturing both reflections and actions allows us to theorise the links between organisational learning and strategic foresight. Since *actions are observed rather than assumed*, we can evaluate if the reflections from

scenarios produce strategic foresight. Therefore, even though we focussed on capturing collective cognition and 'team-level' learning at the workshops, our longitudinal research design allowed us to track and validate how this team-level learning got translated into subsequent organisational actions. Capturing both organisational actions and management team reflections thereby allowed us to empirically establish the relationship between learning and foresight. In the next section, we present conversational excerpts from our face-to-face meetings and scenario planning workshops to substantiate the above listed themes.

4. Findings

In this section, we discuss and explore the findings, including first order concepts and second order themes in more detail. The discussion follows the scenario planning workshop sequence. A key insight from the data analysis is the nature and extent of the challenge to the management team's assumptions. The findings highlight that the scenario planning process created the time and space for the management team to understand the limitations of their ideas and experiences to open up new possibilities.

Categorisation of the initial remarks gathered from the interviews revealed that 47.5% of the comments made pertained to internal issues, yet another 47.5% of the remarks were about potential opportunities, and the remaining 5% of comments were about possible threats to the business. When the management team were presented with these findings, the following conversation ensued:

HR Director: "The weight of the data in the interviews feedback is interesting, vulnerabilities are less than expected."

Operations Director: "Does that tell you anything?"

Managing Director: "Healthy?"

Operations Director: "Or complacency?"

Excerpt 1

This conversation highlights the rosy, optimistic view that the management team had about their future. This view was also supported by the firm's profitability and steady performance recorded in the Company Annual Reports. However, as the scenario planning process unfolded, it forced the management team to make explicit some of their deeply held assumptions about the 'state of the business'. This in turn led them to *connect previously unconnected events and experiences*:

Marketing Director: "With static demand the distributor is all powerful. The whisky industry accelerated this situation by selling surplus whisky. The distributor is the brand; they own the consumer. We do not fit into this."

Operations Director: "We might only have one final EU distributor. We can see a trend with Intermarche."

Marketing Director: "The distributor is driven by margin!"

Group Business Development Manager: "This is a daunting picture!"

Excerpt 2

As the comments suggest, the management team began to realise that power in the supply chain and wider industry context has moved to the distributor. Previously the management team had noted (on many occasions) that Scotch whisky was the scarce resource and believed that power lay with the producers. They were beginning to see for the first time a new basis of organising in the wider industry. Investment in information technology, logistics and supply chain management by distributors was emerging as the basis of a shift in power.

This realisation *challenged the management team's understanding of their business and their current context*. As a consequence of the challenge and new interpretation of the wider processes in play in the industry, further reflection on and discussion of their situation was captured during a short interaction between the Managing Director and

Operations Director. The conversation highlights the revelation that they had a (potentially) redundant view of the importance of their products.

Managing Director: "I am depressed, we are being stuffed by our customers; we are locked into the risk of the customer."

Operations Director: "We give value, create value for others, why? We take a worthless product and create value in the process, for little reward."

Excerpt 3

The two Directors were beginning to recognise their changing situation, and in the process, challenge their assumption about the importance of their products to their future success. They were beginning to open up and let go of the assumption that '*Scotch whisky is king*'. They had not fully realised the emergence of processes in their environment, the consequences of the emerging processes and the implications they had for their business. Such insights about their fluxing and flowing context acted as the second order temporary breakdown where they realised the significance and limitations of their current practices (Sandberg and Tsoukas, 2011; Argyris and Schön, 1978). This breakdown signalled 'limits' to the current knowledge and understanding of their business reality within the management team. They realised that their guiding assumptions and understanding of the wider industry dynamics were deeply flawed and misaligned with their reality.

The second order temporary breakdown triggered a wider discussion amongst the management team. They began to '*relevelate*' (Paton et al., 2014) their experiences to *develop a new understanding of their existing context*.

Quality Manager: "Could there be an Asda Global Inc. who is able to utilise database marketing? They would use technology to create value and not to reduce costs."

Operations Director: "We have the wrong mind-set (i.e. production orientation)."

Marketing Director: "If we were the distributor we would know the size of your shoes, the colour of your socks, when and where you bought them."

Managing Director: "How do we react to the situation? How do we become proactive?"

Operations Director: "We need to go straight to consumers."

Quality Manager: "If we were going to be a provider, who would be our potential partners?"

Managing Director: "I am hearing new ideas. We have opened up to a business we think we know about, now we are thinking about it differently."

Excerpt 4

The conversation reveals the emergence of new possibilities and understanding of the unfolding competitive and supply chain dynamics. The participants realised that the role of technology along with the technological affordances, has fundamentally challenged their understanding of their business context. Technologies like the electronic point of sale (EPOS), customer relationship management (CRM) systems and real-time logistics, had the capability to create new means of 'organising' that would fundamentally alter the firm's future. The management team became aware of the significance of information technology and realised that, as a business, they had no visibility or access to the data generated by their customer EPOS, CRM and logistics systems. Additionally, they also realised that technology was creating a barrier between them and their consumers. Failure to act could limit their understanding of consumer buying behaviour in the future. This realisation that insights into consumer behaviour was fast emerging as the basis of market power led the firm to *explore and identify a new 'logic' for future organising*.

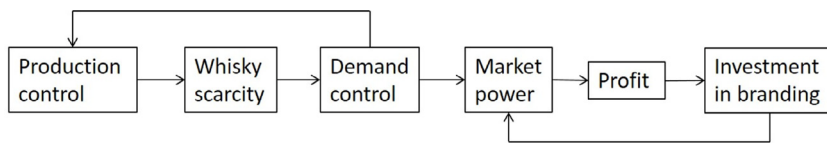


Fig. 4. Producer logic (original assumption).

Human Resource Director: “The big issue for us is our role in the future – integration or stand alone?”

Managing Director: “We have been manoeuvred by our customers. There are no two customers alike. It is difficult to predict their demands.”

Quality Manager: “Distributor power is disturbing for us. The exercise has crystallised that access to the market is critical.”

Operations Director: “One issue has come into focus. Flexibility is in question. It uses up more of the plant. Certain areas have pressures.”

Managing Director: “We have discovered pressure on our customer orientation. More business reduces flexibility”

Operations Director: “More customers, more problems. More customers, less flexibility. Our business idea is not ideal”

Marketing Director: “Our business is out of balance. We are corrupted by the changing circumstances of our customers”.

Group Business Development Manager: “How do we improve customer service?”

Excerpt 5

Excerpt 5, suggests that the management team was struggling to articulate elements of their new understanding and its subsequent implications for organising. It became evident to them that they were detached and distant from consumers and their buying patterns. Technological advancements were undermining their business model and handing power to distributors (if nothing else changed). The emerging situation presented the firm's operations with a trilemma: *Organising for products, organising for customers or organising for flexibility in production?* The management team had yet to recognise this trilemma and its consequences for operations and strategy prior to the scenario workshops. This recognition triggered the following conversation:

Marketing Director: “I have always held the view that whisky is the scarcity. Whisky is king.”

Operations Director: “Yet, existing plants are running at 50% capacity!”

Managing Director: “How do we surround the customer?”

Operations Director: “What do we do best? Technology changes the game.”

Quality Manager: “Power is with the producers, but power is bigger through distribution. Power defines the rules of the game.”

Operations Director: “Technology cannot give power to consumers. They are mass market; therefore, they have no power.”

Marketing Director: “Who owns the consumer?”

Operations Director: “Information is the new king.”

Excerpt 6

The above conversation highlights the rigid assumptions held within the management team regarding the importance of Scotch whisky for the firm's (historical and future) success. Yet, the team realised that this ‘whisky’ centric assumption was flawed and that a new organising logic was required to secure the firm's future competitive advantage. Technology enabled processes were altering the competitive landscape of the whisky industry. Competing within this new landscape would require the firm to harness the potential of information technology and integrate IT capabilities with current operations. This ‘information’ centric model could serve as the basis of future organising.

5. Analysis

In this section, we further probe the links between scenarios and the organisational learning process. For this, we present both the ‘actions’ and the ‘reflections’ of the management team during the longitudinal scenarios planning workshops (Bootz, 2010). The excerpts presented in the Findings section are now analysed in conjunction with empirical evidence from the scenario planning process to further illustrate the ‘unlearning’ process that occurred during the scenarios workshops. In the sections that follow, we present the four stages of this ‘unlearning’ process.

5.1. Challenge to managerial assumptions

The management team had deeply held assumptions about their business and what made it successful. They believed that ‘whisky is king’ and that the ‘*Precious Scotch*’ was the scarcity in the market-place. This assumption was also widely held in the industry. By holding ‘*Precious Scotch*’ as the dominant management paradigm, the team believed that they would be able to control demand for their whisky products and thus ensure production control (and consequently efficiencies in distilling, blending and bottling). Doing so would create market power and lead to profits. Investing a share of the profits into branding, they believed, would help them protect and retain their market power. The causal representation of the ‘*Precious Scotch*’ paradigm is summarised in Fig. 4.

Fig. 4 reveals two positive feedback loops interacting with each other to create a virtuous cycle for the organisation. However, while developing the scenarios the management team realised that their wider environment was changing. Key customers, e.g. large hotel chains, supermarkets were investing in electronic point of sales (EPOS) technology to help them develop relationships with the end user (e.g. consumers). EPOS systems provided the large hotel chains and supermarkets with profiles of and insights into consumer spending practices and product preferences. This knowledge particularly helped the supermarkets utilise the data from their EPOS system to develop customer relationship management systems (CRM) to target consumers with ‘special offers’ e.g. discount vouchers to be offset against future purchases of preferred products or vouchers to be used to ‘push’ products that the supermarkets would use to attract consumers.

In addition to investing in EPOS and CRM systems the supermarkets were also investing in logistics and distribution systems to help them manage and control incoming orders and replenish their shops and stores in the most efficient manner possible. Initially the supermarkets were predominately interested in ensuring adequate stocks of whisky products to fulfil consumer demand. The unintended consequence of investing in EPOS and CRM systems was their ability to control whisky production by consolidating knowledge of consumer buying preferences. Such information helped them to reduce their buying costs. Such investment started as a necessity but turned into a competitive advantage. Over time the supermarkets would utilise their technology to exert power over all aspects of supply chain management. These investments were leading to a situation that would move market power from the ‘*Precious Scotch*’ paradigm to the supermarkets and their technological systems. The causal representation of this emerging logic is summarised in Fig. 5.



Fig. 5. Emerging logic (reality of the business context).

5.2. Rigidities of imagination

Fig. 5, reveals a third positive feedback loop. This loop represents the supermarket investment in technology that enabled a shift in market power towards them. This resulted in a vicious cycle that undermined the 'Precious Scotch' paradigm. Ironically, the supermarket approach also reduced the efficacy of investing in branding by the whisky producers. In the producer paradigm (Fig. 1) the key lever to enhancing market power was investing in branding. Supermarket product targeting made this lever less effective.

Excerpt 2 highlights the emerging foresights for the management team. They were able to make *connections between previously unconnected events* (Fig. 5). This led them to realise that the emerging technological capability of the supermarkets was eroding their market power, and undermining their 'Precious Scotch' paradigm. The management team realised that investment in EPOS and CRM systems by supermarkets enabled them to develop insights into consumer preferences. These insights allowed the supermarkets to promote product targeting to the end consumer. For example, the supermarkets could use their loyalty cards to target or not 'promote' brands, equally limit or withhold shelf space for whisky products. These practices began to erode the power of the whisky producers. Further, product targeting by supermarkets also forced the whisky producer to increase their investment in branding with the false hope of restoring market power. The increased investment in branding did not increase profits and this further eroded their market power. This resulted in supermarkets controlling demand for whisky which in turn influenced production control. The management trilemma highlighted earlier resulted from this emerging and developing dynamic. However, the management team were yet to comprehend the significance of these emerging dynamics for their business.

Excerpt 2 also illustrates how 'unlearning' occurred when the management team were able to draw on their historical actions and reflect on these actions in light of the emerging situation. For example, historically, when the firm over produced whisky, they sold off their 'Precious Scotch' to supermarkets who would then create 'buyers-own-brands' for the shoppers/consumers. The firm believed that the selloff would help them drain their 'whisky loch', generate cash and increase the future scarcity of their 'Precious Scotch'. However, the creation of 'buyers-own-brands' triggered both a price war and a fight for supermarket shelf space. The unintended consequence of these actions was increased price competition for whisky brands. The disappointment from this oversight which can be attributed to the rigidity of the management team's assumptions is well expressed in Excerpt 3. It is the recognition of this oversight that triggers 'unlearning'.

5.3. Unlearning

Awareness of their oversight acted as a jolt for the management team. Excerpts 3 and 4 demonstrate how the management team were

'struck' by this revelation. Excerpts 4, 5 and 6 show them questioning the logic of their current approach to business. Faced with this revelation the management team had choices, they could either be anxious and defensive about business-as-usual or they could grapple with the implication of this revelation and its implications for their business going forward. Excerpt 4 illustrates how the management team began questioning their assumptions and exploring how they might react to their new insights. They speculate about possibilities and tentatively probe their future. The management team's reaction support 'unlearning' when they acknowledge that the approach that has served them well in the past would no longer be relevant in the future. The Managing Director's eagerness for 'new ideas' to open up the business is a consequence of the unlearning that has taken place. However, it is important to recognise that unlearning does not directly lead to 'solutions'. As Excerpts 4 and 5 demonstrate, unlearning caused the management team to open up to new thoughts and an idea not previously considered: *the role of information and technology as the basis of gaining market power*.

Unlearning, therefore, as Excerpt 6 suggests, highlighted contradictions between the management team's long-held belief about 'Precious Scotch' and the operational reality that despite being 'precious' their plants were only running at "50% capacity". Unlearning also helped the managers to revise their 'problem definition' about production control. They realised that further investment into branding to maintain the 'scarcity' of whisky is futile and will not allow them to protect their market power. Their rigid assumptions had caused them to misunderstand their past actions which actually compounded their current problems by triggering a 'price war' that made Scotch less 'precious' in the eyes of the consumer. By letting-go of their previously held assumptions, unlearning opened them up to the possibility of strategic foresight. Unlearning allowed the management team to realise that whisky was no longer king and their inability to capture and utilise sales information was limiting the efficiency of their operations. Letting-go of the 'whisky is king' assumption allowed them to see their production issues in a new light.

5.4. Inquiry and (re)learning

Having realised that "*Information is the new king*", the management team began to explore for a new basis of success. The supermarket investment in technology was resulting in new capabilities that allowed them to dictate the demand and price to whisky producers. The market power was gradually shifting from the producers of 'Scotch Whisky' to the retailers of 'Scotch Whisky'. This unlearning had triggered a second-order temporary breakdown (Sandberg and Tsoukas, 2011; Argyris and Schön, 1978) where previously held views could not be reconciled with new insights about their unfolding situation. The management team began to use the scenarios approach to create the space for self-distanciation (Tsoukas, 2009) to reflect on and re-interpret the consequences of the '*information is the new king*' paradigm for their business. The strategic foresight that emerged is summarised in Fig. 6 below.

Self-distanciation facilitated novelty and new thinking where management "judgement arises from the self-conscious use of the prefix re: the desire to re-order, to re-arrange, to re-design what one knows and thus create new angles of vision or new knowledge for scientific or aesthetic purposes" (Bell, 1999, p. xiv). By harnessing their insights about technological change the management team identified the crucial role of information technology and customer data for future success. The management team harnessed these scenario insights to innovate and create the 'Customer Service Centre' that would capture supermarket demand information flows, and aggregate them to aid production control, thus creating a new positive feedback loop for the firm. The '*information is the new king*' paradigm also threw new light onto the trilemma facing their operations. The management team now realised that any potential solution that they might have considered previously would have compounded the situation. By capturing and consolidating

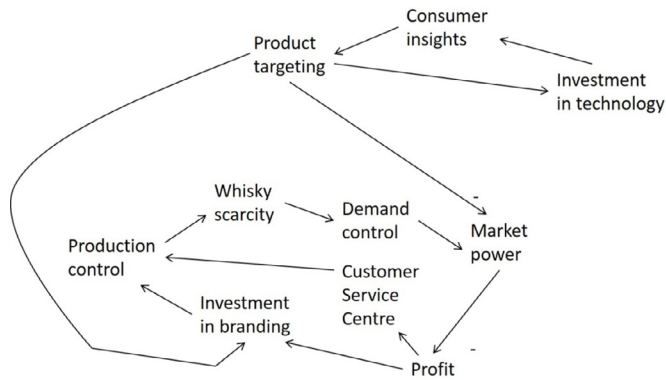


Fig. 6. Strategic foresight from the 'Unlearning'.

customer orders in a timely manner through the 'Customer Service Centre', they would be able to develop demand intelligence that would help them plan and manage their operations to achieve economies of scale in production.

The resulting foresight led them to identify that they would need to create a 'Customer Service Centre' (Company Annual Accounts) to harness technological innovation and help them understand and manage future customer re-ordering processes. Previously customer re-ordering was sporadic and resulted in either short-run changes to production or longer-run production for stock. Both approaches were impacting negatively on the profitability of the business. In Excerpt 6 the Operations Director noted that 'information is the new king' and it is argued here that such a transformation in understanding exemplifies strategic foresight through unlearning. The original and revised theoretical links between scenario planning, strategic foresight and organisational learning are summarised in Fig. 7 below.

6. Discussion and implications

So how does strategic foresight emerge from scenarios? The evidence from our longitudinal field study reveal, perhaps counter-intuitively, how *unlearning* rather than learning helped generate the strategic foresight. By examining the actual temporal sequence of events within the foresight generation process, our findings and analysis demonstrate how the unlearning process (Fig. 7) played a key role in helping the whisky producer overcome the rigidities of their imagination. Without unlearning, the whiskey producer was locked into single loop learning where the 'learning traps' prevented the generation of strategic foresight. Strategic foresight only emerged when the beliefs of the management team were transformed by the challenge to their

managerial assumptions, recognition of rigidities in their imagination, unlearning followed by inquiry and (re)learning. Thus, unlearning serves as a mechanism that allows organisations to switch from single to double loop learning. Yet, crucially double loop learning generated strategic foresight, not by offering insights gained from anticipations of the future (Tapinos and Pyper, 2018; Ringland, 2010, 1998), but rather by allowing the whisky producer to obtain a better understanding of the 'present' in the here and now.

Our study also highlights the limitations of learning from organisational experience. We notice in Excerpt 1 that the firm was initially caught in a 'competency' trap (Levitt and March 1988, p. 322). They believed that their operational experience with production, distilling, blending and bottling will allow them to make efficiency gains and increase their competitive advantage. When viewed through the current organisational learning lens used by scenario theorists, the scenario in Fig. 4, would trigger single loop learning (Bootz et al., 2019; Argyris and Schön, 1978), where the management team can act to rectify mistakes, but without fundamentally changing their representations. The competency trap is therefore reinforced leading to strategic oversight rather than foresight.

Similarly, Excerpts 2, 3 and 6 illustrate the superstitious learning trap (Levitt and March 1988, p. 325) where learning reinforced the 'Precious Scotch' paradigm and the 'whisky is king' logic within the management team. While scenario theorists have suggested the need for 'double loop learning' that helps organisations shift their "system of norms, beliefs and organisational rules" (Bootz et al., 2019, p. 93; Argyris and Schön, 1978), the scenarios literature is silent on how this can be brought about. We suggest that the 'unlearning' mechanism that we have proposed can act as a natural bridge to help organisations switch from single to double loop learning.

Finally, Excerpt 4, and Fig. 6 offer evidence for how the whisky producer overcame the myopia trap (Levinthal and March, 1993). By recognising their flawed 'mind-set' (Operations Director) and encouraging 'new ideas' (Managing Director), the team were able to effect the shift from operational efficiency to 'information is the new king' paradigm as the basis of success. They also realised the myopia of investing in branding and recognised the importance of investing in a Customer Service Centre for business effectiveness. These shifts are summarised in Table 1 below.

These findings enable us to reassess the current debate amongst scenario theorists on the role played by organisational learning in the generation of strategic foresight (Bootz et al., 2019, 2010; Haefner et al., 2012; Derbyshire and Wright, 2014; Wright et al., 2013; Wright and Goodwin, 2009). Our findings suggest that 'learning traps' play a crucial role in determining whether organisational learning from scenarios generates strategic foresight or strategic oversight (Chermack et al., 2015). If learning traps are present, then scenario planning is likely to inhibit learning by distorting perceptions of environmental uncertainty by using simplistic assumptions that narrow mental models and limit the range of possible outcomes (Derbyshire and Wright, 2014; Wright et al., 2013; Wright and Goodwin, 2009). However, if the learning traps are identified and overcome, as it was in our field study, then scenario planning is likely to foster strategic foresight because learning allows the organisation to re-perceive its environment (Wack, 1985a; 1985b) which in turn leads to strategic foresight

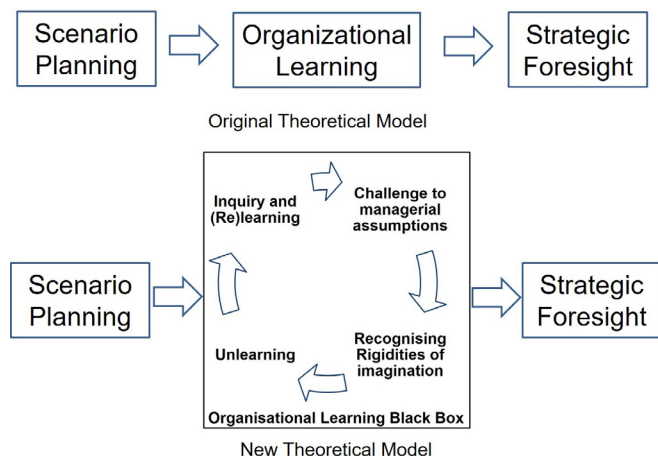


Fig. 7. Theoretical model for strategic foresight through 'Unlearning'.

Table 1
Rigidity of imagination and unlearning.

Serial No	Rigidity in imagination (original assumptions)	Unlearning (updated assumptions post unlearning)
1	'Precious Scotch' / Whisky is King	Information is the new king
2	Branding is key to success	Investment in technology and information management key to success
3	Operational efficiency	Customer service centre

(Chermack, 2005). In other words, contrary to prior claims, the relationship between scenario planning, organisational learning and strategic foresight is rarely straight forward (refer original theoretical model Fig. 7) and is influenced by the presence or absence of the competency, superstitious learning and myopia 'learning traps'.

The empirical evidence from our study on 'unlearning' also allows us to weigh into the current theoretical debate regarding the concept (Howells and Scholderer, 2016; Tsang, 2017a; 2017b; Klein, 1989). We define unlearning as a process of recognising, acknowledging and letting go of prior learning (including assumptions and mental frameworks) in order to *relevate* new learning possibilities. Our definition of unlearning is significantly different from Hedberg's (1981) original definition. We developed this definition by exploring the etymological roots of the word 'learn'. According to The Oxford Dictionary of English Etymology, 'learn' originated from the Old High German word *lernen* whose root *lois* (from which *lernen* is derived) originally meant "furrow, track". Hence, *lernen* originally meant "to follow or find the track" (Hoad, 2003, p. our emphasis). Unlearning, we argue, implies eradicating furrows and returning to the unfurrowed flux of organisational experience from which new possibilities are 'relevated' (Paton et al., 2014). Unlearning requires letting go or relaxing the rigidities of previously held assumptions and beliefs, rather than forgetting them, as part of the general approach to creating strategic foresight.

Therefore, it is incorrect to conflate unlearning with either forgetting as Howells and Scholderer (2016) do or discarding old experiences, as Hedberg (1981) and Nystrom and Starbuck (1984) have claimed. Unlearning involves recognition and acknowledgement of the limits of current knowledge and insights that may have outlived their utility. Further, unlearning need not necessarily precede learning (single loop learning for instance does not require unlearning), however it must precede foresight. Unlearning is therefore a necessary, but not a sufficient condition, for strategic foresight. Finally, we agree with Howells and Scholderer (2016) when they say that unlearning cannot be managed. In our study, the unlearning and subsequent foresight emerged inadvertently as the management team relaxed their rigid assumptions. The 'reflexivity' (Cunliffe, 2002) of the participants played a crucial role in the inquiry and (re)learning that succeeded unlearning. Table 2 below offers a comparative summary of our unlearning concept/mechanism.

Our findings bear significant insights for the strategic foresight literature. Foresight in our study emerged from the participants gaining insights about their changing competitive landscape and then using those insights to re-perceive their environment, firm and to probe future possibilities. Foresight, did not emerge from the development of strategic options (Ringland, 2010; Tapinos and Pyper, 2018) and the use of scenarios as wind-tunnels for testing these options (van der Heijden, 2005). Additionally, our study shows how foresight can also

emerge from a better understanding of the 'present' in the here and now. A clearer understanding of the 'present' allows businesses to re-perceive their firm and environment and future actions through previously imperceptible ways. These are the reasons why such foresight is 'prospective' rather than 'retrospective'. Unlearning is thus one of the means to cultivate strategic foresight. Future research can therefore identify "organising practices and activities" (Sarpong and Maclean, 2016, p. 2013) that facilitate unlearning.

The study also support suggestions "that companies should invest in pedagogically rich scenario processes that develop the capability of managers to sense changes" (Rhisiart et al., 2015, p. 124). Prior research by Schoemaker (1995) has distinguished between three categories of foresight relevant knowledge: 1. Things we know we know, 2. Things we know we do not know and 3. Things we do not know we do not know. Unlearning can be used as a mechanism to enable firms to transition from Category 3 to Category 2. It can also alert organisations to the learning traps that could plague Category 1 knowledge. Mere exploration using scenario planning without unlearning may not facilitate transitions between categories 3 and 2 for a key reason why Category 3 blind spots exists and persists is because single loop learning and learning traps (especially the myopia trap) ensure that learning from exploring scenarios remains constrained. Therefore, without unlearning and double loop learning, it is not possible for participants to even realise 'what' is constraining their current 'exploration' and the means through which they can re-perceive the 'familiar' in 'unfamiliar' ways.

Scenario theorists can also draw on our process methodology (Langley et al., 2013, 1999; Van de Ven and Huber, 1990) and adapt their foresight studies to investigate other organisational phenomena like improved decision making (Derbyshire and Wright, 2017), knowledge management (Bootz et al., 2019) and dynamic capabilities (Rohrbeck, 2012). Our approach allows theorists to capture and establish a link between a firm's reflection and action (Bootz, 2010, p. 1591) thereby increasing the validity of their theoretical explanation.

Finally, we concur with Rhisiart et al. (2015) when they state that "the greatest potential for innovation, progress and insight in strategic foresight may be found in the richness of contemporary debates on the organisations, strategy and social theory – and their epistemological and ontological foundations" (p. 127). Recent advancements within process research studies has proposed the need for a *Becoming* mode of theorising predicated on a process ontology (MacKay and Chia, 2013; Langley and Tsoukas, 2010; Tsoukas and Chia, 2002; Chia, 1999). Developing scenario planning theory from a *Becoming* perspective could be yet another promising area for scholarly inquiry.

Table 2
Insights about unlearning.

Hedberg (1981) and Nystrom and Starbuck (1984) assumptions on 'Unlearning'	Howells and Scholderer's (2016) critique of 'Unlearning'	Insights from our field study	Implications for 'Unlearning'
Unlearning as the discard of knowledge is an independent process to learning	No evidence of deliberate efforts to remove memory, or success in deliberately discarding knowledge from memory	Unlearning involves recognition and acknowledgement of the limits of current knowledge and insights that may have outlived their utility	Unlearning is not forgetting or discarding old experiences
Unlearning precedes learning	Conventional theory-change where new knowledge that did not fit established theory stimulated a change in understanding	Unlearning precedes re-learning, but unlearning does not necessarily precede learning; re-learning not always new learning	Unlearning and new learning could occur in parallel
Unlearning aids both later learning and adoption of practice	Discard of practice(s) evident but not unlearning	Unlearning is a necessary condition but not a sufficient condition	Unlearning is useful only when the limits to prior understanding are remembered
The idea that unlearning can be 'managed', that is, knowledge may be deliberately and intentionally discarded or 'removed' to facilitate later learning	New understanding leads to setting-aside old understanding in the theory-change model	Understanding the difference between purposive, non-deliberate and unpredictable outcomes and purposeful action where there is a intended outcome	Unlearning requires participants to be reflexive. It can be facilitated but not managed

7. Conclusion

We began our paper by asking: How does organisational learning emanating from scenarios generate strategic foresight? Whilst there is widespread acknowledgement of the effectiveness of scenario planning for generating strategic foresight (Spaniol and Rowland, 2018; Wright et al., 2015; Ramirez et al., 2011; Varum and Melo, 2010; Cairns et al., 2004; van der Heijden et al., 2002; Duncan and Wack, 1993; Wack, 1985a, 1985b), few studies have examined the assumptions that lead to this assertion. Questions about how and why scenario planning leads to strategic foresight have received little theoretical and empirical attention (Bootz et al., 2019). Addressing these questions requires us to critically examine the conceptual and theoretical links between scenarios, strategic foresight and organisational learning.

Our study makes five specific contributions. First, our paper responds to calls for confronting “foresight practices with a complete and coherent theoretical framework built from a detailed analysis of the concept of organisational learning” (Bootz, 2010, p. 1592). We not only identify the imprecise use of scenarios as both mechanism and outcome as the source of methodological chaos (Martelli, 2001; Spaniol and Rowland, 2018) within foresight studies but also theorise and problematise the ‘rigid’ assumptions that link organisational learning with strategic foresight.

Second, our research clarifies a crucial puzzle that has persisted within foresight studies on whether scenario planning fosters (Wack, 1985a, 1985b; de Geus, 1998; Chermack et al., 2015) or inhibits (Derbyshire and Wright, 2014; Wright et al., 2013; Wright and Goodwin, 2009) organisational learning that generates strategic foresight? Our analysis has demonstrated how organisational learning yields strategic foresight if and only if scenarios lead to detection and correction of errors. We have also unearthed the previously overlooked possibilities of ‘learning traps’ that inhibits organisational learning. The presence or absence of learning traps therefore determine whether scenario planning aids or hinders organisational learning that generates strategic foresight.

Third, by theorising and developing a process research methodology (Van de Ven and Huber, 1990; Van de Ven, 1992; Langley et al., 2013) within scenarios, we introduce a novel approach that allows scenario theorists to pry open, explore and explain various kinds of ‘black-boxes’ that link scenarios with their stated organisational outcomes. The approach allows us to capture both actions and reflections of the participants as they take part in the scenario exercises. The methodology also offers theorists the opportunity to create the know-how knowledge valued by practitioners (Langley et al., 2013).

Fourth, rather than assuming that scenario planning triggers organisational learning that yields strategic foresight, our longitudinal study helps unpack the complexities inherent within organisational learning and demonstrates how strategic foresight emerged from ‘unlearning’. Therefore, by uncovering and specifying the ‘unlearning’ mechanism our study reveals how scenarios generate strategic foresight.

Finally, our research also weighs in on the current theoretical debate on ‘unlearning’ (Howells and Scholderer, 2016; Tsang, 2017a, 2017b). Our analysis suggests that while the critics of ‘unlearning’ (Howells and Scholderer, 2016; Klein, 1989) are right to point to the imprecisions within the original conceptualisation of the concept, their critique of “unlearning” is neither unambiguous nor are their arguments supporting the empirical unwarrantedness of “unlearning” logically tenable (Tsang, 2017a; 2017b). Therefore, by re-exploring the etymological roots of ‘learn’ from which ‘unlearning’ is derived, we offer and discuss a more precise conceptualisation of ‘unlearning’. We argue that unlearning, in practice, requires letting go or relaxing the rigidly held assumptions as part of a general approach to creating strategic foresight. Thus, we offer a more precise theoretical model (Fig. 7) that summarises the links between scenario planning, organisational learning and strategic foresight.

To conclude, we have exposed some of the theoretical orthodoxy

within the scenario literature, particularly, with regards to the links between organisational learning and strategic foresight. The unlearning mechanism that we have unearthed and developed in this paper offers a novel explanation for how strategic foresight actually emerges from scenarios. We hope that our theoretical and methodological contributions will stimulate new practitioner foresights and scholarly debates, thereby moving knowledge forward.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.techfore.2020.119927.

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