

Cross-fertilising scenario planning and business history by process-tracing historical developments: Aiding counterfactual reasoning and uncovering history to come

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Abstract

Scenario planning is a tool for considering alternative futures and their potential impact. The paper firstly addresses the paucity of history on management tools by discussing several important lineages in scenario planning's evolution over time, and the emphasis placed on historical analysis by some specific variants therein. Secondly, it describes how causal analysis can be enhanced in scenario planning by process-tracing important historical developments. Thirdly, it outlines how a scenario planning that incorporates history in this way can assist historians to identify counterfactuals and understand the relative importance of alternative causes, thus enriching historical accounts. It can also enable business historians' research on the relationship between businesses and their external environments, and on management decision-making. In concluding, scholars of scenario planning and business history are urged to open a mutually-beneficial dialogue. The paper initiates this by setting out some ways in which they can cross-fertilise each other.

Keywords: scenario planning; process-tracing; causal analysis; counterfactual history

Introduction

Perchard et al. (2017) have recently promoted a closer collaboration between business historians and international-business scholars, highlighting historians' ability to aid the latter by uncovering path-dependence and dynamism (Jones & Khanna, 2006; Buckley, 2009). This paper shows that business history also has much to contribute to another field – scenario planning – and for similar reasons. Scenario planning is a management tool for considering alternative futures forged in the tension between historical determinism and novelty (Ramírez & Wilkinson, 2014). The past weighs on the future, but its weight is countered by human inventiveness, and the tendency for causes to combine in novel ways. The future is continuously 'made present' (Popp & Holt, 2013) through a tug-of-war between these competing tendencies (Ding et al., 2017; Masrani et al., 2020). When considering what it may hold, balancing their relative influence is a difficult task, but one at which historians are adept from their consideration of futures now past. Each past – just as each present – was once an imagined future (Koselleck, 1985); historians therefore have much to offer scenario planning (Schoemaker, 2020).

However, as detailed herein too, the reverse is also true. Scenario planning can contribute much to business history by assisting in the identifying of plausible counterfactuals, and in the ranking in importance of alternative causes; by enriching historical studies with data-and-trend analysis, and enabling research on the relationship between businesses and their external environments. The paper therefore urges both sets of scholars to open a mutually-beneficial dialogue, and initiates this by highlighting some ways in which the two can cross-fertilise each other. It is time to 'intensify intellectual traffic' (Rowland & Spaniol, 2020) between the two; they have many similarities but opposite directions of temporal focus. With some careful splicing, they can each contribute useful insights in their reverse directions of focus, allowing a combined retrospective and prospective perspective, yet one that is *not* dependent on projections, grand universal narratives, or post-hoc rationalisations.

Neither scenario planning nor business history is necessarily deficient in isolation, having both contributed much to understanding in their respective fields, and well beyond. Yet, by joining forces,

the light shone by each can be further magnified by the other. Past and future are inextricably intertwined by the present; to focus exclusively on either impairs vision. Only by considering both in unison can we overcome myopia, but without a still more damaging hyperopia, in which our focus is so distantly on the future that we endanger it by overlooking the present (Burt et al., 2015). Scholars of scenario planning and business history are therefore urged to collaborate in developing scenario planning as a tool for considering ‘history to come’ (Shackle, 1984) and in developing history into a genuinely prospective field with a forward-looking outlook, as-well-as a past focus.

Zan (2016, p.573) recently highlighted a paucity of history on management tools by asking what remains ‘of the tools and notions that were so crucial in the 1970s and 1980s?’. In response, this paper discusses the development of some major scenario-planning lineages, highlighting what remains of their 1970s and 1980s variants. It considers the relative emphasis on historical analysis in them, and how this emphasis has varied over time. In the conventional history of scenario planning, it was devised as a form of military planning, and then applied to public policy by RAND Corporation, just after WWII (Bradfield et al., 2005). It was then used by Royal Dutch Shell in the 1970s to anticipate the oil crises of that decade (Wack, 1985a; 1985b). Yet, in reality, scenario planning’s roots are much broader and deeper, and they have developed along a number of paths (MacKay & McKiernan, 2018).

In perhaps its most novel contribution, the paper sets out a new method for incorporating history into scenario planning in order to augment causal analysis within it. Among the historian’s most potent weapons is ‘process-tracing’, which is a method for identifying and assessing the causes of historical developments. Through process-tracing, history can furnish scenario planning with clues as to how causes *may* combine in novel ways in the future, disrupting path-dependence. Conversely, by incorporating history, scenario planning can assist historians to consider how particular decisions combined with contingency to affect the course of past events, thus aiding consideration of plausible counterfactuals. This can, in turn, focus attention on the future’s present openness, and how decisions taken now may shape ‘history to come’ (Shackle, 1984). The next section provides a brief history of some major scenario-planning lineages. The subsequent section describes the new method for augmenting causal analysis in scenario planning. The section that follows that sets out the benefits for history from a closer collaboration with scenario planning. The concluding section summarises the discussion and sets out some promising areas for future research.

Scenario planning’s origins and major lineages

Early foundations

Bradfield et al. (2005, p.797) show *scenarios* to have an ancient history, some of which is documented by MacKay & McKiernan (2018, p.7-13). However, both agree that the origins of what we today call scenario *planning* can be found in the military’s use of ‘war gaming’. The first documentation of something akin to modern-day scenario planning appeared in the 19th century in the writings of von Clausewitz, and von Moltke, who were members of the German General Staff. The former set out his treatise ‘On war’ in 1832, which influenced the latter when establishing the Prussian Officer Training College, in which trainees were taught using simulations, or ‘war games’ (McElwee, 1974). A later influential member of the General Staff, von Schlieffen, held annual war games from 1896 to 1905, in which war on two fronts – with England and France, and with Russia – was simulated. Much of the resulting planning was incorporated in the ‘von Schlieffen plan’ that set out the German strategy for WWI (MacKay & McKiernan, 2018, p. 17). However, when confronted by reality in WWI, this planning proved somewhat mechanistic; it perhaps had less focus than its modern equivalents on planning for multiple eventualities (MacKay & McKiernan, 2018, p. 18). Nevertheless, underlining scenario planning’s military origins, RAND then used both qualitative and computer-based simulation approaches to create military-political scenarios as the Cold War began to unfold after WWII. In so doing, they laid the foundations for modern scenario planning – or, at least, for one major lineage of it.

The 'conventional' history

It is usually at this point that what MacKay & McKiernan (2018) call 'conventional' accounts of scenario planning's history begin. These conventional accounts start with scenario planning's emergence as a form of military planning after World War II (van der Heijden, 1996), its use then extended to the public-policy domain in the 1960s by Herman Kahn and others – such as Singer, Ruebhausen, and Wiener – at RAND (Varum & Melo, 2010; Bradfield et al., 2005). Kahn is thought to have been the inspiration for 'Dr Strangelove' in the eponymous film (Lindley, 2001). In an early contribution, Kahn (1962) set out several scenarios related to thermonuclear war – including one in which, controversially, the US launched such a war. For Kahn (1962), scenario planning was for considering just such 'unexperienced events', which, because of their novelty, require aids to the imagination (Goodspeed, 2020). There is a clear link between Kahn's early methods and some today: Kahn's (1962, p.143) approach emphasised sequences of events, as some contemporary scenario approaches do, as described subsequently. Focusing on sequences of events allows consideration of the interactions between them, stimulating consideration of how they might combine in novel ways leading to new system states, and thus emphasising dynamism and change (Goodspeed, 2020).

The benefits of scenario planning, as it was then, were described by Kahn (1962, p.175) thus: 'the serious, if temporary, consideration of extreme examples jerks us out of our peaceful world and stimulates our imaginations'. Notably, RAND was full of quantitative analysts at the time; yet Kahn (1962) was inspired by the movie industry, and believed that creating imaginative and narrative-based scenarios, just as screenwriters created plotlines, could help in considering strategic options (Kahn, 1962, p.175). However, while Kahn's approach was highly evocative, its focus was circumstances of novelty. To become more established, its process needed clearly defining, and it needed to allow consideration of routine futures too (Goodspeed, 2020) – tasks later taken up by Shell. Yet, the evocativeness of Kahn's approach still remains central to scenario planning today.

However, in this conventional account, it is another 'founding father' that is more pivotal to scenario planning's popularisation in the business domain. Namely, Pierre Wack, whose work on scenarios at Shell in the 1970s and 1980s is documented in two widely-cited case studies in *Harvard Business Review* (Wack, 1985a; 1985b; Chermack, 2017). At Shell in the 1970s, scenario planning grew to pre-eminence because of a realisation that long-term forecasting in the business domain is unreliable (Wilkinson, et al., 2013). Its aim was foresight in contexts of 'accelerated change, greater complexity and genuine uncertainty' (Wilkinson et al., 2013, p.704-705). Shell scenarios in the 1970s emphasised plausibility over probability, and were inductive, with the nature of any perceived forthcoming disruption only emergent after the exercise (Wilkinson et al., 2013). The inductive scenario-planning process was designed to challenge the mental models of senior executives so that they 're-perceive the future' through logical stories based on cause-and-effect (Wilkinson et al., 2013). Their focus was on macro changes in the wider business environment, in interaction with more micro changes to the strategies and actions of key players, such as OPEC governments and major oil-importing states. Scenario planning at this time and place (i.e. in Shell) was, essentially then, a tool for uncovering what we would now identify as complexity (Wilkinson et al., 2013).

Reflecting this, it was designed to distinguish the 'pre-determined elements' of the future from the 'critical uncertainties' (Wack, 1985a, p.76) – i.e. the tension between 'historical determinism' and 'novelty' (Ramírez & Wilkinson, 2014, p.256). Central to this was Shell's two-generation scenarios process, in which 'first-generation' scenarios were exploratory and had the goal of increasing understanding (Wack, 1985a, p.78). They were intended to provide insights into the focal system and the interactions among the various forces and events driving it (Wack, 1985a, p.78). However, one among these first-generation exploratory scenarios was designed to be 'surprise free', amounting essentially to a forecast or straightforward projection of existing trends (Wack, 1985a, p.77). Its inclusion was deemed essential as it represented the implicit 'business-as-usual' views about the future

shared by managers, making it possible for them to ‘recognise their outlook in the scenario package’ (Wack, 1985a, p.77), without which the process would be rejected by them. Once these exploratory scenarios were complete, ‘second-generation’ scenarios were designed to facilitate better understanding of the nature of the uncertainties involved. This involved a close examination of the principle actors within Shell’s environment: oil producers, consumers, and companies (Wack, 1985a, p.78), including an analysis of their micro-level behaviours, and the motivations and interests driving them. This then facilitated reconsideration of which aspects of the future were really pre-determined, and which remained uncertain, leading to a ‘re-perceiving’ of the future, and to the questioning of business-as-usual assumptions (Wack, 1985a, p.78-80).

Shell used this approach between 1973 and 1978 to produce a set of scenarios highlighting the plausibility of a disruption to what had then been decades of uninterrupted growth resulting from a politically-motivated oil crisis (Wilkinson et al., 2013, p.705). When just such a disruption occurred, this planning allowed Shell to steal a march on competitors by adjusting their production capacity downwards sooner (Jefferson, 2012). However, over time, at least as implemented beyond that organisation, Shell’s ‘Intuitive Logics’ scenario-planning approach, as outlined above, has shifted somewhat away from this approach (Ramírez & Wilkinson, 2014). Indeed, even within Shell, this form of scenario planning changed over time. By the late 1980s, Shell scenarios were linked to the wider process of strategic visioning and competitor analysis in order to identify strategic options, thus transforming scenario planning into a decision-support tool for ‘seeding’, rather than ‘re-perceiving’ the future (Wilkinson et al., 2013). More recently, a more truncated form of Intuitive Logics scenario planning¹ has gained prominence (Sharpe, 2008; Wilkinson & Kupers, 2013, 2014; Selin, 2008). As commonly implemented, it has eight steps, as described in Table 1, and employs a 2x2-matrix to frame the future (Cairns & Wright, 2018; Ramírez & Wilkinson, 2014). Under this approach, the causal ‘driving forces of change’ within a focal system are often identified in a quite simple way through a PESTEL analysis (Cairns et al., 2016).

INSERT TABLE 1 ABOUT HERE

The roots of this simpler Intuitive Logics scenario planning are still traceable to Shell, but only indirectly. Its origins lie in the work of Schwarz, Collyns and van der Heijden at Global Business Networks, a company they established *subsequently* to their time at Shell (Sharpe, 2008; Ramírez & Wilkinson, 2014, p.257). In Sharpe (2008), Schwarz and Collyns discuss the need to develop ‘faster turnaround’ methods in order to deal with the increasing time-pressures faced by managers, leading them to create the relatively simple and easy-to-implement variant of Intuitive Logics that is based on a 2x2 matrix. At Shell in the 1970s, a single Intuitive Logics scenario exercise could last months (Sharpe, 2008), whereas today’s 2x2-matrix based variant requires a much lower time-and-resource commitment. Such largesse may have been a product of its time, yet there is a certain paradox here. Because complexity has increased, the ‘long form’ of Intuitive Logics scenario planning, as practiced originally at Shell, may be more necessary, but is *perhaps* less feasible. The bounds of rationality move inwards, as the bounds of a focal system move outwards, and its complexity increases. Sorting out meaningless noise from meaningful information thus becomes more-and-more difficult, and identifying potentially important changes by re-perceiving the future becomes harder, yet more essential. The challenge is to find a way to aid this process, but without greatly increasing the time-and-cost

¹ At least compared to that deployed at Shell in the 1970s and 1980s, which had a multi-million pound budget and used large teams of analysts (Sharpe, 2008).

requirements of scenario planning. Incorporating the process-tracing of historical developments can help in meeting this challenge, as shown subsequently.

However, the relative simplicity of the 2x2-matrix based Intuitive Logics variant may have led to a neglect of history within scenario planning – or, at least, in scenario planning that uses this variant (Bradfield et al., 2016; MacKay & McKiernan, 2006; Schoemaker, 2020). While this variant, in the form described by Cairns & Wright (2018), does indeed consider ‘how history has brought the [scenario] group to where they now stand’ in stage 1 of its process, history is nevertheless considered somewhat superficially in terms of changes occurring in the five-year period prior to the scenario exercise (Cairns & Wright, 2018, p.35). The approach does *not* use history to understand how ‘micro-causes’ (Wilkinson et al., 2013) within the focal system of interest can combine to lead to emergence, and thus path-disruption and novelty. The 2x2-matrix based variant of Intuitive Logics therefore promotes a view of the future that, while not entirely untethered to the past from which it emerges, is nevertheless insufficiently influenced by it (Bradfield et al., 2016). While the causal analysis it facilitates has recently been usefully augmented (Derbyshire & Wright, 2017), it still does not use history to uncover causal mechanisms within a focal system. Later parts of this paper show how the process-tracing of historical developments can assist with this.

Other major lineages

The above ‘conventional’ history of scenario planning is notably Anglo-American in its focus. As MacKay & McKiernan (2018, p. 24) imply, few in the scenario-planning domain can escape its hegemony, and much attention is focused on this lineage, overlooking others of at least equal importance. Of these others, of particular interest to the present discussion on history and scenario planning is the ‘French school of thought’ (McKay & McKiernan, 2018, p.19). Despite often being overlooked in favour of the RAND/Shell lineage, it is reputed to predate that lineage (McKay & McKiernan, 2018, p.19); at the very least, its development ran parallel to it (Bradfield et al., 2005, p.801). At the time Kahn was developing scenarios for the military at RAND in the US in the 1950s, the French philosopher Gaston Berger developed the *La Prospective* scenario-planning approach (Bradfield et al., 2005, p.802). However, in distinction to the Intuitive Logics approach that its development ran parallel to, in which considered futures come in the form of shocks from an external environment unamenable to influence by the focal organisation (MacKay & McKiernan, 2018), Berger’s view was that the future was another country, and one amenable to influence. The future, from this perspective, is not part of a ‘predetermined temporal continuity’, but is open, and is waiting to be created (Bradfield et al., 2005, p.802). The focus of *La Prospective*, at least in its infancy, was therefore on shaping future outcomes, and actions designed to bring about preferred choices, as perhaps best exemplified by the Mont Fleur scenarios that shaped the future of South Africa following apartheid (Gordon, 2020a; 2020b).

However, in greater commonality with the Intuitive Logics approach originally used at Shell, *La Prospective* also emerged as a response to the perceived failures of forecasting (Bradfield et al., 2005, p.802). Standard forecasting methods have great difficulty in dealing with the innovation and novelty brought about by human reflexivity and creativity, as captured succinctly by Godet (1982), who, alongside de Jouvenel (1967), was among those to take up the baton of *La Prospective* following Berger’s death in 1960:

‘The inadequacy of ‘classical’ forecasting techniques can be explained by their downplaying, or outright ignoring, of the role played by creative human actions in determining the future. This creative attitude is recognized by the ‘prospective’ approach, which reflects awareness of a future that is both deterministic and free, both passively suffered and actively willed’ (Godet, 1982, p.295; McKay & McKiernan, 2018, p.19).

As succinctly captured here, the future is subject to both freewill, and constraint on that freewill by prevailing circumstances – leading to what Ramírez & Wilkinson (2014) refer to as novelty and historical determinism respectively. The future that emerges does so from this interplay between structure and agency, and the human reflexivity that results (Derbyshire, 2020a). While Berger’s emphasis was on creating desirable futures, as Godet (1982) implies above, the future is *not* merely an open canvass on which we can paint any desirable future we wish. People make history, but not in circumstances of their choosing. Neglecting prevailing circumstances and historical constraints in order to envisage ‘positive images of the future’ (Bradfield et al., 2005, p.802) – thus taking insufficient account of the ‘lock-in’ (Arthur, 1989; Masrani et al., 2020) and path-dependence brought about by historical events (Booth, 2003) – is a guarantee that those prevailing circumstances will remain, rather than be positively changed. This is, arguably, what happened with the Mont Fleur scenarios in South Africa, which overlooked historical constraints and relevant empirical comparisons in favour of the visioning of a utopian future that then failed to transpire, even within the ten-year time horizon considered by the scenario planning (Derbyshire, 2020b). Perhaps for this reason (i.e. insufficient acknowledgement of the constraint on novelty resulting from path-dependence), while under its subsequent development by Godet (1982) and others the *La Prospective* approach retained its ‘visioning’ aspect, from the mid-1970s onwards it then developed in a more mathematical, computer-based and probabilistic direction, thereby taking greater account of history in terms of the pre-determined elements of the future – notably, by employing Trend Impact Analysis and Cross-Impact Analysis (Bradfield et al., 2005). As such, *La Prospective* became a blend of Intuitive Logics and what is known as ‘Probabilistic Modified Trends’ (Bradfield et al., 2005).

Probabilistic Modified Trends uses the two approaches known as Trend Impact Analysis (TIA) and Cross-Impact Analysis (CIA) to identify how historical trends may be disrupted by novelty, probabilistically. Both were originated to compensate for the fact that standard approaches to forecasting simply extrapolate historical trends, thus assuming stationarity and ergodicity, and eschewing novelty (Gordon, 1994; Bradfield et al., 2005). In TIA, the analyst generates a ‘surprise-free’ future by extrapolating existing trends. Novel events that might disrupt this surprise-free future are then considered, and expert judgments are used to identify the probability of occurrence of these novel events, and the ‘surprise-free’ future trends adjusted accordingly. CIA is a little more involved, but the concept is essentially the same. The key difference is that, rather than simply accepting experts’ a priori probabilities of novel future events, it determines the conditional probabilities of pairs of future events, given that various other events have, or have not occurred, using ‘cross-impact calculations’ (Bradfield et al., 2005, p.801). The focus is therefore on the interdependency between events and the conditional probabilities thus implied. As noted subsequently, process-tracing historical developments can facilitate Bayesian updating, and can therefore aid consideration of the probability of novel future events and their conditional probabilities.

One other lineage is worth briefly highlighting in conclusion to this section because of its emphasis on describing the causal nature of an organisation’s external environment, which is the subject of the remainder of this paper following this section. Emery & Trist’s (1965; 1973) ‘Causal Texture Theory’ was set out by them while working at the Tavistock Institute, a British organisation with similar origins in military research to that of RAND Corporation (MacKay & McKiernan, 2018, p.27). The Tavistock Institute played an important role in establishing the Social Science Research Council in the UK in 1965, and in so doing, in establishing the ‘Committee on the Next Thirty Years’, led by the futurologist Michael Young (MacKay & McKiernan, 2018, p.27). This committee worked with RAND, and members of the ‘French School’ such as de Jouvenel (1967), on high-profile projects like the ‘Commission for the year 2000’, in which scenarios were deployed alongside other methods such as Delphi and time-series analysis. However, this early use of scenario planning has largely been overlooked in historical accounts (MacKay & McKiernan, 2018, p.27-29).

Emery & Trist (1965) set out Causal Texture Theory (CTT) to build on Bertalanffy's (1950a; 1950b) theory of open systems, in which organisms survive by importing material from their environment, transforming it, and then exporting material back to the environment – which, though not originally intended to, describes a business quite succinctly. Emery & Trist's (1965) key insight was that an important part of this exchange had been overlooked in the theory of open systems, which 'does not deal at all with those processes in the environment itself that are among the determining conditions of the exchanges. To analyse these requires an additional concept – *the causal texture of the environment*' (Emery & Trist, 1965, p.8; Tolman & Brunswik, 1935; Pepper, 1934). Emery & Trist (1965) identified four environmental 'causal textures': i) placid and randomised, in which the environment is stable and unchanging (i.e. stationary); ii) placid and clustered, in which the environment is stable, but with some connectedness between organizations and environmental variables; iii) disturbed and reactive, in which the environment is changing, and organizations engage in reflexive competition; and iv) turbulent, in which the environment is constantly changing and redefining the basis of organizational success (Burt et al., 2006). This is highly salient to scenario planning, which focuses on both perceived environmental uncertainty (Tapinos, 2012), and on identifying the 'driving forces of change' in the external environment (Cairns & Wright, 2018, p.36-40). Indeed, Emery & Trist's (1965) theorising is incorporated in the Oxford Scenario Planning Approach (OSPA), which 'reflects Causal Textures Theory in practice' (Ramírez & Wilkinson, 2016, p.29). A premise of CTT is that individual and collective perceptions are crucial in assessing the nature of the environment (Ramírez & Wilkinson, 2016, p.29). Scenario planning can help in this regard by facilitating comparison between individual perceptions (and their respective framings). Assessing the causal texture of the environment can also be assisted by process-tracing historical developments in scenario planning, which we turn to now.

Enhancing causal analysis in scenario planning by process-tracing historical developments

Saliently for scenario planning, process-tracing was originally designed for psychological studies of decision-making (Bennett & Checkel, 2015, p.7). It is 'the historian's methodology for explanation' (George, 1979, p.46). There are now at least eighteen approaches to process-tracing (Trampusch & Palier, 2016, p.438), including that designed to enrich causal analysis and uncover logical causal sequences, which is focal to this section of the paper. However, Trampusch & Palier (2016, p.439) highlight two ontologies in relation to process-tracing, which are in turn related to two alternative conceptions of cause within it: a deterministic one, and a probabilistic one. This highlights process-tracing's ability to augment a number of alternative scenario-planning lineages and variants. Today's 2x2-matrix based Intuitive Logics approach, for example, has a deterministic conception of cause (Derbyshire & Wright, 2014), whereas other scenario approaches have a probabilistic conception (e.g. see Schoemaker, 1993). Process-tracing can be used to update Bayesian subjective probabilities (Beach & Pedersen, 2013), or simply to uncover causes, and so can aid both. This section focuses mainly on process-tracing's usefulness in relation to plausibility-based, deterministic scenario planning – and, in particular, to the enriching of causal analysis within it.

While there are numerous approaches to process-tracing, what is common to most is their focus on unpacking cause. Process-tracing unpacks what happens between X and Y by uncovering causal *mechanisms*, rather than the mere correlations uncovered by statistical analyses (Trampusch & Palier, 2016, p.438). As such, process-tracers study 'causal chains, causal mechanisms, and the causes of effects' (Trampusch & Palier, 2016, p.439). What process-tracing amounts to, essentially, is a form of 'contrast explanation' (Lawson, 2009) or 'abductive reasoning' (Peirce, 1955) about causes. It assists in uncovering the nature of cause within a focal system – its 'causal texture' (Emery & Trist, 1965) – and the drivers of change that have led to novel outcomes within it in the past. In other words, process-tracing can assist in uncovering how, historically, causes have combined to bring about emergent outcomes, which disrupt macro-level trends within a focal system; and, therefore, how such causes *may* combine in novel ways again, thus taking the system in another new direction (Byrne & Callaghan, 2014). Process-tracing may be conducted retrospectively, or prospectively, as a system develops and

changes (Byrne & Callaghan, 2014, p.199), and it can thus contribute to forwards-and-backwards sensemaking (Ramírez & Selin, 2014; Selin, 2006). While identifying causal structures and mechanisms is central to scenario planning of all types, to focus on just one of the previously-highlighted lineages, causal analysis is quite rudimentary within the 2x2-matrix based variant of Intuitive Logics. In its standard form, this approach overly focuses on ‘efficient’ causes, and neglects causal mechanisms in favour of simple conjunctions (Derbyshire & Wright, 2017). Process-tracing can assist in overcoming this deficiency by enriching causal analysis in scenario planning – both in this variant, and in others. How, specifically, can it do this?

Trampusch & Palier (2016, p.439) describe three main approaches for implementing process-tracing. The first focuses on causal sequences, and elevates time in importance, rendering it a central part of the causal explanation., thus allowing for the uncovering of complex causal pathways and feedback processes. The second focuses on identifying and testing hypotheses related to causal mechanisms, in order to drill down into alternative causal explanations, and understand the relative importance of alternative causes. The third focuses on identifying omitted variables, endogeneity, and scope conditions. In this paper, we consider the first two approaches to be particularly useful to scenario planning. They are the focus in the remainder of this section.

The first of these broad approaches – that focused on uncovering causal sequences – has its origins in the use of historical narratives by sociologists and historians in the 1970s and 1980s, in combination with social-science theorising, to explain social and political outcomes better by uncovering causal mechanisms (Falleti, 2016). Falleti (2016, p.458) distinguishes between two types of causal and temporal process: extensive and intensive. Extensive causal processes include the cause and outcome of interest, and mediating variables between the two. Intensive processes mediate between a putative cause and an outcome of interest, but do not include the triggering cause or the outcome. These extensive and intensive approaches to process-tracing are analogous to the alternative approaches for creating influence/cluster diagrams in the modern, 2x2-matrix based variant of Intuitive Logics. In the simple form of this 2x2-matrix based approach, as previously outlined in Table 1, these diagrams comprise the equivalent of ‘intensive processes’; they focus on intermediate causes, but with neither the initial cause, nor the ultimate effect necessarily made explicit (see Cairns & Wright, 2018, p.38-39).

However, more recently, an augmentation to the standard 2x2-matrix based Intuitive Logics scenario approach has been created, in which the causal analysis is much more explicitly transformational and temporal in nature, as it includes a description of initial conditions and early triggers, as-well-as a description of the ultimate effect, thus facilitating an enriched causal analysis (see Cairns & Wright, 2018, p.141-145). The distinction between the simpler and more-detailed causal analysis thus facilitated hinges on the nature of the causation uncovered, just as it does in the distinction between extensive and intensive process-tracing approaches. In extensive processes, the intervening causes are more akin to variables, as representative of the ‘efficient’ causes that are the focus of the basic 2x2-matrix based Intuitive Logics scenario approach (Derbyshire & Wright, 2017). Whereas, in intensive processes the intervening causes are causal *mechanisms*, which explain the ‘how’ of causation by focusing on sequences and transformation over time – as in the enriched, Aristotelian analysis of cause in the augmented 2x2-matrix based scenario approach described in Cairns & Wright (2018, p.141-145).

In both cases – extensive and intensive process-tracing – the uncovering of cause may be theory informed, or based on logical cause-and-effect relationships. This first form of process-tracing then, based on uncovering causal processes, provides a rationale and justification for the creation of causal sequences, as in the influence/cluster diagrams created in scenario planning, and provides a framework for understanding different approaches for doing so. Process-tracing of the intensive type emphasises the unpacking of causal *mechanisms*, in order to understand their transformational effects over time, and in order to identify key intervening causes. This, in turn, allows for the swapping out-and-in of alternative causes that is central to counterfactual reasoning – which, in turn, facilitates understanding

of contingent causation, as discussed later in this paper. Such counterfactual reasoning is key to dealing with circumstances of rapid, discontinuous and unpredictable change (Feduzi et al., 2016) – dealing with which, it may be recalled, was the motivation for Shell’s original form of Intuitive Logics (Wilkinson et al., 2013). In the modern, 2x2-matrix based Intuitive Logics scenario approach (Cairns & Wright, 2018), this form of process-tracing can assist in identifying the ‘higher-level factors’ that frame the writing of scenarios. Still more saliently for this scenario-planning approach, this causal-sequence form of process-tracing can include creation of ‘directed acyclic graphs’ (Trampusch & Palier, 2016, p.438). These can be fed directly into scenario planning of this type, aiding the understanding of the causal structure and texture of the focal system of interest, since directed acyclic graphs are essentially influence/cluster diagrams.

In the second of the broad approaches to process-tracing highlighted by Trampusch & Palier (2016), causes are uncovered by applying diagnostic tests to causal hypotheses. Just like most variants of scenario planning seek to combine pre-determined and novel elements of the future, this form of process-tracing uses causal tests in which pre-existing generalisations are combined with specific observations about a focal system of interest – or a particular case within it – in order that causal inferences can be made (Mahoney, 2012). Tests are applied to establish that an initial event or process occurred, that a subsequent outcome also occurred, and that the former was the cause of the latter (Mahoney, 2012). Four tests can be used: ‘straw-in-the-wind’, ‘hoop’, ‘smoking gun’, and ‘doubly decisive’ (Collier, 2011). A straw-in-the-wind test is particularly salient to plausibility-based scenario planning because it can increase the plausibility of a causal hypothesis, or raise doubts about it. However, it is not decisive in determining critical causes (Collier, 2011, p.826). Hoop tests similarly cannot confirm hypotheses, but they can eliminate them. If a causal hypothesis passes a hoop test, this has implications for alternative hypotheses, weakening their plausibility, if not eliminating their possibility altogether (Collier, 2011, p.826). A smoking-gun test is a necessary, but not sufficient criterion for acceptance of a causal inference. It can lead to strong support for a causal hypothesis, but failure to pass this test does not automatically lead to rejection of it (Collier, 2011, p.827). However, if a causal hypothesis passes such a test, by doing so it substantially weakens rival hypotheses (Collier, 2011, p.827). Finally, doubly-decisive tests confirm one causal hypothesis and eliminate all others. They meet both the necessary and sufficient evidential standard for decisively establishing causation (Collier, 2011, p.827).

While single pieces of evidence meeting this doubly-decisive standard are quite rare², in their absence the same standard can be achieved by combining tests of different types. By combining tests an investigatory team engages in a process of variation (of considered causal hypotheses), followed by elimination, in terms of alternative causal explanations for particular events. Collier (2011, p.827) describes the process in terms very salient to scenario planning: ‘when the investigator has eliminated all plausible alternatives, the remaining scenario must be the correct one’. As might be immediately recognised by some readers, this is the mantra of Sherlock Holmes. Indeed, Collier (2011) draws on the Sherlock Holmes case ‘Silver Blaze’ to illustrate the four tests, as do Beach & Pedersen (2013). The latter highlight how the crucial piece of evidence in that case – the dog that did *not* bark in the night – modifies the probability that the theft of the horse was an inside job, thus helping to establish cause.

Again, saliently for scenario planning, some variants of which have been shown herein to be probabilistic, Beach & Pedersen (2013) therefore show that process-tracing is essentially a form of Bayesian updating. It can be used to make ‘within-case’ subjective-probability inferences, leading to an estimate of confidence in the validity of a particular causal assumption, albeit not one that is necessarily explicitly quantified (Beach & Pedersen, 2013). The first type of process-tracing described above, which emphasises causal *sequences*, was previously described as highly relevant to the 2x2-

² MacKay (2007, p.302) references the rarity of ‘smoking guns’, but is actually referring to tests of a doubly-decisive nature.

matrix based variant of Intuitive Logics scenario planning. This second form of process-tracing is both highly relevant to that form of scenario planning, but is perhaps still more relevant to other forms, such as Probabilistic Modified Trends, which are more explicitly based on trend analysis, and are probabilistic. Such forms of scenario planning place emphasis on using causal analysis to consider how pre-existing trends may be disrupted or discontinued by combinations of novel causes. A process-tracing that considers past such disruptions and discontinuities within the focal system of interest, and applies the aforementioned four tests to the perceived causes of them through historical analysis, can furnish detailed consideration of how such causes – in combination with new ones – may combine once more in the future, leading the system of interest onto a new trajectory in its development.

The specific implications for the practical implementation of scenario planning depend on the variant, and, as this paper has highlighted, there are many such variants. Nevertheless, it is worth noting a few general and more specific implications, beyond those already mentioned above. In any process-tracing applied to scenario planning, the extent of the retrospective examination of focal systems of interest, in terms of how far back in history one goes, is *not* necessarily what is important. Process-tracing is for tracing causal processes, and understanding how they bring about transformation within a focal system; it is not a method for projecting forward trends. What *is* important is that major – and perhaps rare (Bennett & Elman, 2006) – events within this historical development are process-traced, and their underlying causal mechanisms considered in detail. These are most likely events that have led to previous disruptions and discontinuities within the system. This allows for consideration of how these causal mechanisms may again combine in the same way – or in new ways, in combination with new causes – leading to novel outcomes in the future. This process-tracing of causes can focus either on recurring events, or single cases (Collier, 2011, p.825). If the focus is on process-tracing specific past events of import, rather than on tracing through large swathes of company or sector history, or on creating detailed and longitudinal case studies, then the additional time-and-cost requirements to scenario planning are minimal. The focus of process-tracing as incorporated into scenario planning would, then, be on major disruptions to what was business-as-usual in the past in the system under consideration. The purpose would be to aid consideration of the potential causes of future disruptions and discontinuities within the same system.

Let us consider a brief illustration of the role the first approach to process-tracing outlined above, related to causal sequences, might play in scenario planning. Take, for example, a scenario exercise conducted by a government, or a central bank, and designed to consider the future of the financial system, perhaps motivated by the prior crises that have occurred regularly throughout history – not least, that of 2008 – and a desire to consider the potential causes of future crises of the same type. Financial crises are obviously also of concern to business enterprises, and clearly, to corporate banks too; such businesses might therefore also conduct a scenario-planning exercise on this theme. Financial crises are new on each occasion of their occurrence, despite having occurred previously, inasmuch as they are brought about by novel combinations of causes each time; nevertheless, these novel combinations of causes have similarities to those that brought about prior crises (Bradfield et al., 2016). As Mayntz (2016, p.486) notes by reference to Reinhart & Rogoff (2009), there are common themes to financial crises, but to focus on these alone would be to ignore many important factors relevant to specific instances, such as that of 2008. To understand such crises, it is therefore necessary to take account of both their common themes and causes, and those novel in a particular instance. Herein, we see how history can be a useful guide even if the causes of future events of a similar type are novel, as *some* causes still remain the same over time, but are combined with those novel and individual in a specific instance. And herein we also see the usefulness of scenario planning, which seeks to take account of both causes that are more general and historically determined, and those more novel and contextually specific to a specific instance.

Briefly, according to Mayntz (2016): the process leading to the financial crisis of 2008 started with a bubble in the US housing market, resulting from a specific (to this crisis) confluence of political and

socio-economic developments – including, a sustained period of low interest rates, and competition between banks based on technology-driven business models. The process of inflating the bubble spread internationally as banks in other countries invested in US subprime mortgages, which had been highly rated by dominant rating agencies, in order that they be sold more easily. Moreover, banks had cut their capital ratios to the lowest permissible levels in order to maximise profits. The drop in the value of their securitized assets thus brought several quickly to the brink of bankruptcy, and led to the drying up of interbank lending; the result was the ‘credit crunch’. A further cause to be traced and considered as part of the explanation is more sociological and related to central banks’ and governments’ unwarranted belief in the self-regulating nature of financial markets, as captured in Alan Greenspan’s now famous statement that ‘Those of us who have looked to the self-interest of lending institutions to protect shareholder’s equity – myself especially – are in a state of shocked disbelief’ (Wolf, 2009).

Rather than the adequacy, or otherwise, of this particular causal explanation, the point is that a scenario-planning exercise designed to consider the potential causes of a new financial crisis – and which considers the causes of prior crises while recognizing that the exact combination of historical and novel causes is different on each occasion³ – would devote attention to considering this causal process from 2008, perhaps alongside others from similar crises, such as the 1929 financial crash. In the 2x2-matrix based Intuitive Logics scenario approach previously set out in Table 1, this historical consideration might occur in stages 2 and 3, in which the ‘driving forces of change’ are identified, clustered, and made into influence/cluster diagrams. In this way, this form of process-tracing, based on causal sequences, can augment causal analysis within scenario planning, counteracting its tendency towards a-historicism (Bradfield et al., 2016, p.62-64). It would enrich the causal analysis by identifying historically-relevant causes that may have influence again in the future (i.e. which have not been disrupted or negated over time), in combination with novel causes.

Let us now briefly illustrate use of the second type of process-tracing outlined above, based on diagnostic tests, by reference to the same example (a scenario-planning exercise focused on future financial crises and how they might occur). In Stiglitz’s (2010) analysis of the causes of the 2008 financial crisis, which is based on the official US government report on the causes of the crisis (Financial Crisis Inquiry Commission, 2011; Stiglitz, 2018), we see the importance of counterfactual reasoning (Feduzi et al., 2016), and how it occurs in process-tracing, as further discussed in the next section.

Saliently for this discussion on use of history in scenario planning, Stiglitz (2010, p.2) firstly states that the 2008 financial crisis – while featuring novel factors such as ‘sub-prime mortgages’ and ‘collateralized debt obligations’ – was in essence a run-of-the-mill credit crisis, precipitated by a real-estate bubble. Such bubbles are ‘a dime a dozen’ in history (Stiglitz, 2010, p.2). Stiglitz (2010, p.3) notes that, in the lead-up to the 2008 crisis, policy-makers failed to take account of *uncertainty* by simply assuming that there wasn’t a bubble. Yet, Stiglitz (2010, p.3) notes, there were a host of tell-tale signs of one: a rapid expansion of credit, and the rising median price to median income ratios for property, among them. In terms of the diagnostic tests that are central to the second form of process-tracing herein outlined, these factors can be considered ‘straw-in-the-wind’ causes of the credit crunch. They were plausible indicators that one was brewing, but are not critical, determining causes. Their presence should have raised doubts among policy-makers about the plausibility of their hypothesis that there was *not* a real-estate bubble, but did not.

Furthermore, Stiglitz’s (2010) explanation contains something akin to a hoop test: the mishandling of the collapse of Lehman brothers, which some have attributed a decisive role in the credit crunch. In relation to that causal hypothesis, Stiglitz (2010) states that the crisis would have occurred anyway, even without this cause, thus employing counterfactual reasoning. It is a hoop test, and so the failure of

³ Schoemaker (2020) quotes Mark Twain as stating that ‘History never repeats itself, but it does rhyme’.

this causal hypothesis, related to the collapse of Lehman brothers, strengthens alternative hypotheses. If there is a ‘smoking-gun’ in Stiglitz’s (2010) explanation, it relates to the warped incentives that ‘too-big-to-fail’ financial institutions were operating under, leading to their aberrant behavior (Stiglitz, 2010, p.17). However, perhaps the doubly-decisive, ultimate and final cause of the 2008 financial crisis is described by Stiglitz (2010, p.17) thus: ‘The real source of the problem was that banks didn’t know their own balance sheets and so knew that they couldn’t know the balance sheets of other banks to whom they might lend’. Herein, we have a doubly-decisive causal hypothesis that eliminates all others as the ultimate cause of the 2008 financial crisis.

Of course, the causes of the 2008 financial crisis may be attributed a different relative importance by someone other than Stiglitz (2010), or by a different reader of Stiglitz (2010). However, that is exactly why process-tracing important historical developments in scenario planning is useful, and why the discussion about the relative importance of alternative causes thus precipitated would be a rich one of use in understanding the causal texture of the environment under consideration. The four diagnostic tests – straw-in-the-wind, hoop test, smoking gun and doubly-decisive – provide a causal framework around which to debate and discuss the relative importance of alternative causes in past extreme events of a similar type in scenario planning.

Simultaneously enriching business history and scenario planning

The discussion above focuses on the contribution history can make to scenario planning by incorporating the historian’s method of process-tracing into the latter. However, this paper began by proffering a *mutually-beneficial* collaboration, which implies a degree of reciprocity, and of simultaneous enrichment. What, then, does scenario planning offer history in the other direction? Scenario planning can contribute much to business history by assisting in identifying plausible counterfactuals, and in the ranking in importance of alternative causes, by informing historical studies with data-and-trend analysis and uncovering the relationship between a business and its external environment, and by enabling research on business decision-making. Scenario planning can also contribute to history by uncovering the full extent of its contingency, and the ever-present interplay between structure and agency – or, determinism and trend-disrupting novelty – to which it is subject. We discuss these benefits in this final section.

Booth et al. (2009) document the vehemence of some historians in response to increasing interest in counterfactual history. MacKay (2007) similarly references the hostility with which counterfactual history was met, including that shown by some of the discipline’s heavy-weights, who variously labelled it ‘unhistorical’ (Thompson, 1978), a ‘red herring’ (Carr, 1990), and a ‘methodological rathole’ (Fisher, 1970). Saliently for scenario planning, MacKay (2007) links this vehemence to Popper’s (1957) now famous criticism of ‘historical determinism’, as manifest in historians’ grand universal narratives, and through which history’s status is boosted by claims to uncover overarching laws, patterns, trends and rhythms – or the ‘dogma of universality’, as Kieser (1994, p.618) calls it. The vehemence with which the counterfactual approach was met may be explained by it undermining any such status-enhancing claims to law-based predictive ability. However, more recent decades have seen greater acceptance of counterfactual history among historians (Booth et al., 2009). To be clear, it can hardly be claimed that the counterfactual approach is something new to historians, many of whom have used it for decades. Nevertheless, the counterfactual approach to history might be aided by involvement in scenario planning.

Central to the counterfactual approach is analysis of causal sequences, and the consideration of what may have happened if this or that intermediate cause were swapped out for another (Giddens, 1984, p.13; MacKay, 2007, p.299). Given the initial occurrence of A and B, what would have happened to D and E, if C had *not* happened, and X had happened instead (Giddens, 1984, p.13; MacKay, 2007, p.299)? Such analysis, but with a future direction of focus, is central to scenario planning, and is made explicit in some modern variants of Intuitive Logics, which specifically require the consideration and creation

of causal chains in the form of influence/cluster diagrams (see Cairns & Wright, 2018, p.38-39). It would be made still more explicit in a scenario planning that incorporates the process-tracing of analogous past events, for the reasons previously outlined. The process of considering the future in scenario planning, based in part on the past in the way described previously, can therefore aid consideration of how past historical developments might have been different.

Under such a counterfactual approach, the focus is very much on how the ‘path-dependent logic of events could have been redirected through the alteration of conceivable causes’ (MacKay, 2007, p.300; Tetlock & Belkin, 1996). This not only provides clues as to alternative actions that might be taken in the future under similar circumstances; it brings ‘foundational issues’ into focus, and aids the identification of causes in historical explanation (Fearon, 1996, p.67; MacKay, 2007, p.303). This can act as a ‘learning device’ that points simultaneously forwards and backwards, changing mind-sets in the present about the future (MacKay, 2007, p.305), and simultaneously leading to a changed perspective on the past. This holds out the possibility for a retrospective and prospective ‘sensemaking’ (Ramírez & Wilkinson, 2014, p.56; Selin, 2006, p.196), in which sense is simultaneously made both of future possibilities, and those of the past foregone and now closed off, as-well-as those that may be opened up or closed down for the future through decisions made today.

Moreover, uncovering how the ‘path-dependent logic of events could have been redirected through the alteration of conceivable causes’ (MacKay, 2007, p.300) also assists in ranking identified causes in importance, further aiding historical explanation. The counterfactual approach to history is essentially an experimental one designed for use in circumstances unamenable to actual experimentation (i.e. studying the past). At the same time, it is more than just that; standard experimental approaches for isolating causes and evaluating effect sizes have received considerable criticism for their inability – perhaps exactly because of the emphasis they place on the isolation of *individual* causes – to take account of complexity, in terms of the messy confluence of multiple events and their causes, and the interactions between them (Morgan, 2019). This messy confluence is fundamental to history, in which events may appear determined in hindsight, but when lived through appear highly contingent and confusing (Taleb, 2008; Derbyshire & Wright, 2014).

As historians know perhaps better than any other group of scholars, a counterfactual approach allows for experimental ‘what if’ thinking, but without the economic experimentalist’s unfounded belief in creating laboratory conditions in social contexts. The counterfactual approach to history, which can be enriched by including the process-tracing of major historical developments in scenario planning, is a more realistic experimentalism (Woods, 1993). Rather than being confounded by the inability to hold individual causes in isolation, the explanation facilitated emphasises the inability to control such individual aspects of reality in actuality (i.e. during the unfolding of the events considered) as integral to the outcomes considered, and in so doing emphasises the confluence of causes as the focus of the explanation. The interaction between complex and contingent causes then becomes the fulcrum of understanding. Yet, this does not disallow the pin-pointing and highlighting of causes deemed most important, and does not, therefore, condemn the explanation to a soggy eclecticism or causal relativism in which everything is simply deemed equally important as everything else.

Masrani et al. (2020) carry out what is, essentially, a process-tracing of the origins, development, and eventual decline of the jute industry in Dundee, and identify and consider the multiple causes of technological ‘lock-in’ and path-dependence that led to that decline. Yet, they nevertheless still highlight the nature and construct of jute fibre, and the inability to substitute this fibre for another, despite much investment in research, as the ultimate cause of this decline. The counterfactual here is that, if jute had been successfully substituted, decline may not have been so swift, or may not have happened at all. Similarly, in the previous example illustrating use of the diagnostic tests emphasised by one form of process-tracing, Stiglitz (2010) traced the causes of the 2008 financial crisis, suggesting some to be merely ancillary, yet others, such as the disappearance of trust between banks, as more

important. Furthermore, in assessing the importance of the mishandling of the collapse of Lehman brothers, which some have attributed a central role in causing the crisis, Stiglitz (2010) uses counterfactual reasoning to show why it would have happened anyway, even had this allegedly pivotal cause not been present. Herein, we see the usefulness of counterfactual reasoning in identifying and ranking causes. As Feduzi et al. (2016) show, it can be a very powerful tool for de-biasing causal judgements. Granted, to state it as such to historians may be to preach to the already converted, since they have perhaps done more to prove its usefulness than any other group of scholars. Nevertheless, scenario planning can be a vehicle by which to further enhance and broaden use of the counterfactual approach in history, and can provide a means by which historians' counterfactual-reasoning skill can impact real-world decision-making.

Scenario planning can assist history, furthermore, in better understanding the prevailing trends present at the time of a historical development, such as a financial crisis. Identifying and considering the 'pre-determined elements' of the future – which are stable trends, the influence of which are assumed to continue unchanged over time – is central to scenario planning of many types. Pre-determined trends form the backbone of 'first-generation' exploratory scenarios within the Intuitive Logics approach originally conducted at Shell – which, indeed, included a benchmark 'business-as-usual' scenario entirely based on the continuation of such trends. Schoemaker (2020) makes reference to what cliometric history can contribute to scenario planning; yet, scenario planning, because of its emphasis on uncovering pre-determined trends, and separating these out from more contingent causes, can contribute in the other direction too, by informing historical studies with data-and-trend analysis.

Scenario planning also provides historians with a means to study business decision-making, and the relationship between businesses and their external environments. Kobrak & Schneider (2011, p.403) make reference to business historians losing interest in (or being unable due to lack of access) doing research on the decision-making processes of firms, and on how businesses interact with, and respond to changes to, their external environments. Scenario planning is a vehicle by which to study decision-making, leading to an understanding of the relationship between businesses at a micro-level and the external-contextual environment in which they operate at a macro-level. By participating in scenario planning, business historians would not only gain access to material with which to write their histories. They will also gain insight into how varying viewpoints about the past map onto varying perceptions about the present and future in a business context, leading to an understanding of how managers make decisions in reality, in contrast to how extant theorising assumes they do.

Staley (2002) speculates about the potential response from within the discipline to historians' entering the domain of the future. As with historians' initial response to counterfactual history, many would consider it impractical, quixotic, hubristic, and dangerous. The history of prediction by historians – be it Hegel, Marx or Spengler – is not a happy one. Failed prognostications based on grand universal narratives have discredited historians' ability when it comes to considering the future (Staley, 2002). Yet, from another viewpoint, history is inevitably about the new – i.e. events that had not happened before – and about what was once the future, from the perspective of the past (Staley, 2002). Perhaps exactly because of the failure of grand universal narratives, today's historians are highly aware that contingency, surprises, and deviations from the trend are the rule, not the exception (Staley, 2002). Furthermore, scenarios explore plausible alternative futures, and are not predictions about *the* future. Historians' involvement in scenario planning does not mean a requirement to predict, with its inevitable opportunity for discredit. Scenario planning does not require grand universal narratives; it is highly context specific.

Scenario planning provides an outlet for skills that historians possess perhaps more than any other group of scholars – counterfactual reasoning being a case in point. They are the group most qualified to write what Staley (2002) calls 'history of the future', and Shackle (1984) 'history to come'. These 'histories of the future' represent historically-informed alternative possibilities. The failure of any one to transpire

can teach us just as much as the actualisation of any that does. The similarities between ‘historical thinking’ (Staley, 2002) and ‘scenario thinking’ (Cairns & Wright, 2018) are so many. Their focuses are essentially mirror images, but pointing in opposing temporal directions. Each can contribute useful insights in its reverse direction of focus, leading to a broadened perspective on both the future *and* the past, and one *not* dependent on mere projection, whether forwards or backwards. A closer collaboration between scenario planning and history enriches both simultaneously.

Conclusion

The writing of this paper was begun in the months following the initial outbreak of the coronavirus pandemic. Upon its revision six months later, as a second wave of infection takes hold, it seems increasingly likely this will represent a disjuncture point – or path-disruption – separating society as it was from what it then becomes. In one respect, if it should transpire to be such, the cause of this particular path-disruption is obvious – a highly-infectious virus. Yet, to focus on this cause alone is to leave absent from the explanation the reasons for many countries’ seeming lack of preparedness for a pandemic, even though pandemics are hardly unknown to history. It seems we had, yet again, forgotten the lessons of the past. History is littered with such examples. Studying history in order to avoid repeating the mistakes of the past is a glib platitude. Yet, its glibness does not reflect any inaccuracy, but rather the repeated failure to achieve this central aim. The aim is laudable, it is the failure to realise it that makes it an empty platitude.

Preparing better for the future by learning lessons from the past is no less than what is at stake when seeking to combine scenario planning and history. While this paper was conceived prior to the present crisis, that crisis has made its writing all the more necessary. There were many lessons that could have been learned from similar pandemic events in the past, but were not. Like financial crises, pandemics are inevitable in the long run, but that inevitability seems rarely to motivate preparedness. The coinciding of the writing of this paper with the coronavirus pandemic has rendered stark the need for the mutual call-to-arms set out herein. Neither scenario planning nor business history is deficient in isolation, having both contributed much to understanding in their respective fields, and well beyond. However, by joining forces, the light shone by each is magnified by the other. If we may assume the reader is now convinced of the need for the outlined cross-fertilisation between the two, what is the immediate way forward?

Firstly, and most obviously, there is a need to demonstrate further the process-tracing of historical developments within scenario planning, thus evidencing its efficacy, and warranting its incorporation. This can be done through detailed case studies of the use of process-tracing within scenario planning, with a specific focus on identifying how it augments causal analysis, and thus how it aids the identification of important causes and the consideration of major uncertainties.

Secondly, and relatedly, in recent years some common approaches to scenario planning have become somewhat truncated by comparison to their original incarnations, such as the Intuitive Logics approach originally used by Shell in the 1970s and 1980s. Laudable as it is to simplify the process in order to render the tool accessible to today’s more limited budgets and timeframes, if this dilutes scenario planning’s ability to aid anticipation of major path-disruptions, then scenario planning’s very *raison d’être* has been sacrificed at the altar of cost and speed. Yet, if these are indeed now the dominant considerations in these more straitened times, the methods for augmenting scenario planning with historical analysis outlined herein need not, necessarily, greatly increase the time and cost needed to carry it out. If the emphasis is on uncovering the major causes of analogous past events through, for example, use of the outlined process-tracing diagnostic tests, then this does not necessarily greatly increase the cost and time requirements of scenario planning. It *does* require, however, a shift in the focus of scenario exercises, such that there is more emphasis on understanding the intertwining of past and future, in terms of the tension between path-dependence and path-disruption. Uncovering this tension – which was very much the focus of scenario planning as originally conceived at Shell – may

have got somewhat lost in some modern-day scenario approaches, and needs to be returned to the crux of the exercise. How best to achieve this within individual variants is a subject for research, and historians no doubt have much to contribute in that regard.

Thirdly, research is needed to establish how lessons can be learned from past analogous events without bringing into being the dangerous assumption that the past somehow bounds the possibilities of the future, and their potential extremity, or that it somehow provides an accurate guide to be transposed directly onto the future. In other words, how can learning from the past be applied in scenario planning without exacerbating any natural tendency towards availability bias, as a result of which considering analogous historical events might restrict or anchor consideration of the future by reinforcing its assumed similarity to the past. This would increase susceptibility to surprises, rather than decreasing it. There may therefore be a need for further cross-fertilisation with still other disciplines, such as psychology.

Fourthly, research is needed to understand how the platform scenario planning may provide historians, in terms of influencing business strategy and government policy-making, can be maximised. How can historical research best be combined with that from other disciplines, including scenario planning, to provide strategy- and decision-makers with a broader, and more robust framing of future possibilities than provided by, for example, standard forecasting approaches, or by standard decision-making aids based on optimisation. Unlike these standard tools, which require that we close the future in order to consider it, history emphasises the future's inherent openness, which remains despite the past's heavy weight on it. Openness remains an overriding feature of the future, despite the weight of precedence bearing on it, for one simple reason: human creativity and inventiveness. Herein, history provides its most important lesson: the future is not something passively done to us. We must take action to create the future we want in the hope that what emerges from the attempt is closer to the future we desire than is the present.

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Table 1: The basic 2x2-matrix based Intuitive Logics approach to scenario planning*

| Stage | Description |
|----------------------------------|---|
| 1 Setting the scenario agenda | Defining the issue of concern and process, and setting the scenario timescale. |
| 2 Determining the driving forces | Eliciting a multiplicity of wide-ranging forces. |
| 3 Clustering the driving forces | Clustering causally-related driving forces, testing and naming the clusters. |
| 4 Defining the cluster outcomes | Defining two extreme, but plausible and hence possible, outcomes for each of the clusters over the scenario timescale. |
| 5 Impact/uncertainty matrix | Ranking each of the clusters to determine the critical uncertainties; i.e., the clusters that have both the most impact on the issue of concern and the highest degree of uncertainty as to their resolution as outcomes. |
| 6 Framing the scenarios | Selecting two initial critical uncertainties to create a scenario matrix, framing the scenarios by defining the extreme outcomes of the uncertainties. |
| 7 Scoping the scenarios | Building a broad set of descriptors for each of the four scenarios. |
| 8 Developing the scenarios | Developing scenario storylines, including key events, their chronological structures, and the 'who and why' of what happens. |

*adapted from Derbyshire (2020a, p.717).