TIME TRAVELLING:

ORGANISATIONAL FORESIGHT AS TEMPORAL REFLEXIVITY[1]

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"In human affairs (...) it is pointless to try to predict the future"

Drucker (1997, p.20)

Strategic foresight has long been considered a crucial feature of the competent business manager (Fayol, 1949). In this paper, it is argued that temporal reflexivity may be viewed as an essential ingredient of strategic foresight. This happens because new competitive landscapes demand high-velocity planning and opportunity grabbing as necessary predicaments for organisational survival (e.g. Eisenhardt & Martin, 2000). Thus, looking at the future must be complemented with strategising in the present and learning fast from the past.

When facing high-speed competitive landscapes, organisations have to make an effort to anticipate what events may turn out to be significant enough to challenge their competitive position. But they also need to develop the capacity to improvise, i.e. to act without the benefit of prior planning, in order to take advantage of unexpected opportunities or to neutralise significant threats. In other words, they need to focus on both the future and the present. But more than considering these as independent efforts, organisations need to manage temporal articulation. In this sense, organisational foresight, instead of being focused exclusively on the future, may refer to managing the links between the past, present and future. Hence the double suggestion that organisational foresight may be thought of as time travelling and that time travelling may be considered as an instantiation of temporal reflexivity, or the awareness of "the human potential for reinforcing and altering temporal structures" (Orlikowski & Yates 2002, p.698) through action. This chapter contributes to the organisational and foresight literatures by stressing the importance of temporal reflexivity. Such importance is

illustrated by the multiplicity of "time travels" in which organisations engage in their daily practice. To limit foresight to an extrapolation of the past to the future is to ignore the significance of temporal reflexivity.

The paper is organised as follows. The initial section discusses the major theoretical issues underlying "time travelling". Then, the traditional view of foresight as prediction is introduced. According to this perspective, organisations should try to anticipate the shape of the future in order to adjust. Recent developments in the field of complexity science have suggested, however, that the assumptions upon which the "foresight as prediction" perspective rests, are possibly untenable. Based upon complexity theory, the prediction perspective is then critically analysed. Its limitations lead to the consideration of an alternative view. This alternative is discussed in the "foresight as invention" section. Here, foresight is not taken as an attempt to devise what will happen in the future, but rather as an effort for articulation between past experiences, today's realities and possible trajectories. The "foresight as invention" perspective draws upon the concept of emergence and views the future as the unpredictable outcome of myriad interactions between complex agents. Despite the agentic nature of organisational behaviours (Bandura 2001), and even in the face of genuine efforts for prediction, the influence of previous learning, the need to solve pressing problems immediately, the complexity of causal chains, and the fortuitous small interactions that end up producing significant consequences, all deem prediction efforts insufficient to make accurate anticipations. Through emergence, organisations invent their futures. These "inventions" are the result of the interaction between multiple time horizons: paths inherited from the past, possibilities of the present and visions of the future. These time horizons are not easy to separate and distinguish. People often blend them, circulating from one to another. Organisational foresight may,

as such, be analysed as time travelling. In these travels, as will be discussed in the following section, every kind of combination between past, present and future is admissible. To grasp the complexities of foresight, then, one possibly needs to understand how the future is a product of the synthesis of multiple temporal landscapes construed through temporal reflexivity.

TRAVELS IN TIME: PREDICTION OR INVENTION?

It is argued here that organisational foresight may be approached from two major paradigms, one which is close to the foresight-as-prediction view, the other to the foresight-as-invention perspective.

The first paradigm lies at the heart of the forecasting discipline. It views time structures as objective and, as such, predictable. The rigour of predictions may then be understood as the result of the availability of reliable technical instruments. As a consequence, traditional research in the domain of forecasting has been directed basically toward the development of analytical tools aiming to improve the potency of prediction. This orientation is evident, for example, in Makridakis and Wheelright's (1982a) handbook of forecasting, mostly devoted to the development of analytical methods such as ARIMA models, Bayesian forecasting, single equation regression models, simultaneous system models, and so forth (Fildes 1972). In this perspective, a forecast is "an estimate of the future based on the past, as opposed to subjective prediction" (p.572). It could then be assumed that the future is an extrapolation of the past and that, with the adequate statistical methods, such extrapolation could be produced with a reasonable accuracy. A result of the application of the adequate tools is as follows: "Consider the following illustrative scenario about company X. Through 1971 a regression model explaining companywide sales with real GNP performed well

both statistically and as a general guide to individual product line performance. During the 1973-75 period, sales were affected by a number of unusual changes in the environment." (Beckenstein 1972, p.261). This view, then, takes organisational foresight as a subfield of the management discipline dominated by statistical methods applied to historical data. People, including forecasters, acted within the context of these structures.

A second foresight paradigm views organisational foresight as the interaction between the way people simultaneously construe and are constrained by the temporal structures that are both enacted and changed through practice. This view draws in Giddens' (1984) theory of structuration. It has been applied to the study of organisations by Orlikowski and Yates (2002), for example. These authors, suggest that, through practice, people sustain and change the temporal structures that are the context of their action. In this perspective, foresight is not as much a matter of prediction ("there is a future out there, waiting to be predicted"), as a matter of invention ("how are human agents inventing their futures through practice?").

The implications, theoretical and practical, of these two paradigms, are significant. Under the first paradigm, foresight is a matter of statistical forecasting; under the second paradigm, forecasting is a matter of interpretation. Foresight as prediction means travelling from the past to the future on the basis of statistical analysis; foresight as invention means analysing all relations between the past, present and future, in order to cultivate awareness of the role of time. Some authors have called these efforts of temporal reflexivity as "operations of fantasy" (Weick & Sutcliffe 2001) or time stretching (Tsoukas & Hatch 2001). It is argued here that it is possible to integrate both paradigms under the perspective of time travelling. Such a perspective, then, may have as much in common with statistical analysis as with Jules Verne fantasy journeys.

Several reasons may be advanced to justify the integration of both perspectives. These include the limits of human agents in both the production and reading of forecasts, which were known by authors in the foresight as prediction view. Cognitive limitations and biases, and political interests were presented as obstacles to the implementation of forecasting (Makridakis & Wheelwright 1982b). Developments in complexity theory and in the interpretive literature on organisations, however, exposed the limits of the statistically-based causal analysis and the existence of an objective world, which could be analysed independently of human agency. If there are clear limits to prediction, foresight may be as much a matter of prediction as well as a matter of interpretation. Extrapolating the future from the past may be wise, but wise can also be the exploration of complementary time travels. The exploration of multiple relationships may thus help to understand the human potential to act upon temporal structures through praxis. It is argued, then, that organisations need to operate within both paradigms and play with the multiple combinations of time. The following sections develop the foresight as prediction and as invention paradigms. The discussion then turns to time travels as instances of temporal reflexivity.

FORESIGHT AS PREDICTION

This section critically discusses the traditional view of foresight as prediction. According to this perspective, organisations should try to anticipate the shape of the future in order to adapt. Traditional views of organisational foresight are aimed at predicting the future as reflected in Fayol's maxim, that "managing means looking ahead" (1949, p.43). This perspective is still attractive today, as illustrated by the subtitle of Laermer's (2001) book: "Think forward, get ahead, and cash in on the future". The most respected means to formalise this look ahead is through strategic

planning. Such formalisation may be deemed unnecessary, however, if a brilliant visionary is in command. As that does not seem to be the case in most organisations, planning became a fundamental part of the manager's job. The appeal of the great designer, however, is still alive and revives on those occasions when an organisation shows above-normal returns. In most cases, that tends to be associated with a brilliant CEO, able to balance discipline and imagination, the two recurrent ingredients of strategy-making (Szulanski & Amin 2001).

This paper, however, is focused on the role of strategic planning as discipline. Discipline, as Russell Ackoff (1970) put it, may refer to the design of a desired future and the means to attain it. Planning, thus, is closely linked with the capacity to conduct accurate forecasts. Accurate forecasts, according to models of rational actors, are a matter of collecting information, developing alternatives and picking the best alternative. The period during which a firm can make accurate forecasts, "plus or minus 20 percent" (Ansoff 1964, p.64), is called its planning horizon. Under the rational actor model, plans and forecasts may be a matter of rationality, consistency and systems, of eliminating avoidable errors and treating information adequately.

The problem with planning horizons in contemporary business environments is that they have become too short too quickly. Effective planning depends on accurate forecasts, but long-range forecasts tend to be inaccurate. Therefore, planning activities must accept the limitations inherent to long-range forecasts. The obviousness of these limitations attracted criticism to the planning perspective. Brown (2001, p.113) offered a good example of this criticism when stating that "plans, in short, are easy. Planning is impossible".

From this, one can conclude that the discipline of organisational forecasting faces a paradoxical situation. This paradox can be exposed in many ways, including the

following: (1) foresight exists to help managers in making accurate predictions; its experts, however, warn prospective users to the impossibility of obtaining accurate long-term predictions; (2) formal analytical tools, such as those offered by strategic planning, help to overcome the flaws of unaided human judgment; plans, however, may stimulate the "wishful thinking" they intended to avoid in the first place.

Given the impossibility of reliable prediction, the foresight area has "repositioned", approaching the emerging field of organisational learning. Efforts of prediction have been substituted by the analysis of trends, characterised by Drucker (1997) as the future that has already happened, and scenarios, which aim to identify and describe a set of possible future states. Scenarios will be useful to the extent that they stimulate the organisation in its efforts of learning, providing a more informed reading of possible future(s), and helping to make sense of the desired end state at a given moment in time. They help the organisation to reflect about possible futures and may be considered useful independently of their accuracy. Scenarios are important because they circumvent the insurmountable obstacles to accurate forecasts. These include the following: (1) the future cannot be anticipated except under the form of regular and general patterns; and (2) given the influence of cycles of positive feedback, organisational ecosystems may move towards non-equilibrium. Moreover, as demonstrated by complexity theorists, the evolution from a present state to a future one, seems to be less a sequential process controlled by the organisation, and more the product of a number of interactions between events that take the organisation into new and sometimes unexpected directions (Fonseca 2002). As such, when trying to respond to uncertain events and attempting to influence the environment in a certain way, organisations are contributing to the creation of a dynamic that they cannot control. Examples of the emergence of complex dynamics are available in the literature,

exposing the possibility of both beneficial and harmful dynamics – from the organisation's point of view. The unfolding of a vicious circle has been discussed by Perrow (1984), who showed that the succession of free will actions may escalate to become what he called a normal accident. The case of Honda's dominance of the US motorcycle market provides an eloquent example of a virtuous circle, with the company reaping unexpected outcomes from an unplanned strategy (Pascale 1990).

It is not possible, though, to assume that the future can be read as an extension of the past, but as an outcome of the competitive moves of complex, multi-agent systems. As argued by Stacey (1996), foresight efforts are only reliable when, in a given system, a cause produces a limited number of effects and the relationships between causes and effects can be followed over a long period of time. The practical problem is that, in most complex systems, such as organisations and their environments, there are too many causes and effects to allow close scrutiny. The lack of accuracy aggravates the fact that significant effects may be caused by the accumulation of a great number of small and apparently negligible causes. Small causes may amplify and end up producing large-scale effects. The impossibility of considering all potential small causes, as well as the interactions among them, qualifies any attempt of accurate prediction as fallible. The more the organisation's environment changes, the more this inaccuracy will be exposed.

When we take organisations as complex responsive systems that compete in changing environments, it becomes clear that environments are moving targets, whose characteristics are in constant flux, while agents interact with other agents that are, themselves, complex and responsive (Stacey 1996). Many of these interactions can appear to an external observer as trivial, but they may nevertheless escalate and produce major consequences. The impact of "small causes" that combine with one another, leads to the creation of surprising and unpredictable futures in an emergent fashion (Thiétart

& Forgues 1997). In other words, through their actions, organisational actors create contexts. These contexts, in turn, develop a dynamic of their own which escapes their control. The future then, cannot be predicted, and organisational foresight techniques should not aim at prediction, but at the facilitation of learning about the major trends, framing the debate on how the changing states of the world may be dealt with. The irrevocable unpredictability of organisational systems should invite the organisation to create competencies for dealing with changes at the moment in which they occur, i.e. helping them to plan in real-time and to influence the future through action. The role of foresight may then be less of prediction and more of invention through action, as will be discussed in the following section.

FORESIGHT AS INVENTION

This section introduces the foresight-as-invention perspective. In this case, foresight is not taken as an effort to devise what will happen in the future, but as an attempt of articulation between past experiences, today's realities and possible trajectories. The foresight-as-invention perspective is based upon the concept of emergence and conceives the future as the unpredictable outcome of endless interactions between agents. As Eisenhardt and Bhatia (2002) have pointed out, in many industries efforts of adaptability imply the loss of control and the recognition of unpredictability as a given. This stimulates discovery through practice.

The perspective of foresight as invention argues that organisations cannot be fully described by traditional theories and approaches, which are based upon a Newtonian, mechanistic view of the world. Under this view, the future could be anticipated with reasonable accuracy, provided that the organisational foresight system received a proper input and conducted the foresight process in a technically adequate manner. As such,

the future could be discovered through analysis and technique. Recent developments tend to relax the Newtonian script and to emphasise the non-deterministic nature of organisations and their environments. Strategy can then be conceived, among other possibilities, as guided evolution (Lovas & Ghoshal 2000). Organisational complexity scholars rejected the former linear view and pointed out the role of emergence: the future cannot be predicted, because it is being constructed through interaction (Tsoukas & Chia 2002). Under this view, organisations may be thought of as complex feedback systems that co-evolve into an open-ended evolutionary space. These complex systems are indeterministic and impossible to "capture" in formal plans, regardless of how carefully prepared. When the speed of change increases and competitive effects spread quickly, the evolution of business landscapes seems to escape human agency. Expressions like "viral marketing" or "viral organising" have been coined to match these new realities and to reflect the emergent ethos of organisational and environmental change.

The impact of the concept of emergence on the field of organisational foresight is noteworthy. It shows that there are features of organising and of organisational foresight that the traditional mechanistic mindsets and instruments do not allow us to grasp. Recent research suggests that two concepts may be central to this nascent view of foresight: (1) improvisation, and (2) temporal reflexivity. Below, they are discussed and their potential usefulness to the theory of organisational foresight is analysed.

Improvisation. Organisations improvise when they contract planning and action, i.e. when they plan in real-time with the available resources (Cunha, Cunha & Kamoche 1999; Miner, Bassoff & Moorman 2001). Improvisation is an emerging topic in the organisational field. Its conceptual discovery is related to criticisms of traditional

planning modes (Mintzberg 1994) and to the recognition that, in high-velocity environments, occurrences take place at a rate of change that allows little time for planning. This is especially evident in the information technology sector (e.g. Bourgeois & Eisenhardt 1988), but may also be crossing other industries as well, due for example to the exploration of e-business models (Kanter 2001), where speed and innovation are major features.

While improvising, people and organisations learn from real events and test imagined solutions on the spot. In this way, improvisation facilitates the synthesis between learning and imagining, two essential components of organisation development (Calori 2002). Improvisation has also been shown to develop intuition (Bourgeois & Eisenhardt 1988), interrupt simplification (Miller 1990) and favour discovery (Weick 1990). The bias for action and for reflecting-while-doing, which is central to the concept of improvisation, is important because it aptly deals with the impossibility of accurate prediction. If, as pointed out by Godet and Roubelat (1996), certainty is death, then to deal with uncertainty, improvisation is vital. Therefore, and as it is impossible to predict the future – it is open-ended – techniques for foresight and prospective analysis are of limited value. Thus, efforts at prediction should be combined with stimulus for discovery-driven action. Action and sense-making, in turn, may help to shape the future while it unfolds.

In this sense, to improvise is to conduct "real-time foresight". This paradoxical suggestion is a consequence of the observation that people in organisations improvise when they must act immediately, in order to take advantage of unexpected opportunities or to neutralise threatening moves from competitors. Through improvisation, organisations invent unplanned futures. That is why Kanter (2001, p.132) pointed out that "a culture oriented toward tomorrow is a culture of improvisation". The invention

perspective is greatly influenced by a developed sensitivity to the importance of small, local events. These events are often unpredictable and must sometimes be tackled immediately. Organisational improvisation, thus, alters foresight's time horizon: it suggests that a focus on the future must be complemented with attention to the present. The focus on the future will be useless unless the organisation shows its ability to deal with here-and-now challenges. The future and the present are therefore inextricably linked. The future, being a continuation of the present, builds upon it. As such, present and future should be articulated instead of detached. It is then needless to say that the past is critical when deciding what to do in the present. O'Shea (2002) observed that "both the past and the future are important not as determined or deterministic points but as what may enable, and be realisable through, action in the present moment" (p.119). In conclusion, foresight may have to do more with temporal articulation as with the prediction of the future. The crucial issue of temporal reflexivity through articulation is introduced below.

Temporal reflexivity. Organisational improvisation must not be equated with short-term thinking. In fact, improvisation suggests that the articulation between past, present and future is possible, as demonstrated by Brown and Eisenhardt (1997) in their empirical research with computer firms. These authors identified several mechanisms of temporal articulation that may have more to do with foresight and temporal reflexivity than is usually acknowledged. One of the most relevant of those mechanisms is the creation of rigid time intervals for launching new products. These intervals, once internalised, influence the rhythms of the organisation in such a way that they get "entrained" (i.e. enmeshed, articulated) with the pace of other organisational processes.

Internalised and pressing organisational rhythms limit the possibility of musing around the future, and invite the organisation to think about it as a dynamic and palpable projection of the present. In other words, given the iterations between successive generations of products or projects, the future is not separated from the present, but is taken as the sequence and consequence of it. In this case, knowledge and action flow from one project to the next, and the future should not be understood as independent of the present. The future, in fact, is created through reflection-in-action, or the articulation between past knowledge and events, present circumstances and imagined possibilities. The future, therefore, is the result of the integration of present-focused action and future-centred interaction.

Future-centred interactions involve a set of agents that will potentially help in devising open ways. These agents may be insiders or outsiders to the organisation. Inside agents include people involved in contacts with customers (e.g., front-line employees, salesmen), R&D, project leaders, and other potential "vision-shapers". Outside agents may include futurists, lead users and technology experts. All these agents may help the organisation in its effort to make sense of the future. The future, thus, is not conceived as an abstraction, i.e. as something independent of present action, but as the outcome of multiple organisational interactions, some them taking place in the present and aiming to solve local and immediate problems, others trying to materialise a strategy, vision or intent (e.g. Hamel & Prahalad 1994).

The articulation between the past, present and future, should then be thought of as reflection (e.g. strategic planning), but also as action (aimed at solving local problems) and reflection-in-action (making sense of the present, reflecting on how the past can be extrapolated to the future). Instead of exclusively focussing on the future, organisational foresight may thus be viewed as rooted in the capacity to understand how multiple time

horizons interact and eventually merge, in the sense that every future is destined to become past. The importance of temporal articulation for the practice of foresight has been pointed out, for example, in Drucker's (1997) view of foresight as a synthesis of future and past. It is this merging of time horizons that will be discussed in the next section, in order to explore its implications for organisational foresight.

TIME TRAVELS: FORESIGHT'S TEMPORAL LANDSCAPES

Through action, organisations invent their futures. Invented futures are, as such, an outcome of the interaction between multiple time horizons: lessons from the past, possibilities of the present and visions of the future. These time horizons are not easy to separate and distinguish. As indicated by Bradbury and Mainemelis (2001), the experience of organisational transformation involves elements of action and reflection in a dialectical relationship. People and organisations, through action and reflection, combine the past, present and future - circulating from one to another. Organisational foresight may, as such, be viewed as time travelling. During time travels, every kind of combination between past, present and future is possible. To grasp the complexities of foresight, then, is to understand how the invention of the future is a product of the combination of multiple temporal landscapes.

One of the potential contributions of the concepts of improvisation and emergence to the organisational foresight literature is to show how the separation of time, so common in the forecasting literature, may cause more harm than good. Improvisation, while taking place in the present, synthesises time to plan and time to act (Crossan et al. 2002). It provides an example of how, as reflected in Table 1, past, present and future may be intertwined in all possible combinations or "time travels". Below, these temporal relationships, which operate within both foresight-as-prediction and foresight-

as-invention paradigms, will be discussed. Only brief sketches of each case will be presented for the purpose of illustration.

Table 1 about here

Past to Past. Many organisational actions have taken place in the past and will not recur. Routines that were once useful may lose their value for several reasons. One of the more powerful reasons is the evolution of technology cycles, which may introduce significant changes in organisations and whole industries (Tushman & O'Reilly 1997), rendering old routines obsolete. Episodic improvisations used for solving non-habitual problems may vanish once the problem is solved. Experimental behaviours may be forgotten because they have not worked well enough to be kept active. Thus, many organisational behaviours may simply "die" after having been used, either successfully or unsuccessfully (Cunha, Kamoche & Cunha, forthcoming).

Past to Present. It is possible that some past behaviours may be transferred to the present. This process of transference may display both positive and negative effects. Some of these effects will be discussed in this "travel", which leads people to see the past in the present (Gilovich 1981). This happens, for example, when a solution that worked well in the past is perceived as adequate for solving a current problem. Organisational knowledge is then stocked in memory and retrieved when necessary (Walsh & Ungson 1991). Another influence of the past in the present is the development of experience-based interpretive schemas that inform individuals about how to act in a given circumstance (Ford 1996).

Other effects of the past-present influence include the development of frames of thought and action. Frames of habitual thought and action narrow the range of likely behaviours in familiar organisational settings (Gioia & Poole 1984). This tendency tends to be reinforced by the fact that schemas, once "validated" in the organisational or institutional contexts, are likely to be applied as standard procedures. The perception of competency that they entail may increase an organisation's vulnerability to competency traps, with more experience with an inferior procedure leading to a growing desire to use it, instead of learning different and more adequate procedures (Levitt & March 1988). This pervasive and harmful influence of previous knowledge on present results has also been documented by Miller's research on the Icarus paradox (e.g. Miller 1990), or the over-commitment to known and tested courses of action.

Past to Future. Some knowledge used in the past may be considered so valuable for a potential future that a proactive effort is made to keep it available in some form. In this case, knowledge was originally developed to deal with an existing problem. For one reason or another, this knowledge became unnecessary. For example, medical or technological advances may have rendered some knowledge or practices obsolete. The possibility, however, remains that they may be needed in the future. The eradication of a disease may render knowledge on it irrelevant. But a possible resurgence of the disease as a consequence of terrorist intentions or natural reasons may suggest the need to protect existing knowledge. In this case, organisations create ways to protect and encode such knowledge, in order to retrieve it if and when it should become necessary. Davenport and Prusak (1998) mentioned this practice as an instance of knowledge management.

Present to Past. Some organisational practices may be taking place in the present, having already started their journey to the past. This may be due to obsolescence or organisational change. While making a present decision, managers may find themselves recalling a previous situation with similar characteristics (George 2000) or recurring to "tried and true" paths. Travels from the present to the past are often due to the fact that people who have successfully used a certain method are not likely to readily switch to another one. They tend to search out the roots of present decisions in past successes.

To make sense of the present, people often return to the past. The past provides experience, tested assumptions and valuable learning. But it may also lead to erroneous cause-effect associations, superstitious learning and illusory perceptions of psychological safety. The advantages of this "time travel", thus, may not be enough to ensure the quality of present decisions. It is this web of effects that led Schoemaker (1995) to say that looking at the past is a double-edged sword. Other examples of travels from present to past include the use of a discredited and passing organisational fad or fashion, or what has been called organisational nostalgia, a "time travel" that leads people to look for safe psychological havens in a golden past that contrasts with a less bright present. As Gabriel (1993) has remarked, nostalgia tells us more about today's discontents than about yesterday's contents.

Present to Present. This corresponds to the ongoing improvisation: an action is taken to solve a problem that is important and pressing enough to invite people to tackle it while it is occurring, and for which there was no established or tried solution. "Pure" improvisations are not taken with the intention of learning for the future, but simply for the sake of immediate problem solving (Cunha, Kamoche & Cunha, forthcoming). They

exist in the present due to some present problem. Most of them will possibly be forgotten and travel back to the past. Practitioner-orientated literature is starting to explore some implications of this type of approach under such labels as real-time strategy (Beinhocker & Kaplan 2002) or just-in-time strategy (Bryan 2002).

Present to Future. Traditional foresight issues are concerned mainly with this case: how can an organisation prepare the future in the present? As discussed, the capacity to transfer the present to the future has been described as a distinguishing feature of the competent manager. This skill has received several names, such as planning or strategic intent: the art of anticipating the future in the present. Its benefits have been and still are vigorously presented by management scholars (e.g. Kim & Mauborgne 2002). Planning, involving the systematic study of issues, may help organisations to make better, more informed decisions. As such, despite its limits, the practice of planning, more than the art of making plans, can be of enormous value to organizations. This does not preclude the possibility of making poor use of the planning process. Langley (1995) provided several examples of how the misuse of planning may lead to negative consequences, including the symptoms that the author aggregated under the label "paralysis by analysis" (e.g. paper fights and decision vacuums).

Other travels from present to future are identifiable. One is the situation that Weick (1993) described as *vu jadé*, which occurs when one is confronted, in the here and now, with a completely novel situation that transports him/her to what can be thought of, by analogy and through the collapse of previous knowledge, as an unknown and unimagined future. This instantaneous leap from the present to the future, forces the person to make an extra effort of sensemaking, in order to comprehend what is going on in the present.

Future to Past. Future-past travelling may occur when, while scanning possible futures, organisational foresight leads to situations of *déjà vu*: there is a pattern, whose contours are recognisable in advance. Time may elapse momentarily, with past and future becoming one and the same thing. Pattern recognition or previous experience is certainly important, because organisational cycles repeat. This is also why intuition is so valuable: it instantaneously blends a projected future with accumulated knowledge (e.g. Mintzberg & Westley 2001). The tacit knowledge it rests upon is an important, but often ignored, ingredient of organisational foresight.

Future to Present. This is a classic of time travelling. Ackoff (1981), for example, urged managers to be "future-oriented" by imagining the direction of the company and working backward from that future. The well known strategy for bringing the future into the present is perhaps scenario planning (e.g. Kleiner 1994; Wack 1985). In this case, the organisation makes an effort to put itself in the future in the present. The effort may be more valuable for the learning that ensues than from the real capacity to anticipate what occurrences will materialise. It can depart from a future perfect (Rura-Polley, Pitsis & Clegg 2000) or from a multiple scenario approach, but the learning output is a fundamental part of the process. In the above-mentioned or any other forms, scenarios become one of the more prominent developments in the field of organisational foresight. They show how important the art of planning-in-reverse may be for travelling from the future to the present.

Another form of travelling from the future to the present is through "stimulational marketing", which refers to the creation of a positive demand for a product where none currently exists. The introduction of the pocket-sized transistor radio by Sony, provides

a good illustration of stimulational marketing in action: the company imagined a product that did not exist at the time, and started to create demand for this through imagination. The initial users were Sony salesmen, whose shirts had pockets slightly larger than normal pockets. These were perfect to slip the "pocket-sized" radio into until technological advance allowed for the manufacture of truly pocketable radios (Varadarajan et al. 1992).

Future to Future. Some organisational practices do always have an eye on the future. In this sense, they are in the future looking for an even more distant future. This is the case of R&D activities. These are important for their long.term impacts, not for immediate consequences. Research activity, while cumulative and past-dependent, is always forward-looking. When an issue is solved, another will arise. R&D thus represents the future looking forward.

Beyond binary time travels

Organisations may actually be involved in more complex moments of temporal coordination than the above division suggests. This may occur, for example, when the three temporal sections are present at the same time. The use of learning histories, as discussed by Kleiner and Roth (1997), constitutes an example. Learning histories are written narratives of past critical episodes. These episodes are retrieved in order to help people move forward. This is expected to happen due to the uncovering of the underpinnings of a particular situation. In this case, people re-experience an event together, learn its meaning and apply the lessons learned in forthcoming episodes. Learning histories are powerful learning processes because they allow time stretching. As noted by Tsoukas and Hatch (2001), narratives are temporally sensitive and allow

multiple connections of events across time. They synthesise psychological time and clock time, accommodate multiple temporalities, introduce a component of "complication" that is absent from propositional thinking and connect what Weick and Roberts (1993) described as longer stretches of time. As these authors have noted, connections between the past, the present and the future complicate the collective mind. If, as noted by Tsoukas and Hatch (2001), "our understandings of complex systems and their properties will always be grounded in the narratives we construct about them" (p.1007), narratives poor in temporality will not give rise to rich understandings of complex systems.

Examples of complicated time travels can be taken from Gioia and Chittipeddi (1991) and Isabella (1990). In their study of strategic change in a public university, Gioia and Chittipeddi concluded that the initiation of the change process involves both sensemaking (travelling to the past in order to ascribe meaning to relevant information) and sensegiving (travelling to the future on the wings of a vision derived from the previous process of sensemaking). These two processes took place in an iterative, sequential, and reciprocal fashion. Isabella's research on evolving interpretations of managers during a change process also contributes to an understanding of the role of temporal reflexivity. The author concluded that managers initially construed change analogically (by drawing on past experiences) and, as change unfolded, symbolically (their guide for the future being the symbols coming from senior management).

IMPLICATIONS

The emergent nature of organisational environments, the inseparability of time horizons and the fallibility of human judgment provide a setting for the study of

organisational foresight that differs significantly from what is generally portrayed in the literature. Some implications, theoretical and managerial, arising from the perspective developed in this paper, which is informed by the perspective of temporal reflexivity, are significant and will be briefly presented in this section.

A first implication is that the past is an inescapable presence in the present. Therefore, its influence needs to be explicitly managed, in order to avoid the organisation repeating its actions over and over. The past provides experience and perhaps valuable learning. But when the past is taken too seriously, an organisation risks becoming prisoner of organisational memory and incurring single loop learning (Argyris 1992; Moorman & Miner 1998).

The risks of being trapped by the present are well captured in the cognitive phenomenon of availability bias. The availability bias (Tversky & Kahneman 1973) suggests that people may attribute an excessive importance to available information simply because it is available. Given the difficulty of envisioning how the future may unfold, people may overemphasise what is going on in the present. Thus, the organisation may make a certain decision not because it results from a reflected choice, but as the outcome of a process of cognitive overconfidence (Russo & Schoemaker 1992).

Another implication has to do with the likely consequences of dreams of the future. It is certainly important for an organisation to consider where it wants to go, or what vision it intends to enact. Beautiful visions of the future, however, should not distract the organisation from the conditions of the present. Therefore, it is as important to prepare the future as to create conditions for aptly responding to the challenges of the present.

Several remedies have been proposed to deal with the problems discussed above. Most of them have to do with the need to develop time-mindful, complicated understandings (Bartunek et al. 1983; Weick & Sutcliffe 2001; Cunha, Cunha & Cabral-Cardoso, forthcoming). Complicated understandings refer to the voluntary avoidance of automatic and mindless perspectives, through the analyses of an issue from multiple points of view. Means for developing complicated understandings that may contribute to avoiding time traps, include the distinction between experience and learning (observing that time breeds experience but not necessarily learning), considering that organisational memory is both friend and foe, not taking good old recipes as adequate for new situations, actively searching for potentially positive as well as negative consequences of strategic decisions, and taking visions as stimulus for action, not as pauses for reflection. These examples are nothing more than a sample of possibilities for avoiding the negative consequences of the interaction between different temporal horizons. It should be noted, however, that it is as important to reap the positive consequences of temporal coordination as it is to avoid the negative ones.

CONCLUSION

This paper discussed organisational foresight as temporal reflexivity. The concepts of emergence, improvisation – a concept that takes emergence seriously – and temporal coordination, or the necessity to articulate the past, present and future, have been related. Foresight was then presented as a field that deals with "time travels", more than with the "simple" anticipation of the shape of the future. By taking foresight as time travelling and accepting that sometimes it is necessary to look back to see ahead (Brown 2001), an alternative view of foresight emerges: foresight as the need to understand how the past, present and future interact, merge, and constrain each other.

This perspective enriches the study of foresight by articulating reflection and action, prediction and comprehension, anticipation and sensemaking. In this sense, the paper contributes to the literature on the emergent side of organising. This change in perspective does not mean that traditional approaches to foresight were wrong or that planning has become useless. In fact, recent empirical evidence suggests otherwise, i.e. that firms perceive a growing pressure to plan (Harris 2001).

The foresight-as-time-travel perspective suggests that, as recent developments in the organisational sciences have pointed out, the path towards the future may be impossible to understand unless the exploration of the future is deeply rooted in past learning and present action. This paper has offered a preliminary glimpse of a possible theoretical future through the reading of past research.

REFERENCES

Ackoff, R. (1970). *A concept of corporate planning*. Wiley, New York.

Ackoff, R. (1981). *Creating the corporate future. Plan or be planned for*. Wiley, New York.

Ancona, D. & Chong, C.L. (1996). Entrainment: Pace, cycle, and rhythm in organizational behavior. In: Staw, B.M. & L.L. Cummings, L.L. (eds.), *Research in Organizational Behavior*. JAI Press, Greenwich, CT, vol.18, pp.251-284.

Ansoff, H.I. (1964). A quasi-analytical approach of the business strategy problem. *Management Technology, 4*(1), 67-77.

Argyris, C. (1992). *On organizational learning*. Blackwell, Cambridge, MA.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 52*, 1-26.

Bartunek, J.M., Gordon, J.R., & Weathersby, R.P. (1983). Developing "complicated" understanding in administrators. *Academy of Management Review, 8*, 273-284.

Beckenstein, A.R. (1982). Forecasting and the environment: The challenges of rapid change. In: Makridakis, S. & Wheelwright, S.C. (Eds.), *Handbook of forecasting. A manager's guide*. Wiley, New York, pp.259-272.

Beinhocker, E.D. & Kaplan, S. (2002). Tired of strategic planning? *McKinsey Quarterly*, special issue, 49-57.

Bourgeois, L.J. & Eisenhardt, K.M. (1988). Strategic decision processes in high velocity environments: Four cases in the microcomputer industry. *Management Science, 34*, 816-835.

Bradbury, H. & Mainemelis, C. (2001). Learning history and organizational praxis. *Journal of Management Inquiry, 10*, 340-357.

Brown, S.L. & Eisenhardt, K. (1997). The art of continuous change: Linking complexity theory and time-paced evolution in relentlessly shifting organizations. *Administrative Science Quarterly, 42*, 1-34.

Brown, S. (2001). *Marketing – The retro revolution*. Sage, London.

Bryan, L.L. (2002). Just-in-time strategy for a turbulent world. *McKinsey Quarterly*, special issue, 17-27.

Calori, R. (2002). Organizational development and the ontology of creative dialectical evolution. *Organization, 9*, 127-150.

Crossan, M., Cunha, J.V., Vera, D. & Cunha, M.P. (2002). Time and organizational improvisation: Kairos meets Chronos. Paper presented at the Dynamic Time and Creative Inquiry in Organizational Change Conference. Cape Ann, MA, 18-21 June.

Cunha, J.V., Cunha, M.P. & Faia-Correia, M. (2001). Scenarios for improvisation: Long range planning redeemed. *Journal of General Management, 27*(2), 67-80.

Cunha, M.P., Cunha, J.V. & Cabral-Cardoso, C. (forthcoming). Looking for complication: Four approaches to management education. *Journal of Management Education*.

Cunha, M.P., Cunha, J.V. & Kamoche, K. (1999). Organizational improvisation: What, when, how and why. *International Journal of Management Reviews, 1*, 299-341.

Cunha, M.P., Kamoche, K. & Cunha, R.C. (forthcoming). Organizational improvisation and leadership: A field study in two computer-mediated settings. *International Studies of Management and Organization*.

D'Aveni, R.A. (1994). *Hypercompetition: Managing the dynamics of strategic maneuvering*. Free Press, New York.

Davenport, T. & Prusak, L. (1998). *Working knowledge*. Harvard Business School Press, Boston, MA.

Drucker, P.F. (1997). The future that has already happened. *Harvard Business Review, 75*(5), 20-24.

Edelman, L.F. & Benning, A.L. (1998). Incremental revolution: Organizational change in highly turbulent environments. Paper presented at the *Academy of Management meeting*, San Diego, CA, August.

Eisenhardt, K.M. & Bhatia, M.H. (2002). Organizational complexity and computation. In: Baum, J.A.C. (ed.), *Companion to organizations*. Oxford: Blackwell, Oxford, pp.442-466.

Eisenhardt, K.M. & Martin, J.A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal, 21*, 1105-1121.

Fayol, H. (1949). *General and industrial management*. Pitman, London.

Fildes, R. (1982). Forecasting: The issues. In: Makridakis, S. & Wheelwright, S.C. (eds.), *Handbook of forecasting. A manager's guide*. Wiley, New York, pp.83-104.

Fonseca, J. (2002). *Complexity and innovation in organizations*. Routledge, London.

Ford, C. (1996). A theory of individual creative action in multiple domains. *Academy of Management Review, 21*, 1112-1142.

Gabriel, Y (1993). Organizational nostalgia. In: Fineman, S. (ed.), *Emotion in organizations*. Sage, London, pp.118-141.

George, J.M. (2000). Emotions and leadership: The role of emotional intelligence. *Human Relations, 53*, 1027-1055.

Giddens, A. (1984). *The constitution of society: Outline of a theory of structure*. University of California Press, Berkeley, CA.

Gilovich, J. (1981). Seeing the past in the present: The effect of associations to familiar events on judgments and decisions. *Journal of Personality and Social Psychology, 40*, 797-808.

Gioia, D.A. & Chittipeddi, K. (1991). Sensemaking and sensegiving in strategic change initiation. *Strategic Management Journal, 12*, 433-448.

Gioia, D.A. & Poole, P.P. (1984). Scripts in organizational behavior. *Academy of Management Behavior, 9*, 449-459.

Godet, M. & Roubelat, F. (1996). Creating the future: The use and misuse of scenarios. *Long Range Planning, 29*(2), 164-171.

Hamel, G. & Prahalad, C.K. (1994). *Competing for the future*. Harvard Business School Press, Boston, MA.

Harris, L.C. (2001). Getting professionals to plan: Pressures, obstacles and tactical responses. *Long Range Planning, 33*, 849-877.

Isabella, L.A. (1990). Evolving interpretations as a change unfolds: How managers construe organizational events. *Academy of Management Journal, 33*, 7-41.

Kanter, R.M. (2001). *Evolve. Succeeding in the digital culture of tomorrow*. Harvard Business School Press, Boston, MA.

Kim, W.C. & Mauborgne, R. (2002). Charting your company's future. *Harvard Business Review*, June, 77-83.

Kleiner, A. (1994). Creating scenarios. In: Senge, P.M., Roberts, C. Ross, R., Smith, B. & Kleiner, A. (eds), *The fifth discipline fieldbook: Strategies and tools for building a learning organization*. Currency/Doubleday, New York.

Kleiner, A. & Roth, G. (1997). How to make experience your company's best teacher. *Harvard Business Review, 75*(5), 172-177.

Laermer, R. (2001). *Trendspotting: Think forward, get ahead, and cash in on the future*. Perigee, New York.

Lampel, J. & Shapira, Z. (2001). Judgmental errors, interactive norms, and the difficulty of detecting strategic surprises. *Organization Science, 12*, 599-611.

Langley, A. (1995). Between 'paralysis by analysis' and 'extinction by instinct'. *Sloan Management Review*, Spring, 63-76.

Levitt, B. & March, J.G. (1988). Organizational learning. *Annual Review of Psychology, 14*, 319-340.

Lovas, B. & Ghoshal, S. (2000). Strategy as guided evolution. *Strategic Management Journal, 21*, 875-896.

Makridakis, S. & Wheelwright, S.C. (eds.) (1982a). *Handbook of forecasting. A manager's guide*. Wiley, New York.

Makridakis, S. & Wheelwright, S.C. (1982b). Introduction to management forecasting: Status and needs. In: Makridakis, S. & Wheelwright, S.C. (eds.), *Handbook of forecasting. A manager's guide*. New York, Wiley, pp.3-12.

Miller, D. (1990). *The Icarus paradox: How exceptional companies bring about their own fall*. HarperCollins, New York.

Miner, A.S., Bassoff, P. & Moorman, C. (2001). Organizational improvisation and learning: A field study. *Administrative Science Quarterly, 46*, 304-337.

Mintzberg, H. (1994). *The rise and fall of strategic planning*. Prentice-Hall, Hemel Hempstead.

Mintzberg, H & Westley, F. (2001). Decision making: It's not what you think. *Sloan Management Review, 42(3)*, 89-93.

Moorman, C. & Miner, A. (1998). The convergence between planning and execution: Improvisation in new product development. *Journal of Marketing, 62*, 1-20.

O'Shea, A. (2002). The (r)evolution of new product innovation. *Organization, 9*, 113-125.

Orlikowsi, W.J. & Yates, J. (2002). It's about time: Temporal structuring in organizations. *Organization Science, 13*, 684-700.

Pascale, R.T. (1990). *Managing on the edge*. Penguin, London.

Perrow, C. (1984). *Normal accidents: Living with high risk technologies*. Basic Books, New York.

Raimond, P. (1996). Two styles of foresight: Are we predicting the future or inventing it? *Long Range Planning, 29*, 208-214.

Rura-Polley, T., Pitsis, T. & Clegg, S.R. (2000). Future perfect tense? Paper presented at the Academy of Management Meeting, Toronto.

Russo, J.E. & Schoemaker, P.J.H. (1992). Managing overconfidence. *Sloan Management Review*, Winter, 7-17.

Schoemaker, P.J.H. (1995). Strategic planning: A tool for strategic thinking. *Sloan Management Review*, Winter, 25-40.

Stacey, R.D. (1996). *Strategic management and organisational dynamics* (2nd ed.). Pitman, London.

Szulanski, G. & Amin, K. (2001). Learning to make strategy: Balancing discipline and imagination. *Long Range Planning, 34*, 537-556.

Thiétart, R.A. & Forgues, B. (1997). Action, structure and chaos. *Organization Studies, 18*, 119-143.

Tsoukas, H. & Chia, R. (2002). On organizational becoming: Rethinking organizational change. *Organization Science, 13*, 567-582.

Tsoukas, M. & Hatch, M.J. (2001). Complex thinking, complex practice: The case for a narrative approach to organizational complexity. *Human Relations, 54*, 979-1013.

Tushman, M.L. & O'Reilly, C.A. (1997). *Winning through innovation*. Harvard Business School Press, Boston. MA.

Varadarajan, P.R., Clark, T. & Pride, W.M. (1992). Controlling the uncontrollable: Managing your market environment. *Sloan Management Review*, Winter, 39-47.

Wack, P. (1985). Scenarios: Uncharted waters ahead. *Harvard Business Review, 64*(1), 72-89.

Walsh, J.P. & Ungson, G.R. (1991). Organizational memory. *Academy of Management Review, 16*, 578-91.

Weick, K.E. (1990). Cartographic myths in organizations. In A.S. Huff (Ed.), *Mapping strategic thought*. Wiley, New York., pp.1-10.

Weick, K. E. (1993). The collapse of sensemaking in organizations: The Mann Gulch disaster. *Administrative Science Quarterly, 38*, 628-652.

Weick, K.E. & Roberts, K.H. (1993). Collective mind in organizations: Heedful interrelating on flight decks. *Administrative Science Quarterly, 38*, 357-381.

Weick, K.E. & Sutcliffe, K.M. (2001). *Managing the unexpected*. Jossey Bass, San Francisco.

Table 1

Travels in time: Foresight's temporal landscapes

	Past	Present	Future
Past	Past-Past (e.g. Former practices)	Past-Present (e.g. Organisational memory)	Past-Future (e.g. Organisational retrieval)
Present	Present-Past (e.g.Declining practices)	Present-Present (e.g. Improvisations)	Present-Future (e.g. Planning)
Future	Future-Past (e.g.Intuition)	Future-Present (e.g. Scenario planning)	Future-Future (e.g. R&D)