



How historical analysis can enrich scenario planning

Paul J. H. Schoemaker 

The Wharton School, University of Pennsylvania, Philadelphia, PA, USA

Correspondence

Paul J. H. Schoemaker, The Wharton School, University of Pennsylvania, Philadelphia, PA, USA.
Email: schoemak@wharton.upenn.edu; paul@paulschoemaker.com

Abstract

Historians and scenario planners both examine societal developments over time, but from opposite vantage points. One group looks backward, the other forward. This paper argues that a deeper understanding of the methods and approaches of historical analysis can help scenario planners to develop better insights into the world ahead. The study of history stretches back millennia, while disciplined scenario planning has been around for half a century. By comparing historical analysis with scenario planning, the paper extracts lessons to improve narratives about possible futures, with linkages to the emerging field of counterfactual history. The practical challenges are examined using a 1992 scenario project about South Africa's future post-apartheid. Reviewing the four scenarios developed then, with the benefit of hindsight now, shows how and why historical thinking can sharpen scenario-oriented studies of the future.

KEYWORDS

complexity theory, counterfactual analysis, forecasting, futurism, historical analysis, historiography, Mont Fleur scenarios, scenario planning, uncertainty

Historia est Magistra Vitae (History is Life's Teacher),
Cicero

Most would agree with Santayana (1906) that “those who cannot remember the past are condemned to repeat it.” But for many, it is unclear how to leverage the lessons of history to enrich and sharpen their views about things to come. This paper examines how historical thinking can help scenario planners explore the future more successfully. History's relevance rests on several broad arguments. First, scenario planners try in essence to write history before it has happened. They hope that at least one of their scenarios is close to the truth and those that miss the boat might be considered plausible counterfactual histories when historians look back later. Second, the methods of weaving explanatory accounts of the past, in terms of causal connections and broader contexts with an eye for key facts, nuances and surprises, can make both past and future narratives more compelling. Third, any recent history relevant to the issues of interest to scenario planners today sets the stage for its continued momentum into the future, thus providing a temporal bridge.

Even though the past can often offer insights into the future, history can also mislead planners since past trends and dynamics wane. As David Staley (2002) wrote “historians have avoided writing serious inquiries about the future because we have generally been sceptical about our ability to make predictions.” This view aligns with von Ranke's view that history should be about documenting and explaining what happened in the past, and nothing more.¹ The skills needed for historical analysis include the ability to pose good questions, explore evidence, connect events, discern patterns, appreciate broader contexts and respect complex causations. These skills also include critical awareness about underlying methodologies, known as historiography (Iggers, 2005), which can also benefit scenario planners.

Even though historians look backward in time, after events have mostly played themselves out, they nonetheless face uncertainty since historical records are often incomplete. But scenario planners usually confront an even more incomplete picture in general, due to their wider projective aperture depending on the scope and time frame of what is being examined. The next section examines why history may be quite predictive in some cases but not in others. This is followed by a deeper analysis of what historical thinking is

about in terms of analysis and methodology. A similar brief analysis is then offered for scenario planning. Thereafter, the paper examines an actual scenario planning exercise conducted circa 1992 in South Africa to envision the political scene period post-apartheid. This retrospective analysis raises deeper questions about the purposes of scenario planning and how insights from history might have helped these scenario planners. The paper closes with broader lessons from history plus a coda noting that fertilizing insights across disciplines will remain challenging.

1 | HOW PREDICTIVE CAN HISTORY BE?

Table 1 highlights 18 differences in perspective between historical thinking and scenario planning. Each item is noted with a bracketed letter for later reference, such as [b] referring to the thinking process used. This process tends to be diagnostic for historians when explaining past events (by reasoning from outcomes into causes) compared to prospective for scenario planning (envisioning how current realities might shape future outcomes). Historians also do think causally when placing themselves in the shoes of key actors since their interest is often in how historical context determines human action, as viewed in the past. Experimental research by Mitchell, Russo, and Pennington (1989) examined if temporal settings matter and found that people are more creative when generating explanations for past than future events. The researchers asked one group to generate reasons why a social party about to happen might turn out to be a fiasco. They then

presented the same information to another group which was told that the party had actually occurred and was a fiasco. Subjects given the hindsight condition generated about 25% more possible reasons for the failed social party than those given the prospective condition. The researchers further examined if the main cause of this significant difference was the temporal setting itself or the confounding effect that the past outcome is viewed as more certain [a]. So, they examined two additional scenario vignettes as well, namely an uncertain past condition plus a certain future setting of the party. The results showed that differences in the degrees of (un)certainly across these four experimental conditions explained all of the effect.

Subsequent research by Russo (2020, pers. comm.) further tested the quality of the reasons given and found that the extra 25% generated in hindsight were of comparable quality when judged by outside experts. Other important aspects, however, still need to be examined further such as how cohesive past versus future narratives tend to be. Mitchell et al also found significant differences in the level of specificity of the reasons generated, with more concrete causes offered in hindsight than foresight [b]. For example, the hindsight group might say that uncle Harry got into a fight over an insult whereas the foresight group might just say that a fight broke out. Since good narratives hinge on details and causal connections, concrete versus more abstract causation may matter. Given people's tendency to overexplain occurrences after the fact—even surprising ones due to their hindsight bias (Fischhoff, 1975; Hawkins & Hastie, 1990)—a scenario's credibility can be enhanced if cast in the past tense (as though looking back from a point in the future).

TABLE 1 Comparative assessments

	Points of difference	Historical analysis		Scenario planning
<i>ORIENTATION</i>	Temporal view	Looking back (mostly)	[a]	<i>Looking forward</i>
	Thinking mode	Diagnostic: from O back to C*	[b]	Causal: from C toward O*
	Main goals	<i>Reconstruction & explanation</i>	[c]	<i>Foresight & strategy</i>
	Objectivity	Remote observers mostly	[d]	<i>Vested interests; influencers</i>
	Teleology	Common in past; anathema now	[e]	<i>Few grand underpinnings</i>
	Time frames	From decades to centuries	[f]	<i>From 3 to 20+ years</i>
<i>METHODOLOGY</i>	Areas of focus	<i>Context & human agency</i>	[g]	<i>Pivotal uncertainties</i>
	Self-Reflection	Considerable (historiography)	[h]	<i>Embryonic/Limited</i>
	Approaches	Many types and schools	[i]	<i>A few major streams</i>
	Complexity	Nuances matter greatly	[j]	<i>Big picture views</i>
	Chance events	Limited attention or interest	[k]	<i>Essential to the enterprise</i>
	Inspirations	<i>Counterfactual views</i>	[l]	<i>Science fiction & art</i>
<i>EXECUTION</i>	Knowledge base	Sources and inferences	[m]	<i>Trends & uncertainties</i>
	Formal modeling	<i>Minor (except cliometrics)</i>	[n]	<i>Often considerable</i>
	Size of work team	Small (often solo)	[o]	<i>Much group debate</i>
	Diversity of views	<i>One narrative preferred</i>	[p]	<i>Competing narratives</i>
	Evaluation criteria	Peer acceptance; impact	[q]	<i>Strategic value; accuracy</i>
	Retrospectives	Many: history is endless debate	[r]	<i>Few ex post critiques</i>

Note: Italicized items highlight attributes where one discipline can learn from its left or right neighbor.

*O = Outcomes; C = Causes; Bracketed letters like [b] or [q] are added for reference later.

The idea that history, as a discipline, is pedagogical in nature has deep roots and is popularly accepted as a common fact. Although history may not literally repeat itself, it often rhymes as Mark Twain quipped. But to what extent is this really true and why? A biological approach would emphasize that human constants like greed, hope, fear, bias, and idealism manifest themselves reliably across situations, from economic cycles to predictable marches of folly into war (Tuchman, 1985). Relatedly, it could be argued that humans—like any other species—exhibit predictable collective behaviors due to shared genetic blueprints. So, it should be possible to anticipate human reactions to some degree in many situations, just as with other animals. Even though humans are more self-conscious and exercise choice deliberately (we think), they also act based on genetic or social imprinting resulting in herd behavior and prior base rates. This Bayesian view is commonly used in economic, social and political forecasting where the past provides initial probabilities (about GNP growth, educational trends or political elections) which are then updated with new information. Bayesian models have even been used to describe how historians themselves develop and update their beliefs over time, based on new data, viewpoints or interpretations (Tucker, 2004).

A related argument in support of history repeating itself is that the highly complex environment in which historic dramas play out often exhibits cyclicity and path dependency. Both suggest that the future is partly predictable because it is causally connected to the fabrics of the past and present. The word *forecasting* captures this very notion, suggesting that the momentum of the past casts itself forward, with action and reaction often producing repetitive cycles. William Faulkner (2011) emphasized this temporal continuity when noting that “the past is never dead. It's not even the past,” since history continues to frame how we see the present. Also, when looking backward from the present, we may risk interpreting historical developments too much from our contemporary frames of mind.² Historians try to examine past events from the perspectives of the actors at that time, with attention to the experiential and cultural contexts that prevailed then. From those vantage points, they may then actually engage in prediction as well.

Those skeptical of the view that history repeats itself may argue that the phenomena historians examine are often granular and complex, with limited generalizability across time or place. The sciences of complexity and chaos have shown, for example, that even deterministic systems, in which all interactions are precise, lawful and devoid of stochasticity, can still appear unpredictable [j]. In complex non-linear systems, such as weather or human uprisings, a small variation in initial conditions can change the trajectory of the system in surprising ways. Such extreme sensitivity to nearly unobservable micro-conditions is popularly known as “the butterfly effect” (Lorenz, 1972). Researchers at the Santa Fe Institute in New Mexico have used “phase space diagrams” to explore order in these seemingly chaotic systems [n], which at times gravitate toward what were dubbed “strange attractors” (Gleick, 1987). In addition to deterministic chaos, forecasters also need to deal with genuine stochastic elements [k]. One famous historical example is that “shot heard around

the world” in 1914 which killed Archduke Franz Ferdinand of Austria and precipitated World War I. Other examples include the dangerous misunderstandings of diplomatic messages conveyed between the USA and Soviet Union during the Cuban Missile Crisis which brought the world frighteningly close to a second nuclear war (Blight & Welch, 1990).

Finally, there remains the question of what we mean by predictive acumen. Forecasting is not limited to single discrete events, like who will win a political election, but can be probabilistic across a wide range of finite outcomes or even be continuous across infinite outcomes. Such stochastic forecasts cannot be judged for accuracy based on any single outcome but will require repeated observations under well-controlled conditions (Hacking, 2006). Still, knowledge of the past does permit us in some domains to make very strong singular predictions such as the sun rising tomorrow again [m]. Karl Popper (1982) suggested two end points to define the continuum of predictability in social science: “clocks are neat orderly system that can be solved through reduction; clouds are an epistemic mess, highly irregular, disorderly, and more or less unpredictable.” In history as well as future studies, different conditions along the clock-cloud spectrum may be encountered depending on the situation, issues, scope and time frames examined.

2 | HISTORICAL ANALYSIS

A historian's inquiry about a particular time period and geographic region typically starts with the study of written sources. Ancient Chinese, Egyptian, Hebrew and Greek scribes left numerous records, as far back as the Neolithic revolution and Sumerian markings on clay over 6,000 years ago. In the Western tradition, starting with the ancient sages Herodotus and Thucydides, historians have focused on the role of time, place (geography), sources, evidence, and interpretation as they developed historical narratives. As the Dutch historian Pieter Geyl (1958) noted “history is an endless debate” [r]. The field of history includes both radical skeptics who abhor grand sweeping models as well as ambitious theory-builders who propose broad, unifying principles. For example, such teleologically oriented thinkers as Georg W.F. Hegel or Karl Marx sought to uncover the long-term determinative forces of history. Even though historians can validate and rank evidence, they can rarely provide a definitive account of such deeper trends due to incomplete data about the past as well as the future.

Traditional themes historians explored include the rise and fall of empires, which can be political, economic, religious, or scientific in nature. The ebb and flow suggest that “winners” eventually transition into “losers” and that all power structures, no matter how dominant at a given time, are finite. History also shows that the dynamics of these transitions over time are neither clear cut nor mutually exclusive, interwoven with interregnum and liminal periods. Elements of the new nearly always coexist with the old, making it hard at times to distinguish between fissures and continuities. We see this clearly in

waves of technological innovations, which often overlap. Even though most of the modern world has gone digital, many analog systems still exist in electronics, including antiquated but functioning vacuum tubes in airport radars and amplifiers for music. The inexorable march of scientific progress continues to be an important as well as complex source of social change (see Nelson & Winter, 2009; North, 1965). Table 2 highlights some key tenets of historical analysis, drawing on historical scholars like Gaddis (2002) and Staley (2010). The table is worded to have relevance for scenario planners, with the caveat that historical research is often conducted solo or in duos (Henriksen, 2016), in contrast to scenario building teams [o].

Historians have traditionally also focused on roles played by leaders known as the “Great Men” approach. The pyramids are viewed as an accomplishment of the Pharaohs, not the slaves who built them. But contemporary historians increasingly develop narratives about women, minorities, workers, the oppressed or the views of revolutionaries. Fernand Braudel (1976), the preeminent leader of the French Annales school, replaced the study of leaders with the lives of ordinary people. He also shifted attention away from politics and wars toward climate, demography, agriculture, commerce, technology, transportation and communication. This allowed him to examine the Mediterranean region over periods of centuries, as a form of world history. Many historians today reject the search for definitive answers in history, small or large. They prefer to highlight a variety of interpretive discourses in order to better understand their multiple varied underpinnings (Ankersmit, 1989).

These shifts in perspectives should remind scenario planners that social changes, especially deep structural ones, are hard to understand and therefore predict. History shows how the interplay of ruptures (e.g. revolutions or innovations) competes with the power of “dominant frames” (Kuhn's paradigms). The interplay of current events with long term structural shifts is often misunderstood or overlooked, especially by the contemporary press or popular pundits. For example, fully understanding the impact the “Arab Spring” may require a long-term perspective, say decades from now or longer. Scholars today continue to debate, for instance, whether Britain's glorious 17th century versus the French Revolution a century later was the primary enabler of our modern Western political and social order.

In popular strands of history writing, the role of “great men” (or women like Cleopatra or Katherine the Great) remains appealing. The Second World War becomes a story about how Churchill, Roosevelt and Stalin eventually defeated Hitler, Mussolini, and Emperor Hirohito. This may deemphasize, however, the complex interactions of socio-cultural, technological, political and economic forces, as well as the role of serendipity and chance [k]. A refreshing defense against definitive stories is the growing interest in counterfactual history (Evans, 2014), a line of inquiry that asks what turns the past might have taken in other plausible scenarios [p]. For example, where would Europe be today if the US had not joined the Second World War (Ferguson, 2000; Tetlock, Eyrikson, Lebow, & Parker, 2006) [l]. This kind of simulated history is a welcome interdisciplinary bridge to studying the future, in that it acknowledges the complex and often uncertain processes underlying historical outcomes [k].

Karl Popper (2002) took this view in his book *The Poverty of Historicism* which argued that history is bound to fail as predictive social science. First, he noted that if we cannot even know the whole of the present state of humankind, how can we know its future? Second, evolution of life entails a unique historical process, not reducible to laws as in the natural sciences. Third, the human factor, with its presumed free will, foibles and biases, is the ultimate uncertainty. Fourth, even though scientific social laws may exclude possibilities, they will seldom reduce to just one possible outcome. Fifth, the future growth of scientific knowledge is unknowable in advance [m]. Popper was a strong critic of Marxism which he condemned for its belief in the inexorable laws of historical destiny (developmental laws). He dedicated his book to the countless victims - of many creeds and nations—who he felt unduly suffered from such flawed ideologies. The question of how predictable history can be remains front and center in scenario planning to which we turn next.

3 | SCENARIO PLANNING

The term “scenario” has many meanings, ranging from movie scripts and loose projections to statistical combinations of uncertainties. In its broadest sense, scenario thinking is as old as storytelling itself. As

TABLE 2 Important tenets of historical analysis

1. Posing questions and hypotheses that can be examined via archival research [m].
2. Delineating the scope of the research in terms of time and place, through chronology and periodization.
3. Marshaling relevant evidence from multiple sources such as historical artefacts, written materials, and scientific or statistical data.
4. Discerning deeper patterns in the evidence, with critical examinations and further tests.
5. Deploying secondary sources perhaps, such as comments on relevant events written at a later time, to supplement primary sources (original evidence) [m].
6. Writing narratives that offer an account of the facts, chronology and other evidence to explain what happened and why.
7. Critiquing narratives written by others and acknowledging the plurality of interpretations, not just about actual events but also counterfactual arguments proposed ex post [l].
8. Considering historiographic perspectives about various subjective elements in the selection of topics, methods, perspectives and evidence [d] and [h].

a tool for disciplined imagination, its formal roots trace back to the use of computer simulations in the Manhattan project during World War II. Not long thereafter, three broad lines of inquiry started to converge (Schoemaker, 1993). First, computers enabled simulated solutions, using Monte Carlo methods for otherwise intractable problems. Second, newly developed game theory provided a mathematical structure for the analysis of strategic conflict. Third, the analysis of post-war U.S. defense needs turned toward war game exercises in which humans and machines interacted. The Rand Corporation played a central role in bringing these three strands together in analyzing future military defense needs and strategies. Later, some of these Rand researchers, notably Herman Kahn, extended the simulation approach beyond defense applications, to companies, industrial sectors and society in general (Bradfield, Wright, Burt, Cairns, & Van der Heijden, 2005). Creative scenario planners can also derive inspiration from the art world (which is often ahead of its time), enlightened intellectuals and even science fiction (way out there) [l].

In corporate strategic planning, scenarios usually refer to script-like narratives of possible futures with a special emphasis on causal connections, internal consistency, and relevance (Hawken, Ogilvy, & Schwartz, 1982; Ramirez & Wilkinson, 2016). A few scenarios usually suffice to define a broad range or cone within which a company's future might unfold. Good scenarios present more than a description at a future point in time but especially highlight how an industry or market might evolve from today to that future state (akin to a Hollywood storyboard or movie). The different scenarios should reflect diverse viewpoints about what could happen externally, representing perspectives from within the organization as well outside (such as experts, think tanks or powerful stakeholders) [p]. Since the scenarios cannot possibly capture all future possibilities, the aim is to depict several archetypal narratives that span

a wide range (Wack, 1985). The aim of scenarios is not probabilistic forecasting nor to characterize a few uncertainties in terms of their possible outcomes and likelihoods. The main intent is to develop insightful narratives about possible futures that improve strategic conversations about planning (Van der Heijden, 2011). A distinction is usually drawn in business applications between the exogenous part of the world which the scenarios examine and the endogenous part of strategy formulation that is under leaders' control or influence.

The upfront scenario narratives should aim to stretch as well as focus collective thinking to be better prepared for the unexpected, including perhaps black swans (Taleb, 2007). Scenarios tell stories that by virtue of their diversity challenge people's mindsets, reduce myopia and counter overconfidence by bringing to mind possible futures not sufficiently considered yet [p]. This in turn invites organizations to stress test their existing strategies while also challenging leaders to devise more robust plans [q] and invest in organizational resilience (Derbyshire & Wright, 2014). Table 3 summarizes the main steps typically followed in scenario planning exercises (Schoemaker, 1995), recognizing that many variations and approaches exist in practice (Fahey & Randall, 1998). The black line in the table acknowledges that some practitioners consider scenario planning to be just about developing competing views of the uncontrollable outside world (i.e., steps 1–6 in the table). Most would go further, however, and consider the development of robust or flexible strategies to be an essential part of scenario planning [q] as well (in steps 7–10). The question of how much leaders should bet on one scenario versus remaining sufficiently adaptive to handle any possible contingencies, entails firm specific trade-offs between risk and return (Packard & Clark, 2019).

Steps 1–6 can be found in some form in most organizational writings about scenario development (Chermack, 2011; von der Gracht, 2008;

TABLE 3 Typical steps in scenario planning

1. Define the issues of interest and be clear about what the purpose of the scenario exercise is and for whom they are being developed and how (i.e. who is the client?).
2. After settling on an appropriate time frame and regional scope, assess which parts of the future are beyond the organization's control and why they matter (e.g. oil prices).
3. Identify current trends or predetermined elements that will need to be reflected in each scenario since they are part of the momentum of the past (e.g. the ageing population in developed countries).
4. Draw up a list of questions leaders would most like to ask an Oracle of Delphi and group these into the most important key uncertainties potentially shaping the future [g].
5. Project different combinations of outcomes of these top uncertainties and then identify preliminary themes to be further developed in the different scenario narratives [p].
6. Assess the internal consistency, plausibility and relevance of these initial learning scenarios, including how major external stakeholders would likely behave in them.
7. Refine these exploratory narratives to settle on decision scenarios and then the test organization's current strategies against these final scenarios and examine where these stress tests fail.
8. As needed, introduce more robustness and/or flexibility into the strategies so that the overall strategic vision can succeed more broadly across the multiple scenarios.
9. Create a portfolio of concrete strategic options that will allow the organization to pivot quickly once major uncertainties start to play themselves out.
10. Identify early indicators for each scenario and monitor these often enough to be ready when external conditions change (i.e. remain vigilant as an organization).

Wright & Cairns, 2011) whereas steps 7–10 are typical of what strategy books suggest for managing uncertainty [k]. However, the extent to which scenario planning has evolved into a well-grounded science, with empirical tests and validated concepts or principles, remains open to debate. Spaniol and Rowland (2018) painted a rather bleak picture, with Chermack (2011) deeming the field to be in a dismal state of intellectual development. This planning methodology did not arise from academia though but through practice, with Royal/Dutch Shell a leading pioneer. Increasingly, however, scholars are examining the method conceptually as well as empirically to place the discipline on a stronger footing [q].

It is noteworthy that even the millennia old field of history still has many streams [i], such as the French Annales school (Burke, 1990), Linguistic Turn (Rorty, 1992), Rankean School (Liebel-Weckowicz, 1988), Cliometrics (Fogel & Engerman, 1995) and the Cambridge school (Major, 2005) among others. The much younger field of scenario planning likewise distinguishes a variety of schools, including Shell's Intuitive Logics, Cross Impact Analysis in the USA, and Godet's La Prospective in France plus some German variants (see Bradfield et al., 2005). Such reflections about content, methodology, purpose and even style help a field to become more self-critical. Pertinent questions in historiography, for example, include: who writes history (beside the victors), with what agenda in mind, and towards what ends? How might the selection of sources (or their exclusion) prejudice the outcome of a historian's work in ways that matter? The same questions should increasingly be asked about scenario planning [h].

4 | SCENARIOS FOR SOUTH AFRICA

The Mont Fleur scenarios were developed during 1991–1992 in order to stimulate constructive debate about how to shape the decade of South Africa post-apartheid. Nelson Mandela had been released from prison in 1990, formerly banned political parties (such as the ANC) had been legalized by the white government, and multi-racial democratic elections were being considered. Discussion groups were happening all over the country about how to end Apartheid and transition to majority rule, after decades of economic stagnation, declining investments, international boycotts, falling domestic product, growing unemployment and extreme income disparities. A peaceful transfer of power from an oppressive white minority to a multi-racial majority was being negotiated to avoid civil war (Lowenberg, 1997). The time was ripe given the collapse of the Soviet Union in 1991 which reduced the threat of communism being exported into South Africa, as happened in Angola, Ethiopia, and Mozambique after gaining independence.

Business and political leaders in South Africa had experimented with scenario planning since the 1980s (Segal, 2007), led by the Anglo-American Corporation. This was the country's largest mining company which published two starkly different views about South Africa's future [p]. The so-called Low Road scenario depicted a downward spiral into further boycotts, isolation, and civil war due to the immorality and unsustainability of Apartheid. The High Road

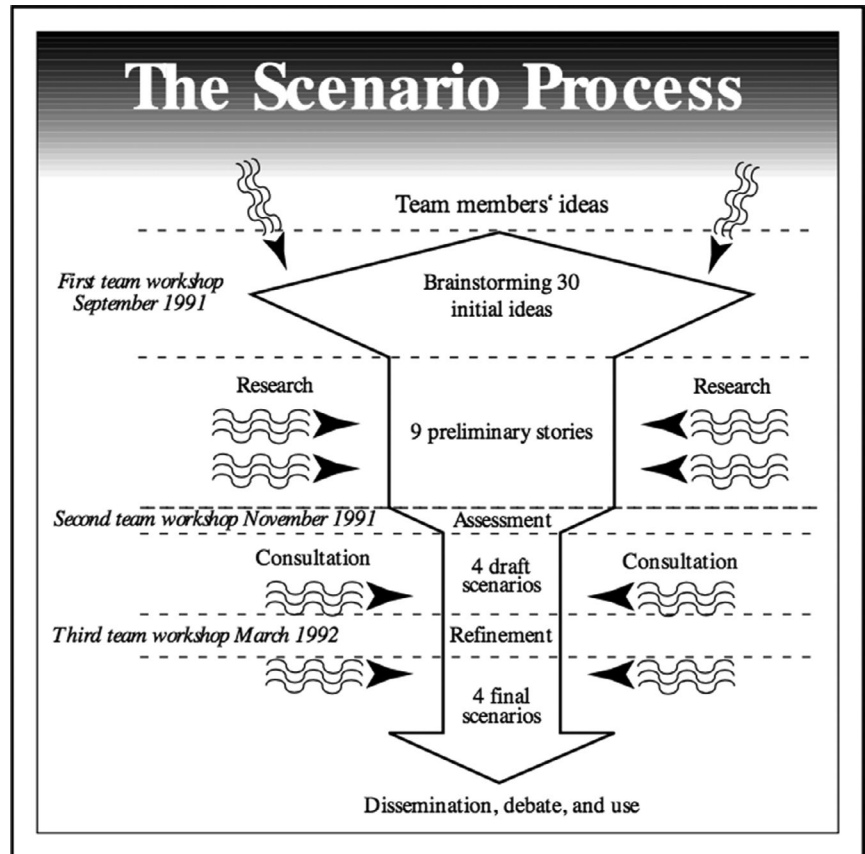
scenario painted a move toward representative democracy with South Africa rejoining the United Nations and sharing its abundant wealth more equally with all citizens. Clem Sunter (1987), Anglo American's top strategic planner, travelled the country to present these two scenarios to leaders in government, labor unions, industry, universities, media and diverse civic groups. Some observers credit the fierce debates they sparked as slowly turning the internal tide against Apartheid although how much influence they really had is unclear. Although the country today is still far from realizing the High Road scenario, it avoided the Low Road scenario thanks to a remarkably peaceful but rather protracted negotiation process (Gillomee, 1997; Sparks, 1996; Waldmeir, 1997).

The totally separate Mont Fleur scenarios developed several years later were an experimental exercise in “future-forging.” Around 25 South African leaders met over four intense, informal weekends at the Mont Fleur Conference Centre near Cape Town.³ Guided by Adam Kahane, an experienced and respected scenario planner on assignment from Royal Dutch Shell, the group generated 30 possible “stories” for the next ten years in South Africa [o]. Figure 1 summarizes the scenario process used to develop these narratives which mostly focused on securing a negotiated settlement with the white government and sound economic policies once under black majority rule. The group's diversity ensured that expansive options for the future would be considered and that various constituencies in South Africa would take them seriously [p].

After extensive debate, the individual story lines were further synthesized into four scenario narratives with such evocative titles as *Flight of the Flamingos*, *Ostrich*, *Lame Duck*, and *Icarus*. Box 1 below summarizes these four final scenarios which were published in a leading weekly newspaper in 1992, followed by press releases, free reprints and a video. Detailed descriptions of the Mont Fleur scenario project and its normative scenario approach can be found in Kahane (1999 and 2012) and Gordon (2020). The aim was not to develop comprehensive anticipatory scenarios the way Shell or Anglo might have, focused on uncertainties beyond the company's control. The purpose instead was to coalesce the participants' visions, passions and power positions to change the prevailing political winds toward the *Flight of the Flamingos*, while avoiding the three negative scenarios through indirect influence and growing public support later.

The Mont Fleur workshops represent a successful application of normative-advocacy scenario planning in that diverse stakeholders developed trust, respect and arrived at a common vision about how to shape their shared future. When viewed in hindsight, however, it is curious that none of the four scenarios depicted what actually happened in the country. The Ostrich story did not happen because there was indeed a political settlement with free elections in 1994. The government under Mandela avoided becoming a Lame Duck and Icarus was prevented through fiscal constrained. However, the Flight of the Flamingo did not materialize either, although leaders tried to give it lift during Mandela's single 5-year term. When viewed through a traditional scenario lens (as in Table 3), several important developments in the country—which the team was surely aware

FIGURE 1 Mont Fleur's workshop dynamics



of—received little attention. One was the sharp rises in theft, property crimes and violence after the ANC defunded the police, since it was a much feared and despised institution associated with the old Apartheid regime.

Another important development not addressed in any of the four scenarios was a sharp increase in “white flight.” Well-educated white students continued increasingly to emigrate to Australia, the US and Europe. The widespread rise in crime helped fuel this exodus of talent leaving the country. A study by the South African Institute of Race Relations estimated that after 1995 some 800,000 whites, out of a population of four million whites, left the country. The exodus also extended to black South Africans and other groups. Even though the number of blacks earning advanced degrees grew from 361,000 to 1.4 million in the twelve years up to 2009, emigration among this well-educated native group doubled over that period as well.

Other pertinent developments were also put aside in the Mont Fleur scenarios, such as the ravages of AIDS due to systematic government denials of a link to HIV and other misguided public policies fueled by endemic corruption. The combined effect of these forces created a sense of malaise rather than hope. Increases in urbanization, very high levels of unemployment, and poorly educated young blacks living in ghettos made the country unsafe. The low levels of education were a sad legacy of a segregated education system which left millions ill-prepared to function in a free society and global economy ready to do business. Poverty and hopelessness were especially undermining large poor townships such as Soweto, Khayelitsha and Mdantsane,

turning sections of them into breeding grounds for crime. The murder rate reached 50 per day, placing South Africa in the dismal league of Sierra Leone, Colombia and Afghanistan at the time.

Speaking broadly, the post-Apartheid period was characterized by political crises and corrupt concentrations of power (Madonsela, 2019). Political tensions were still at play, with Zulus fighting with Sotho, Venda with Ndebele, and leaders of the white minority trying to create an autonomous governance zone, Orania, without success (Cavanagh, 2012). The new government had difficulty delivering essential services at times, like electricity, water and public safety. Jacob Zuma's term as President, which started in 2009, was marred for nearly a decade by wide-scale corruption, assaults, and autocratic behavior. He had been ousted by President Thabo Mbeki in 2005 while Deputy-President for seeking bribes and Zuma managed to accumulate over 700 indictments (without any convictions yet). The jury is still out on whether Cyril Ramaphosa, his successor and former colleague, will improve South Africa's dire situation.

5 | LESSONS FROM HISTORY

It is a matter of opinion whether the four Mont Fleur scenarios should have better envisioned what really happened after a peaceful government transition occurred in 1994. The dominance of the country by the African National Congress, with increasing cronyism and corruption, has been characterized as state capture (Desai & Vahed, 2017). Over time, president Zuma accorded an outsized political role

BOX 1 The Mont Fleur Scenarios in a Nutshell

The message of *Ostrich* was that a non-negotiated resolution of the crisis would not be sustainable. This was important because elements of the National Party (NP) government and the business community wished to believe that a deal with their allies, instead of a negotiation with their opponents, could be sufficient. After hearing about the team's work, NP leader F.W. de Klerk was quoted as saying, "I am not an Ostrich."

Lame Duck's message was that a weak coalition government would not be able to deliver and therefore could not last. This was important because the nature, composition, and rules governing the Government of National Unity (GNU) were a central issue in the pre-election negotiations. The NP wanted the GNU to operate subject to vetoes and other restrictions, and the ANC wanted unfettered "winner takes all" rules. *Lame Duck* explored the boundary in a GNU between compromise and incapacitation.

Icarus warned of the dangers of a new government implementing populist economic policy. This message—coming from a team which included several of the left's most influential economists—was very challenging to the left, which had assumed that government money could be used to eradicate poverty quickly. The business community, which was worried about *Icarus* policies, found the team's articulation reassuring. The fiscal conservatism of the GNU was one of the important surprises of the post-election period. The simple message of *Flight of the Flamingos* was that the team believed in the potential for a positive outcome. In a country in the midst of turbulence and uncertainty, a credible and optimistic story makes a strong impact. One participant said recently that the main result of the project was that "We mapped out in very broad terms the outline of a successful outcome, which is now being filled in. We captured the way forward of those committed to finding a way forward."

Source: Adam Kahane (1999); Le Roux (1992); <http://www.gbn.org/scenarios/fleur/fleurIntro.html>.

to the wealthy Gupta family from India which helped enrich Zuma's cabal. Although the kleptocracy took decades to flourish, its seeds were planted much earlier. The Mont Fleur team did examine historical analogies, such as the economic failures of Argentina, Chile and Peru, to warn about an Icarus collapse. But historians would also have drawn parallels to the post-Colonial experiences of other countries, in Africa and beyond, after transitioning from totalitarianism to democracy. In many cases, this was accompanied by widespread economic hardship, underdeveloped or mismanaged civic institutions and discriminatory applications of civil laws. If more parallels had been drawn with similar cases from history, the scenarios might

have been more realistic (even if that was not their aim) and warned against state capture.

Concerning white flight, historical analogies might have surfaced with the American Revolution in the second half of the 18th century, when the U.S. experienced a significant exodus of so-called Loyalists who refused to abandon their allegiance to the English monarch. About 30% of these 500,000 loyalists in the colonies left for regions to the north and south or returned to England. Similarly, after Algeria gained its independence from France in 1962, some 900,000 *pièdes noirs*, mainly Catholic descendants of European origin borne in Algeria, left for France. And after left-wing military coups happened in Angola and Mozambique in 1975, the rising threat of violence caused one million citizens of these countries—known as the *retornados*—to leave their ancestral homes and repatriate to Portugal. Clearly, history foreshadowed some of misfortunes that befell South Africa. Normative scenario planners may feel predictive realism had to take second place to influencing near-term politics in this unique case. The broader question remains, however, how much realism is needed - or can be safely ignored - to fully unleash the power of normative scenarios?

Historians and scenario planners both appreciate that "surprise, contingency, and deviations from the trend line are the rule, not the exception" (Staley, 2002, p. 72) and that the broader societal context greatly matters. But historians may consider the time frames of scenario planners—typically on the order of three to fifteen years—too short to capture any deeper structural shifts at play (Neustadt & May, 1988). For example, Robert Fogel (2000)—the eminent quantitative historian, pioneer of cliometrics [n], and recipient of the Nobel Prize in economics—examined long term *awakenings* in society. These include the Renaissance fueling the Enlightenment—freeing citizens from the views of the church and state—to recognizing the inalienable human rights of slaves, women, children, and those handicapped. More recently, the rising concerns about our poor stewardship of planet Earth cannot be traced to one specific event, country or political movement. Some of these past awakenings took centuries to play out and new ones that might emerge—such as animal rights or active euthanasia—will likely play out over many decades as well [f].

Apart from issues of time frame and scope, scenario planners can also learn from historians how to think more deeply about the implicit mental models they employ [h]. The German philosopher Georg W. F. Hegel (1837), for example, developed his secular eschatology premised on determinism. He viewed the course of reality as a single epochal evolution, driven by reason, toward a providential end (the self-realization of mind and spirit). Likewise, Karl Marx's views about the scientific inevitability of society moving toward a workers' paradise are directionally determinative, as are the historical views of such Hegel disciples as Oswald Spengler (1947) and Arnold Toynbee (1934). The French philosopher, priest, and paleontologist Teilhard de Chardin (1930) similarly posited a long teleological arc in human evolution, from Alpha to Omega [e]. Although teleological views of history have fallen out of favor, they are still used to explain "Big History" such as the rise and fall of civilizations.⁴ But current

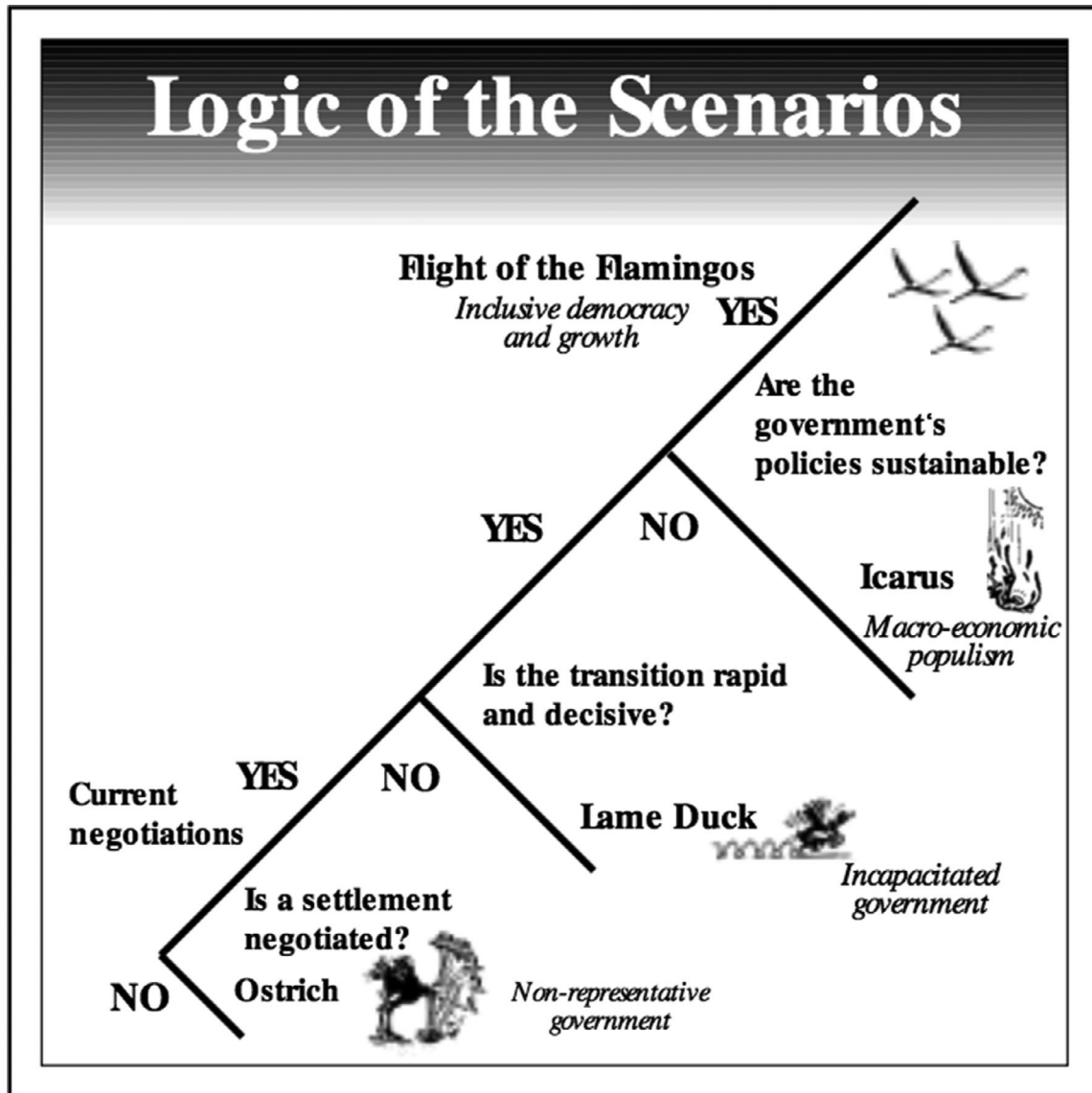


FIGURE 2 Mont Fleur's key uncertainties

historical thinking assumes that much in human affairs is unpredictable and random, including the long arc of history.

Another critical dimensions in comparing intellectual approaches is the presumed complexity of the system being analyzed, ranging from simple to very opaque [j]. Isaac Berlin's (1953) well-known essay about major intellectual viewpoints being either like hedgehogs or foxes gets at this issue. Berlin drew on the Greek poet Archilochus who observed that "*the fox knows many things, but the hedgehog knows one big thing.*" The hedgehog scores low on inner complexity since it relies on just one big defense mechanism: long prickly needles. The fox, by contrast, displays a wide array of cunning responses, making its behavior harder to explain or predict. Berlin argued that deep thinkers like Plato, Dante, Pascal, Dostoevsky, Hegel, Nietzsche, Ibsen and Proust, mainly understood the world through one big idea. In contrast, other intellectual giants, such as Herodotus, Aristotle, Erasmus, Shakespeare, Montaigne, Moliere, Goethe, Pushkin and Balzac, viewed the

world as deeply complex and not understandable through a few key insights.

Scenario planning occupies a distinctive place along the above two dimensions since it generally assumes that the future is highly uncertain or complex and not directionally driven in any grand sense [e] [j]. Scenario planners adopting this view recognize that historians' attempts to make sense of the past have yet to give us a firm handle on where the future may take us. To their credit though, historians have thought deeply about different paradigms underlying their craft, whereas scenario planning seems relatively immature epistemologically [h]. Historians' finely honed skill at fashioning causally coherent narratives amid contextual complexity is something scenario planners can and should emulate (Bradfield, Derbyshire, & Wright, 2016) [j]. The design of the Mont Fleur scenarios, for instance, hinged on a few key uncertainties (see Figure 2) involving negotiations between two Great Men (FW de Klerk and Nelson Mandela) and the performance of the new ANC government once in power. This nice but tightly structured

event diagram may not have allowed sufficient room for other forces that collectively moved South Africa away quite far from any of the four scenarios depicted in Mount Fleur.

6 | DIFFERENCES AND SIMILARITIES

As noted, the Mont Fleur scenarios represent a different strand of scenario planning than the traditional business kind summarized in Table 3, since it is aspirational and transformational from the start. Adam Kahane (1999) is one of its pioneers and he used scenario development to find common ground in a diverse group eager to improve South Africa [o]. In his own words “the aim was to produce a more successful economic transition than would have otherwise occurred.” Rather than react and plan for a world largely beyond their control, the aim was to shape it jointly based on the participants values, visions and societal connections. This approach resembles Russell Ackoff's (1993) idealized design method in which a desired future is the focus and driver of the planning process (see also Seligman, Railton, & Baumeister, Sripada, 2016). As such, it breaks the traditional divide in scenario planning between the uncontrollable and controllable parts of the world, since they get co-mingled from the very beginning. Although one aim of scenario planning may indeed be to realize a lofty vision via indirect means, such aspirations are best counter-balanced with other scenarios that could stand in the way. Although the Mount Fleur team produced three negative counter scenarios, the question remains whether they could or should they have better foreshadowed what actually happened in order to reduce corruption and prevent state capture?

In fairness, we should acknowledge that both predictive and normative scenario planning will often miss critically important aspects of the future. Royal Dutch Shell, for instance, missed the fall of the Berlin Wall (as did Gorbachev and the Pentagon) as well the fracking boom in the US this century. By conducting retrospective scenario reviews, that compare them in hindsight against what actually happened, historical analysis can help planners better understand the limitations of their mental models and methodologies [r]. History can furthermore help challenge the view that a nation, industry or company will naturally follow a predictable rational trajectory. The future is often shaped by irrational actions, emergent properties, and unanticipated consequences in addition to rational design or the momentum of the past [c]. So, it may be wise to include at least one future scenario that most of the intended audience will view as far-fetched, irrational or even impossible. After all, reality periodically serves up surprising scenarios such as the recent global Corona pandemic for which few if any were prepared.

The challenge for scenario planners of all stripes is to reflect sufficient diversity, depth and coherence in their narratives which is where historical thinking can help, as follows.

- Examine the issues of interest by going farther back in time to see deeper undercurrents and awakenings. My own rule of thumb is to look back at least double or triple the time frame

considered going forward [f]. The logic is that the past is just one realization of what at the time were multiple possibilities (the kind that counter-factual historians try to examine). So, looking say at the past ten years will greatly understate the true variance of what could have happened during that time frame *ex ante*. By looking back 30 years historically instead, and examining the most significant changes that occurred, scenario planners may get a better sense of what say the next 10 years might bring in terms of amplitude and surprises. If the ten years scenarios are viewed as a 90% confidence range, they should probably depict at least 30 years of past variance rather than just ten years.

- Further, to assure sufficient diversity and spread in the scenarios, it pays to reflect some of the different intellectual viewpoints already surfaced via historical analysis [p]. For example, one scenario could be designed to be directional in nature, like a long term trend in history, whereas another scenario might depict a largely random walk down an uncertain winding road. Likewise, planners can differentiate the scenarios in terms of whether they adopt a hedgehog or fox view of cognitive complexity as depicted in their influence diagrams (or in Popper's language, where to position the scenario along the clock-cloud continuum).
- Relatedly, it is important not to make all the scenarios rational extensions of current trends since history shows that most of them will experience counter-vailing forces [m]. Alvin Toffler (1990) warned against extrapolating presumed mega-trends by emphasizing that trees don't grow to the skies. The longer the planning horizon of the scenarios, the more reversals of trends need to be considered as well as other kinds of turning points, in line with the kind of disruptive dynamics that historians have demonstrated can indeed happen. The waning of trends is often foreshadowed by developments at the periphery which some scenarios should therefore scan and amplify. This will naturally imbue them with greater complexity (fox like).
- Adopting a historical mindset also encourages the search for analogies in other industries or time periods [m]. For example, if one scenario presumes the collapse of a major company or indeed an entire industry, why not highlight that this already happened in the photography industry due to digital imaging and in the newspapers due to the rise of internet. If the analogs are compelling, they implicitly suggest that history may indeed repeat itself or at least rhyme.
- One danger of projecting diverse outcomes of an uncertainty in isolation, such as oil prices being very high or low ten years from now, is that they become fragmented snapshots of the future rather than dynamic stories about a future context propelled by many causal factors [p]. No scenario should just be a static photograph of say 2030 but a dynamic movie instead offering a compelling narrative of how the future may actually evolve from today to that 2030 imaginary.
- To enhance plausibility, it helps to express scenarios in the past tense as though one is looking back from some point far in the future. This leverages the prospective hindsight effect discussed

at the start since explanations after the fact are easier to process [a]. It also capitalizes on the historian's plasticity to offer seemingly coherent explanations for almost anything that actually happened, with the attendant risk of creeping determinism. This price may be worth paying, however in order to imbue foresight stories with greater credibility. It essentially means fighting people's prospective myopia bias with another common bias, the false clarity of hindsight (Mukharji & Zeckhauser, 2019), to achieve a net positive.

- Lastly, we can learn from historians to remain disciplined about facts, inferences and deductions, while adding some abduction as well at times. But given the openness of the future, and the speculative nature of scenario projections, planners should not succumb to just writing fiction and practice disciplined imagination instead. To remain grounded in reality, they may wish to heed the advice of J.K. Paasikivi, a former president of Finland, whose statue in Helsinki proclaims that "the beginning of all wisdom is recognition of facts." Pierre Wack emphasized a similar sentiment by citing Paul Valéry's concern that poorly observed facts are more pernicious than bad reasoning, since others may catch the latter but not necessarily the former [j].⁵

The above bullets illustrate how scenario planners—whether of the anticipatory or normative kind—can use some of the hard-won wisdom of historians. Indeed, to the extent that normative scenario planners seek to change history, historical analysis should actually matter more. Historical realities may constrain what is possible and bending its course will require creativity and imagination as well as collective resolve and vision. In this sense, history is not just about the past but also about how it creates mental imaginations in the current generation that may in turn influence developments in the present and the future. For normative scenario planners, an important question therefore remains how fully to represent a wide range of possibilities, including perhaps taboo scenarios (Schoemaker & Tetlock, 2012). In the spirit of counterfactual thinking, for example, would the Mont Fleur scenarios have been more effective if endemic corruption, state capture and other factors the team ignored had been profiled explicitly? Or would this have undermined the trust and collaboration needed for this diverse group of powerful influencers to coalesce around a shared aspirational vision? Although the aim in scenario planning is not just truth-telling but meaningful collective action as well, aspirational scenarios that get too far away from reality may lose potency [q].

As Table 1 suggests, the methodologies used by scenario planners and historians are generally quite different, in part due to the differences in training, interests, methods and perhaps world views. Scenario planners are often interested in some form of model building. These models can be quantitative, as in economic analyses, or qualitative narratives supported by various intellectual blueprints and influence diagrams [n]. Historians more readily accept the complexity of the social world, with limited need to simplify or model it (except perhaps for cliometrics [n]).

We encounter here C.P. Snow's (2012) concern about two polar cultures: "at one pole we have the literary intellectuals, at the other scientists ... and between the two a gulf of mutual incomprehension." Scenario planning should be about much more than a two-by-two matrix structured around two key uncertainties or some complex influence diagram [n]. The deeper challenge is to develop future narratives that profoundly challenge people's mindset, in the spirit of Haldane's (1927) view that "the universe is not only queerer than we suppose, but queerer than we can suppose."

Lastly, it is encouraging that some historians are developing thought experiments about alternate histories that could have been if some pivotal past events had not occurred. These retrospectively imagined scenarios—based on counter-factual reasoning [l]—try to impose intellectual discipline on historical explanations, like experimentation in science (Gaddis, 2002). By asking how different the world could have been if some major events had not happened—like the US invasion of Iraq—historians try to approximate controlled variation (Tetlock & Lebow, 2001). In this regard, historians can learn from scenario planners perhaps how to create alternative narratives that explore what could or might have been (Bunzl, 2004). Good scenarios are, after all, speculative histories presented in advance premised on how various future uncertainties may play out.

7 | CODA

Although historians and scenario planners can very much learn from each other, we should also recognize that this will be challenging since cumulative learning has proven hard even within each discipline alone. As the teleological historian Hegel wryly observed "we learn from history that we do not learn from history." The same aphorism applies when substituting scenario planning for history since cumulative learning in our field leaves much room for improvement. Without deeper theoretical grounding in history when developing scenarios, or applying historiographic assessments and counterfactual reasoning when reviewing scenarios in hindsight, it will remain hard to improve the art and science of scenario planning.

DEDICATION

In memory of Franck Schuurmans, PhD, trained in history and experienced in scenario planning, with whom I started this research up to his untimely death on September 17, 2014. Franck contributed valuable insights about many historical methods and streams of thoughts, often from his extensive knowledge of 18th century German history which he drew upon frequently. He was a dear friend who helped reveal how studying the past versus the future entails many differences as well as surprising similarities.

ACKNOWLEDGEMENTS

I received valuable feedback from Frank Ankersmit (University of Groningen), Gretchen Anderson, Nick Binedell (University of Pretoria), Lawton Burns (Wharton), Peter Compo, George Day (Wharton), Adam Gordon (Aarhus University), Brian Isaacson (GIBS), Adam Kahane, David McDonald (University of Wisconsin), Brendon O'Brien, J. Edward Russo (Cornell University), Kimberly Schoemaker (Oxford University), Franck Schuurmans, Phil Tetlock (University of Pennsylvania), Johan de Voogd, Kees Wouters as well as four excellent anonymous reviewers. [Affiliations listed were those at the time I received the feedback.]

ORCID

Paul J. H. Schoemaker  <https://orcid.org/0000-0002-3619-5335>

ENDNOTES

- ¹ Leopold von Ranke (2010) wrote circa 1924 that "history has been assigned the office of judging the past, and of instructing the present for the benefit of future ages. To such high offices this work does not aspire. It wants only to show what actually happened (using the now well-known German phrase "wie es eigentlich gewesen")."
- ² Consider, for instance, the violent blood feuds between two rural families, the Hatfields and McCoys in Kentucky and West Virginia, during the period 1863–1891 (King, 2013). Their vindictive killings may seem utterly foolhardy to us now, but historians recognize that they stemmed from a deep-seated Scotch-Irish culture that fully sanctioned defending one's family honor. Ideally, historians will place themselves in the shoes of past actors and then look forward.
- ³ The participants came from the opposition and the government—among them Dorothy Boesak, Rob Davies, Derek Keys, Pieter le Roux, Johann Liebenberg, Saki Macozoma, Mosebyane Maltsi, Trevor Manuel, Vincent Maphai, Tito Mboweni, Jayendra Naidoo, Brian O'Connell, Vivienne Taylor, Sue van der Merwe and Cristo Wiese. They all helped shape the future of South Africa and several served as ministers in subsequent governments; see Gordon (2020) and <http://www.montfleur.co.za/about/scenarios.html>.
- ⁴ Historians operating in this vein include William McNeill, Christopher Baily, David Christian, Jared Diamond, Francis Fukuyama, Daron Acemoglu and James Robinson.
- ⁵ Paul Valery was a French poet, essayist, and philosopher. His original aphorism read "Un fait mal observe est plus perfide qu'un mauvais raisonnement."

REFERENCES

- Ackoff, R. L. (1993). Idealized design: Creative corporate visioning. *Omega*, 21(4), 401–410. [https://doi.org/10.1016/0305-0483\(93\)90073-T](https://doi.org/10.1016/0305-0483(93)90073-T)
- Ankersmit, F. R. (1989). Historiography and postmodernism. *History and Theory*, 28(2), 137–153. <https://doi.org/10.2307/2505032>
- Berlin, I. (1953). *The hedgehog and the fox: An essay on tolstoy view of history*, New York: Simon and Schuster.
- Blight, J. G., & Welch, D. A. (1990). *On the brink: Americans and Soviets reexamine the Cuban missile crisis*, New York: Noonday Press.
- Bradfield, R., Derbyshire, J., & Wright, G. (2016). The critical role of history in scenario thinking: Augmenting causal analysis within the intuitive logics scenario development methodology. *Futures*, 77, 56–66. <https://doi.org/10.1016/j.futures.2016.02.002>
- Bradfield, R., Wright, G., Burt, G., Cairns, G., & Van Der Heijden, K. (2005). The origins and evolution of scenario techniques in long range business planning. *Futures*, 37(8), 795–812. <https://doi.org/10.1016/j.futures.2005.01.003>
- Braudel, F. (1976). *Mediterranean and the Mediterranean world in the age of Philip II*, New York: Harper & Row.
- Bunzl, M. (2004). Counterfactual history: A user's guide. *The American Historical Review*, 109(3), 845–858. <https://doi.org/10.1086/530560>
- Burke, P. (1990). *The French historical revolution: The Annales school, 1929–89*, Stanford, CA: Stanford University Press.
- Cavanagh, E. (2012). *Regimes and rights on the orange river: Possessing and dispossessing Griqua Philippolis and Afrikaner Orania* (pp. 150–167). Master thesis at the University of Witwatersrand, History Dep, March 2012. University of Witwatersrand.
- Chardin, D. E., & Teilhard, P. (1930). Le phénomène humain. *Revue Des Questions Scientifiques*, 390–406.
- Chermack, T. J. (2011). *Scenario planning in organizations: How to create, use, and assess scenarios*, San Francisco, CA: Berrett-Koehler Publishers.
- Cicero De Oratore. II,9, Loeb Library. 55 BC, London, England.
- Derbyshire, J., & Wright, G. (2014). Preparing for the future: Development of an 'antifragile' methodology that complements scenario planning by omitting causation. *Technological Forecasting & Social Change*, 82, 215–225. <https://doi.org/10.1016/j.techfore.2013.07.001>
- Desai, A., & Vahed, G. (2017). The Gupatas, the public protector's report and capital accumulation in South Africa. *Alternation Journal*, 24(1), 26–49. <https://doi.org/10.29086/2519-5476/2017/v24n1a3>
- Evans, R. J. (2014). *Altered pasts: Counterfactuals in history*. Brandeis University Press.
- Fahey, L., & Randall, R. (Eds.). (1998). *Learning from the future*. John Wiley & Sons.
- Faulkner, W. (2011). *Requiem for a Nun*, New York: Vintage.
- Ferguson, N. (Ed.). (2000). *Virtual history: Alternatives and counterfactuals*. New York: Basic Books.
- Fischhoff, B. (1975). Hindsight is not equal to foresight: The effect of outcome knowledge on judgment under uncertainty. *Journal of Experimental Psychology: Human Perception and Performance*, 1(3), 288–299. <https://doi.org/10.1037/0096-1523.1.3.288>
- Fogel, R. (2000). *The fourth great awakening and the future of egalitarianism*. Chicago, IL: University of Chicago Press.
- Fogel, R. W., & Engerman, S. L. (1995). *Time on the cross: The economics of American negro slavery* (Vol. 1), New York: WW Norton & Company.
- Gaddis, J. L. (2002). *The landscape of history: How historians map the past*. Oxford, UK: Oxford University Press.
- Geyl, P. (1958). *Debates with historians*. New York: Meridian Books.
- Gillomee, H. (1997). Surrender without Defeat: Afrikaners and the South African "Miracle". *Daedalus*, 126(2), 113–146.
- Gleick, J. (1987). *Chaos: The making of a new science* (pp. 49–53). New York: Viking Press.
- Gordon, A. V. (2020). Limits and longevity: A model for scenarios that influence the future. *Technological Forecasting and Social Change*, 151, 119851. <https://doi.org/10.1016/j.techfore.2019.119851>
- Hacking, I. (2006). *The emergence of probability: A philosophical study of early ideas about probability, induction and statistical inference*. Cambridge, UK: Cambridge University Press.
- Haldane, J. B. S. (1927). *Possible worlds and other essays [1932]* (p. 209). London, UK: Chatto and Windus.
- Hawken, P., Ogilvy, J., & Schwartz, P. (1982). *Seven tomorrows*. New York: Bantion Books.
- Hawkins, S. A., & Hastie, R. (1990). Hindsight: Biased judgments of past events after the outcomes are known. *Psychological Bulletin*, 107(3), 311–327. <https://doi.org/10.1037/0033-2909.107.3.311>
- Hegel, G. W. F. (1837). *Introduction to the philosophy of history*. Translated by L. Rauch. Indianapolis: Hackett Publishing, 1988.
- Henriksen, D. (2016). The rise in co-authorship in the social sciences (1980–2013). *Scientometrics*, 107(2), 455–476. <https://doi.org/10.1007/s11192-016-1849-x>

- Iggers, G. G. (2005). Historiography in the twentieth century. *History and Theory*, 44(3), 469–476. <https://doi.org/10.1111/j.1468-2303.2005.00337.x>
- Kahane, A. (1999). Changing the winds. *Whole Earth*, 96, 77–81.
- Kahane, A. (2012). *Transformative scenario planning: Working together to change the future*. Berrett-Koehler Publishers.
- King, D. (2013). *The Feud: The Hatfields and McCoys: The true story* (1st edn.). Little, Brown and Company.
- Liebel-Weckowicz, H. (1988). Ranke's theory of history and the German modernist school. *Canadian Journal of History*, 23(1), 73–93. <https://doi.org/10.3138/cjh.23.1.73>
- Lorenz, E. N. (1972). Predictability: Does the flap of a butterfly's wings in Brazil set off a Tornado in Texas? Paper presented before the American Association for the Advancement of Science, December 29, 1972.
- Lowenberg, A. D. (1997). Why South Africa's apartheid economy failed. *Contemporary Economic Policy*, 15(3), 62–72. <https://doi.org/10.1111/j.1465-7287.1997.tb00478.x>
- Madonsela, S. (2019). Critical reflections on state capture in South Africa. *Insight on Africa* 1.11, 113–130.
- Major, R. (2005). The Cambridge School and Leo Strauss: Texts and Context of American Political Science. *Political Research Quarterly*, 477–485. <https://doi.org/10.1177/106591290505800309>
- Mitchell, D. J., Edward Russo, J., & Pennington, N. (1989). Back to the future: Temporal perspective in the explanation of events. *Journal of Behavioral Decision Making*, 2(1), 25–38. <https://doi.org/10.1002/bdm.3960020103>
- Mukharji, A., & Zeckhauser, R. (2019). Bound to Happen. *Journal of Applied History*, 1–23. <https://doi.org/10.1163/25895893-00101002>
- Nelson, R. R., & Winter, S. G. (2009). *An evolutionary theory of economic change*. Cambridge, MA: Harvard University Press.
- Neustadt, R. E., & May, E. R. (1988). *Thinking in time: The uses of history for decision-makers*, New York: Free Press.
- North, D. (1965). Industrialization in the United States. *The Cambridge Economic History of Europe*, 6, 2.
- Packard Jr., M. D., & Clark, B. B. (2019). On the mitigability of uncertainty and the choice between predictive and non-predictive strategy. *Academy of Management Review*. <https://doi.org/10.5465/amr.2018.0198>
- Popper, K. (1982). Of clocks and clouds. *Learning, development and culture*: 109–119.
- Popper, K. R. (2002). *The poverty of historicism*, London, UK: Psychology Press.
- Ramirez, R., & Wilkinson, A. (2016). *Strategic reframing: The Oxford scenario planning approach*. Oxford, UK: Oxford University Press.
- Rorty, R. (Ed.). (1992). *The linguistic turn: Essays in philosophical method*. Chicago, IL: University of Chicago Press.
- Le Roux, P. et al. (1992). The Mont fleur scenarios. Published in *The Weekly Mail and Guardian and in Deeper News*, 7(1), 1–26, July 1992. See also <http://www.gbn.org/scenarios/fleur/fleurIntro.html>
- Santayana, G. (1906). *The life of reason, 1905–1906* (Vol. I, C). New York: Scribner's Sons.
- Schoemaker, P. J. H. (1993). Multiple scenario developing: Its conceptual and behavioral basis. *Strategic Management Journal*, 14, 193–213.
- Schoemaker, P. J. H. (1995). Scenario planning: A tool for strategic thinking (pp. 25–40). *Sloan Management Review*, Winter.
- Schoemaker, P. J. H., & Tetlock, P. E. (2012). Taboo scenarios: How to think about the unthinkable. *California Management Review*, 54(2), 5–24. <https://doi.org/10.1525/cm.2012.54.2.5>
- Segal, N. (2007). *Breaking the Mold: The role of scenarios in shaping South Africa's future*, Stellenbosch, South Africa: African Sun Media.
- Seligman, M. E. P., Railton, P., & Baumeister, R. F., Sripada, C. (2016). *Homo prospectus*. Oxford, UK: Oxford University Press.
- Snow, C. P. (2012). *The two cultures*. Cambridge, UK: Cambridge University Press.
- Spaniol, M. J., & Rowland, N. J. (2018). The scenario planning paradox. *Futures*, 95, 33–43. <https://doi.org/10.1016/j.futures.2017.09.006>
- Sparks, A. (1996). *Tomorrow is another country: The inside story of South Africa's road to change*. Chicago, IL: University of Chicago Press.
- Staley, D. J. (2002). A history of the future. *History and Theory*, 41(4), 72–89. <https://doi.org/10.1111/1468-2303.00221>
- Staley, D. J. (2010). *History and Future. Using historical thinking to imagine the future*. Plymouth, UK: Lexington Books.
- Sunter, C. (1987). *The world and South Africa in the 1990s*, Cape Town, South Africa: Human & Rousseau.
- Taleb, N. N. (2007). *The black swan: The impact of the highly improbable*. New York: Random House.
- Tetlock, P., Eyrikson, R., Lebow, N., & Parker, G. (2006). (Eds.). *Unmaking the West: "What-if" scenarios that rewrite world history*. Michigan: University of Michigan Press.
- Tetlock, P. E., & Lebow, R. N. (2001). Poking counterfactual holes in covering laws: Cognitive styles and historical reasoning. *American Political Science Review*, 95(4), 829–843. <https://doi.org/10.1017/S0003055400400043>
- Toffler, A. (1990). *Future shock*, New York: Random House LLC.
- Tuchman, B. (1985). *The March of Folly, from Troy to Vietnam*. New York: Random House.
- Tucker, A. (2004). *Our knowledge of the past: A philosophy of historiography*. Cambridge, UK: Cambridge University Press.
- Van der Heijden, K. (2011). *Scenarios: The art of strategic conversation*, Hoboken, NJ: John Wiley & Sons.
- von der Gracht, H. A. (2008). Fundamentals of scenario planning. *The Future of Logistics Scenarios for 2025*, 69–87.
- Von Ranke, L. (2010). *Theory and practice of history: Edited with an introduction by Georg G. Iggers*, London: Routledge.
- Wack, P. (1985). Scenarios: Uncharted waters ahead. *Harvard Business Review*, 63(5), 73–89.
- Waldmeir, P. (1997). *Anatomy of a miracle: The end of apartheid and the birth of the new South Africa*, New York: WW Norton & Company.
- Wright, G., & Cairns, G. (2011). *Scenario thinking: Practical approaches to the future*, Basingstoke, UK: Palgrave MacMillan.

How to cite this article: Schoemaker PJH. How historical analysis can enrich scenario planning. *Futures Foresight Sci.* 2020;e35. <https://doi.org/10.1002/ffo2.35>