

## The Scenario Planning Paradox

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# THE SCENARIO PLANNING PARADOX

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## *Abstract*

*For more than a decade, futures studies scholars have prefaced scholarly contributions by repeating the claim that there is insufficient theory to support chaotic scenario methodology. The strategy is formulaic, and the net effect is a curious one, which the authors refer to as the scenario planning paradox. Contributing fresh theory supposedly attends to the “dismal” state of theory, while contributing new typologies purportedly helps bring order to methodological chaos. Repeated over time, the contribution strategy breaks down. Effort to resolve the theoretical and methodological issue, which motivates re-statement of the claim in the first place, ultimately fails. In actuality, the field is distanced from its purported goals. The “dismal” state of theory encourages scholars to adopt theory that is not necessarily tethered to a common core, which does not contribute to a shared, foundational theoretical perspective in futures studies. Perceived chaos gives way to typologies, which, as they mount, contribute to the chaos they were meant to resolve. The end result, intended by no one, is that theory remains dismal and methods remain chaotic. This direction for the field is indefensible and untenable; either the field accepts this claim as a statement of truth, for which the solution is substantially enhanced empiricism, or rejects the claim and re-interprets the bounty produced by said claim to be a kind of richness in theory and method rather than the implicit paucity, poverty, and imperfection that they oft signify to the field now*

*Keywords: dismal theory, methodological chaos, scenario planning*

## Introduction

There is probably no greater point of consensus in futures studies than the reality that there is no scholarly consensus with regard to the application of theory to support scenario methodology. This observation may appear paradoxical. It is not. It is also not the scenario planning paradox. The notion of a paradox can take two forms. Paradox captures a claim that, despite being self-contradictory, is, upon close investigation, found to be reasonable. Paradox can capture a claim that, despite being reasonable and generally accepted, effectively leads to a self-contradictory endpoint. As we shall see, the scenario planning paradox, perhaps fittingly, involves both.

The claim that scenario planning suffers from methodological chaos and dismal theory can be viewed as a self-contradictory assessment of the field. Upon inspection, introducing one new theory after another attends to the “dismal” state of theory, meanwhile contributing one new typology after another helps bring order to methodological chaos. Even so, the claim seems more reasonable in light of the purported goals of the field. The “dismal” state of theory encourages scholars to adopt theory that is not necessarily tethered to a common core, which does not contribute to a shared, foundational theoretical perspective in futures studies. Perceived chaos gives way to typologies, which, as they mount, contribute to the chaos they were meant to resolve, sidestep, or obviate. The problem is primarily a matter of perspective. The solution is to reject the claim and re-interpret the bounty produced by said claim to be a kind of richness in theory and method rather than the implicit paucity, poverty, and imperfection that they so often signify to the field now. This is the first form of the scenario planning paradox.

The same claim can likewise be viewed as a reasonable assessment of the field, but this leads to a different conclusion. For more than a decade, futures studies scholars have prefaced scholarly contributions by repeating the claim that there is insufficient theory to support chaotic scenario methodology. Based on Martelli (2001) and Chermack’s (2002) analyses, the claim is reasonable and generally accepted, as is evidenced by its frequent repetition in literature. Still, upon closer inspection, once the claim is used repeatedly to justify new contributions to the field, a self-contradictory endpoint comes into view, hence, the second form of the scenario planning paradox. This strategy for justifying research contributions is formulaic. Contributing fresh theory purportedly attends to the dismal state of theory, while contributing new typologies purportedly helps bring order to methodological chaos. What seems to aid in resolving the issues, in actuality distances the field from purported goals. Importing theory after theory does not result in a foundational theoretical framework for the field and methodological typology after typology begins to contribute to rather than stabilize perceived methodological chaos. The problem is primarily a matter of process. If the field accepts the claim as a statement of truth, then the solution is not an expansion of theory and methodological typology but substantially enhanced empiricism to down-select between theoretical and methodological options.

In what follows, the authors examine the origins of the claim regarding dismal theory and methodological chaos, demonstrate repetition of the claim, and hazard a few concluding remarks. This article will appeal to reflexive scholars curious about the interplay between constructing scientific contributions and the consequences of those practices. Inspiration for this manuscript, to wit, was born from reflections on a series of papers critically assessing the state of futures studies after 40 years of development (see, e.g., Fuller & Sardar, 2012; Slaughter, 2008). That said, the authors also acknowledge, fully and without remorse, that this paper may appear unorthodox to some readers. We offer no firm conclusion. Instead, once the

scenario planning paradox has been identified, the authors offer the reader two -- of perhaps many -- interpretations with regard to what the paradox means for the future of futures research. In closing, the authors survey a large body of literature; they had to be selective and recognize that their selections may not satisfy some readers.

## Origins of the claim

The claim that scenario methodology lacks theory hinges, in large part, on an older and more general discussion in the history of futures studies regarding the appropriate use of systematic methods for forecasting. Editorial comments from Volume 1, Issue 1, of *Futures* frame the field for the reader as having deep-seated problems with methods, and, in this set-up, the implicit message is that the (specifically plural) futures concept will help to resolve methods problems. As of 1969, while the field “is at present in the formative stage,” the origins of interest in the:

futures [concept] has arisen because of the need for systematic *methods* of dealing with the enormous number of variables that must be taken into account when forecasting (Editorial, 1969, p. 2).<Emphasis added.>

Please note the undeniable relationship implicated between theory or the conceptual and method or the methodological (in the passage above). While it is beyond the scope of this modest article to articulate fully and unambiguously the precise differences between theory, concept, method, and methodology, the authors adopt the position that they are relationally bound together in the practical application of the scientific enterprise (see, e.g., Burrell and Morgan, 1979; Kuhn 1964). Thus, dismal theory and methodological chaos are not separate claims so much as they are part and parcel of the same claim in the context of futures research.

Overcoming uncertainty and establishing confidence in futures research and practice, the editor claimed, will only be possible if practitioners work “according to disciplined methods” and clearly communicate these systematic methods to outside constituencies, for example, “managers and government officials” who will, in time, “come to depend more and more on professional forecasts” (Editorial, 1969, p. 3). While managers and government officials have, since then, come to depend on strategic planning and scenario methodology, the aspirational title of the editorial (i.e., “Futures – Confidence from Chaos”) seems never to have fully materialized, and this remains the case despite the considerable growth of scenario planning as an offshoot of forecasting (Slaughter, 2002). It appears that the problem with methods was and still is, in effect, inherited baggage, passed-on during the development of scenario planning from its origins in forecasting. <FOOTNOTE: Please note that the use of the term “method” in this context refers to applied methods used explicitly for conducting scenario planning and is not a reference to empirical scientific methods or the scientific method more generally. That distinction, though rarely articulated in scholarly communications within futures studies and the scenario planning literature, is essential for understanding the topic of this manuscript.>

Concern over “chaos,” with regard to methodology, dates back still further than this inaugural editorial piece in *Futures*. During the 1960s, the so-called father of scenario planning, Herman Kahn (1973, p. 146, as cited in Aligica, 2004, p. 80), openly claimed that “human societies are [so] complicated [that they are] beyond scientific generalization,” hence, Kahn’s

early formulation of the field was primarily shaped in the crucible of planning practices rather than based on scientific theory to support the enterprise. This has had a lasting impact. In fact, it appears that -- with rare exception -- almost every major shift in the field of scenario planning amounts to a transition in practice that is not met with a corollary opportunity to develop theory to justify or, at minimum, explain that transition. Scenario planning, in academia and in practice, seems to be an applied field of research driven by practice, and, thus, tends to emphasize “who is doing what” whenever a survey history of the field is crafted. To this end, the authors summarize a standard account of these historical milestones.

Since its underpinnings in hypothetical sequence planning (e.g., Kahn, 1960; Kahn and Wiener, 1967) and futurological practices associated with early futurists (e.g., Berger, 2010 [1925]; Toffler, 1970), the modern scenario method emerged in roughly three. Beginning in the 1960s to about 1980, the first period emerged as a component (i.e., hypothetical sequence planning) of a broad defense strategy in the shadow of the Cold War. From about 1980 to the mid-1990s, the second period is marked by corporate and industrial adoption of the scenario method followed by its simplification and widespread diffusion across various states, sectors, and institutions. From 2000 to the present, the third period captures a practice-based research field that scholars characterize as bereft of theory and overrun by methodological chaos.

#### *First period, 1960s-1980.*

Strategic scenarios are often seen as developed and popularized by defense strategists Herman Kahn and Andrew Wiener in their 1967 book *The Year 2000: A Framework For Speculation for the Next Thirty-Three Years* (Moore, 1968). They define scenarios as a “hypothetical sequence of events leading to a possible future” (Kahn & Wiener, 1967, p. 6), and the utility of scenarios attracted attention in policy and planning circles to “formulate wiser courses for the future” (Mason, 1968, p. 647). In the late 1940s and early 1950s, Kahn was purportedly supplied with a “blank check” by the United States Air Force “to think up ways ... to improve the nation’s defenses against the Soviet Union,” at which point RAND, a U.S.-based think tank employing Kahn, grew considerably (Abella, 2009, p. 33). By 1959, Kahn took leave from RAND and began speaking on civil defense to community groups, universities, and foreign affairs organizations. According to Abella (2009, p. 100):

Whereas most speakers contented themselves with one- or two-hour lectures, Kahn gave two- and three-day presentations, using a plethora of slides, charts, drawings, and projections to hammer his many points home. His graphs, showing the number of casualties under diverse wartime conditions, bore captions such as WILL THE SURVIVORS ENVY THE DEAD? And TRAGIC BUT DISTINGUISHABLE POSTWAR STATES

*On Thermonuclear War* was a compilation of Kahn’s (1960) talks, and reviews were mixed: in “a world familiar with hopeless talk of total annihilation if nuclear bombs were used for war, Kahn’s pragmatic views were unexpectedly bracing and clear-headed -- or repulsive and pornographic, depending on the reader’s political persuasion” (Abella 2009, p. 101).

Still, Kahn and Wiener’s (1967) work demonstrated the depth of military-industrial thinking and inspired other fields to take-up speculative thinking on a year 2000 horizon. For

example, Commission on the Year 2000 of the United States edited volume *Towards the Year 2000* (Bell & Graubard, 1967; see also, Bell 1967) elucidated hypothetical futures for the US at large. Shell, also in 1967, launched a “Year 2000” study, and, by 1972, scenarios were firmly incorporated in the firm’s planning activities (Bradfield et al., 2005: 799). As such, Kahn’s work and the pioneering effort at Shell are considered cornerstones of the scenario planning method. Kahn personified “thinking the unthinkable” by giving voice to the insoluble complexities of winning a nuclear exchange, thus, providing the rationale for escalating nuclear armament and intercontinental ballistic missile systems. As an aside, Kahn was satirized in Stanley Kubrik’s 1964 film *Dr. Strangelove* wherein Kahn was portrayed as a (mad) strategist.

Prior to this period, on balance, the scenario concept was being developed in France (see, e.g., Berger, 2010 [1925]). By the late 1950s, Gaston Berger, “philosopher, manager, and civil servant,” established the French school of prospective thinking (Godet & Roubelat, 1996, p. 164). The future orientation established in the French school also emphasized the prospect of preparing for multiple futures to unfold, which lead to an insight with lasting impact on the foundation of futures studies, namely, that good planning spurs action, especially action that changes the present in preparation for the future (see, e.g., Godet 1990). “Although Berger died in 1960,” van der Heijden et al. (2002, p. 129) write, “the Centre d’Etudes Prospectives flourished, and by the mid-1960s it had begun to apply the “la prospective” methodology to a range of public issues (including education, the environment, urbanization and regional planning)” (see also, Bradfield et al. 2005, p. 802).

By the 1970s, scenario planning experienced a period of growth and global expansion. Stories of Shell’s economic success spread to corporate executives, meanwhile academics and practitioners around the world published peer-reviewed articles charting stages, phases, and steps of the scenario method in a descriptive sense but also, for scenario planning, in a prescriptive capacity (Rowland & Spaniol, 2017; MacNulty, 1977). Multiple surveys also document growth in the adoption of scenario planning practices among large corporations in the United States and Europe during this time period (Linneman & Klein, 1979; 1983; Malaska, et al., 1984).

### *Second period, 1980 to mid-1990s.*

By the mid-1980s, trained in the French school, Pierre Wack emerged as a second major figure in scenario planning. Working for Shell, Wack published a pair of seminal articles in *Harvard Business Review* (Wack 1985a; Wack, 1985b). These articles solidified Shell Corporation’s position in the field and established Shell’s successes with scenario planning as the model to aspire to. Shell is one of only a few corporations to consistently invest resources in applying, improving, and publishing scenarios. It is not an overstatement to say that, in some circles, Shell’s approach to planning is something of an ideal type for large organizations. The popularity of scenario planning benefited from the attention given by high-profile academics in the field of strategy such as Michael Porter, Henry Mintzberg, and Peter Senge, during a prolific era of growth of business schools (Godet & Roubelat, 2000, p.1).

However, a significant shift took place for scenario planning in general from the mid-1980s up until the mid-1990s, marked by a provocative introductory statement in an article in *Planning Review*, Mason (1994, p. 7) announced that “[s]cenarios are back in vogue again.” It is not entirely clear why the perception existed that scenario planning had fallen out of favor. It

is possible that managers' expectations were set too high, and disappointment followed when their attempts to replicate the success of Shell did not measure-up. It is also possible that managers were experimenting with other management trends taught in the business schools (Cummings & Daellenbach, 2009, p. 240). Regardless of the precise explanation for this momentary decline, there are (at least) three notable occurrences in the early 1990s that restored widespread faith in the scenario planning method.

First, a novel case attracted global attention highlighting the successful application of the scenario method during the waning days of apartheid in South Africa (Murray, 1994). Scenario planning workshops, conducted by experienced Shell operatives at Mount Fleur, facilitated and framed the discussions of diverse political and economic leaders (Taylor, 2001). Titles of these iconic scenarios they produced include "Flight of the Flamingos," "Ostrich," "Icarus," and "Lame Duck," which echoed in the South African media for years -- if not decades -- and provided metaphors that distinguished between the potential pathways toward plausible, alternative futures. Academics and practitioners have celebrated the South Africa scenario planning effort as a moment wherein the future was successfully negotiated and a peaceful transition to democracy was articulated in the context of a precarious stalemate (Kahane, 2012). Thus, if the successes of Shell's breakthroughs in the early 1970s were difficult to replicate and managers were frustrated at their own lack of success, then the South African experience provided a fresh, high-profile example for scenarists to reference in the subsequent period. Furthermore, the case demonstrated the usefulness of scenarios outside of industry and provided a vivid example for scenarists wanting to engage with the public sector and political actors. As such, scenario planning ceased to be an exclusive domain reserved for military and Fortune 500 companies; instead, scenario planning was framed as a pragmatic approach to resolve public and political problems around the world (Rittel & Webber, 1984).

The second notable development was Schoemaker's (1993) article "Multiple Scenario Development: Its Conceptual and Behavioral Foundation," which constitutes a rare but recognized moment of theoretical development in the scenario planning literature. With MBA students as subjects, Schoemaker demonstrated the cognitive mechanisms at work in strategic scenario planning, with particular emphasis on over-confidence and the conjunction fallacy. Prior to this publication, scenario planning was something of a "tough sell" in academia, given that producing empirical data to support theoretical development was, until then, essentially non-existent. Scenario planning's impact on research concerning confirmation bias (Bradfield, 2008) and the framing bias (Meissner & Wulf, 2013) are also relatively rare exceptions to the general pattern of scientific conduct in scenario planning. In all, once scenarios were linked to empirical cognitive research (Kahneman & Tversky, 1973; Tversky & Kahneman, 1975; 1985), scholars of scenario planning were under increasing pressure to demonstrate that the outcomes of planning were, in non-trivial ways, measureable.

The simplification of the scenario method constitutes a third noteworthy, practice-based development. While the use of scenario planning purportedly declined again during the early 1990s (Martelli, 2001; Bradfield et al., 2005, p. 804), the 2x2 matrix popularized by Schwartz (1991) helped to transform the practice of scenario planning. In the appendix of Schwartz's (1991) book, *The Art of the Long View*, he describes juxtapositioning uncertainties on two axes thereby creating four quadrants resulting in a 2x2 space. According to scholars, the 2x2 method has a number of distinct advantages. Ramirez & Wilkinson (2014, p. 257) describe scenarios built using a 2x2 matrix as "memorable [and]... easy to communicate[;]... [they allow for the comparison of contrasting] scenario storylines ... [and also provide] helpful starting points for

developing each scenario in the set.” The 2x2 also serves to order planning conversations, according to van Asselt, et. al. (2010, pp. 62-76). As such, its mechanisms are intuitive and can be demonstrated quickly and easily. The 2x2, thus, overcame numerous difficulties associated with mass dissemination of scenario practices because it provided the appropriate combination of “technical sophistication and ease of use for a professional audience” (Bishop, Hines, & Collins, 2007, p. 20).

The 2x2 also notably decoupled the method from any distinct domain of inquiry. Once isolated and, to some extent, standardized, the 2x2 scenario matrix method became the subject of training programs, which, over time, have been integrated into academic curricula to train consultants and scenario facilitators. The 2x2 method was elaborated upon in seminal texts on scenarios, including van der Heijden’s (1996) *Scenarios: Art of the Strategic Conversation* and Ringland’s (1998) *Scenario Planning: Managing for the Future*. By 1994, Mason (1994, p. 7) stated that:

Seventies’ style scenarios were hard to implement; they didn’t link easily to financial models or produce explicit decisions. Now, however, scenarios are making a comeback, as evidenced by a burst of articles and speeches in the planning community ... [b]ut they’re different than they were twenty years ago. And this time they’re being brought to you by corporate strategists, not futurists.

### *Third Period, mid-1990s-Present.*

In futures studies, the new century began with an assessment of scenario planning that characterize the field as overrun by “methodological chaos” (Martelli, 2001) and bereft of theory (i.e., Chermack, 2002). The claim is now a formulaic element of account making in futures studies, which the authors now review. Please note that because of the repetitive nature of the claim under study, this section will also be repetitive -- too repetitive for some readers. The authors acknowledge this drawback; it is unavoidable given that they aim to demonstrate rather than merely state the repetitiveness. Also, while the authors acknowledge that theory and methodology are relationally bound in practice, they are separated in this analysis merely for ease of presentation.

*Overrun by methodological chaos.* Martelli’s “Scenario building and scenario planning: State of the art and prospects of evolution,” published in 2001 by *Futures Research Quarterly* (now *Futures*), contains the proverbial lightning rod statement on methodology in futures studies. After surveying scenario practitioner-facilitators and then hosting a panel discussion with them, Martelli (2001) wrote that “methodological chaos” characterized scenario planning in practice. The “methodological chaos” claim is perhaps the most well-cited of its kind, picked-up by numerous authors, for example, by Amer, Daim & Jetter, (2013), Bradfield et al., (2005), Bradfield, Derbyshire, & Wright (2016). Pillkahn (2008), Ramirez et al., (2015), Rickards et al., (2014), Slaughter (2002), and Varum & Melo (2010).

According to Martelli (2001, p. 57), problems associated with methodological chaos “stem from the same identical theoretical and practical approach to the study of the future,” that is to say, stem from this hybrid, practice-based research field. In 2005, Bradfield et al. (2005, p. 795) echoes and extends Martelli’s claim, stating that the “literature reveals an abundance of



different and at times contradictory definitions, characteristics, principles and methodological ideas about scenarios.” Consider Bradfield et al.’s (2005, p. 795) claim in its full context:

Scenario Planning has been around for more than 30 years and during this period a multitude of techniques and methodologies have developed, resulting in what has been described as a ‘*methodological chaos*’ which is unlikely to disappear in the near future ... This is reflected in the fact that literature reveals an abundance of different and at times contradictory definitions, characteristics, principles and methodological ideas about scenarios. It has been suggested that a pressing need for the future of scenarios is amongst other things, to resolve the confusion over ‘the definitions and methods of scenarios’.<FOOTNOTE: Emphasis added.>

As we shall see, Bradfield et al. (2005) are not alone; the abundant repetitiveness of Martelli’s (2001) concern regarding methodological chaos echo year after year.

Two years later, consider Sharpe & van der Heijden’s (2007, p. 226) related remark, in the context of strategic conversation:

Bradfield suggests that good process involves more than just making contributions visible; they must also be introduced into the overall strategic conversation, requiring good process and facilitation. He suggests that this issue gets a lot less attention from strategists than it deserves, leading to his observation of ‘*methodological chaos*’ in many strategy efforts.<FOOTNOTE: Emphasis added.>

Stewart (2008, p. 161) notes the practical implications for literature reviews and other scholarly summary of the field:

Given the diversity of methods in practice, creating an overview of scenario methods continues to prove problematic. Despite scenarios being regarded by some as future studies’ “foundational method” ... and providing “methodological unity to futures studies” ... scenarios are considered by others to be in a ‘*methodological chaos*’ ... with no consistent definition appropriate or accurate across the breadth of their practice.<FOOTNOTE: Emphasis added.>

Varum and Melo (2010, p.356), in turn, restate Bradfield et al.’s (2005) restatement of Martelli’s (2001) concern about chaos, echoing both Sharpe & van der Heijden (2007) and Stewart (2008):

Bradfield et al. [2005] ... are primarily concerned with the resolution of the ‘*methodological chaos*’ of contradictory definitions, characteristics, principles and methodological ideas found throughout the literature.<FOOTNOTE: Emphasis added.>

Lang (2012, pp. 94-95) positions theoretical development as essential for overcoming methodological chaos, writing that:

... some authors have called for improvements that are needed in scenario planning such as developing its theoretical underpinnings (Chermack 2004; Chermack 2011;

Wilkinson 2009) [in order] to address what Martelli (2001:64) has called “*methodological chaos*”. <FOOTNOTE: Emphasis added.>

Moriarty (2012, p. 787) identifies methodological chaos as the “overriding criticism” of the field, and, neatly and uniquely, questions whether stabilizing that chaos would actually accomplish much, stating that:

... [c]riticisms of scenario analysis cite factors commonly associated with criticisms applied to “normal” theory construction ... [and review of the literature unveils] a range of criticisms that attend current scenario analysis practices and reveals an overriding criticism, not one of purpose or potential utility, but what Martelli (2001) colourfully terms “*methodological chaos*”. These criticisms also suggest circularity. Where scenario analysis relies on discursive techniques, its processes may be criticised as wooden, lacking richness or failing to admit evident subjective or intuitional behaviours typifying organisational endeavour over time.<FOOTNOTE: Emphasis added.>

Amer et al. (2013, p. 26) indicate that any decline in the adoption of scenario methods may be a palpable side-effect of methodological chaos, stating that with the:

large number of scenario development techniques and models presented in the literature some authors describe it as ‘*methodological chaos*’ ... Some researchers argue that preference for scenario planning approach has slightly declined because scenario methods ... [have] evolved into [a] set of very complex sub-techniques which are difficult to implement easily and often help of an expert and/or a sophisticated software tool is required.<FOOTNOTE: Emphasis added.>

By 2013, the concern is starting to appear as though it is a taken-for-granted matter of fact; according to Dusza (2013, p. 137):

Over the past 30 years, the methods of scenario planning were described so diversely that we may call it a “*methodological chaos*.”<FOOTNOTE: Emphasis added.>

Typologizing the scenario planning process is occasionally identified as a solution to the issue. Thus, academics have sought to wrangle the chaos by systematizing methods into various typologies, according to Gordon (2013 :88), who writes:

Since the rise of scenario planning as a mainstream planning tool, many academic authors have attempted to determine a classificatory system or “typology” of scenario work, to bring order to the *methodological “chaos”* of contested definitions and justifications perceived in the field.<FOOTNOTE: Emphasis added.>

Rickards et al. (2014, p. 645) restates and repeats Gordon’s (2013) observation:

In response to the ‘*methodological chaos*’ that characterises the practice-driven field of scenario planning, numerous academic writers have sought to order the field by

grouping different scenario approaches into typologies.<FOOTNOTE: Emphasis added.>

Ramirez & Wilkinson (2014, p. 255) acknowledge the issue and attempt to clarify the matter through further specification:

Scenario practices have continued to evolved and coevolved over the decades and, as a result, there is diversity of and within methods that leads to misunderstandings and methodological confusion, which Martelli ... called *methodological chaos*. Schoemaker ... noted that three prime characteristics set the scenario approach apart from the then traditional planning tools: (1) it is an approach centered on a script or narrative; (2) it places uncertainty across rather than within individual models, and (3) it chunks out complex future possibilities into discrete states that are easier to assess, use, and compare.<FOOTNOTE: Emphasis added.>

Ramirez et al. (2015, p. 71) note that “several efforts” to resolve methodological concerns “have been undertaken:”

Because scenario planning developed as a practitioner-led domain in a great variety of settings, many different practices, methods, techniques and tools have been proposed and used. Social scientists have made scenario planning practices an object of study and have found that many of these practices contradict others in terms of both their ontological assumptions and their epistemological orientations, leading to what Martelli (2001) referred to as “*methodological chaos*”. Several efforts to distinguish, compare, and classify the variety of scenario planning practices and their theoretical and philosophical underpinnings have been undertaken.<FOOTNOTE: Emphasis added.>

Randt (2015, p. 14) refines the claim:

“A plethora of scenario development models and techniques” has been created within the Intuitive Logics School (Bradfield et al., 2005, p. 796). In fact, “there are almost as many ways of developing scenarios as there are practitioners in the field.” (Bradfield et al., 2005, p. 800) This issue has made some authors call the current situation in Scenario Planning a “methodological chaos.” (Martelli, 2001) Others state that “few techniques in futures studies have given rise to so much confusion as scenarios.” (Khakee, 1991, p. 460) and claim that “there seems to be no uniform and generally accepted way of drawing up [...] scenarios [...]” (Malaska et al., 1984, p. 45).

Bradfield et al. (2016, p. 60) state that “paucity of theory” is the (or a) source of confusion:

Scenario planning has been around for more than 50 years and during this period a multitude of techniques and methodologies have developed, resulting in what has been described by Martelli (2001) as ‘*methodological chaos*’. The literature reveals an abundance of different and at times contradictory definitions, characteristics, principles and methodological ideas about scenarios. The consequence, according to Khakee

(1991), is that ‘few techniques in futures studies have given rise to so much confusion as scenarios’ (p. 52). This ‘confusion’ results from the fact that there is a paucity of theory underpinning the use of scenarios as a means to consider the future, leading Chermack (2002) to conclude that ‘the status of theory development in the area of scenario planning is dismal’ (p. 25). This is equally true of futures studies in general, which Miller (2006) contends, lacks a coherent and commonly accepted foundation when compared to other well-established academic disciplines.<FOOTNOTE: Emphasis added.>

No matter how often the concern over methodological chaos is repeated, the issue still boils down to a single passage by Martelli (2001, p. 63):

... intuitive logic is strictly connected with the expert or group of experts who work on the scenario, the techniques are assembled in the most varied way, and consequently it is hard, if not impossible, to check the validity of the particular approach adopted from a scientific point-of-view. This difficulty is certainly compounded by the fact that most of the scenario studies concerned remain the property of a client company or governmental agency and are therefore not subject to that “peer review” which is, in the long-run, the only method to ascertain the validity of a technique or set of techniques and the scientific reliability of a researcher (but this is generally true of all methods used in scenario building and planning).

If practice-based scenario work remains essentially private without a blind peer review system in place to shape practice, then the scenario method is unlikely to become more scientific and, therefore, less chaotic in form and function. It follows, therefore, that one of the greatest points of scholarly, academic consensus in futures studies with regard to the scenario method is that there is no consensus in futures studies with regard to the status of the scenario method, which the authors repeatedly demonstrated with quotations from extant, relevant literature.

*Bereft of theory.* Shortly after Martelli’s (2001) critique, Chermack (2002, p. 25) assessed the status of theory in scenario planning and concluded that it was “dismal.” Chermack’s review of major contributions to scenario planning revealed analytical emphasis on practical application at the expense of explicit theoretical considerations and moderate evidence that scholars even occasionally conflated “method and theory” (Chermack 2002, p. 26). In an inextricably bound statement, Martelli (2001, p. 68) also characterizes Peter Schwartz’s (1991) seminal text, *The Art of the Long View*, as theoretically “flimsy;” without theoretical support, Martelli (2001, p.68) states, the approach cannot and “does not really tell [readers] much about how to build scenarios and use them in strategic planning.”

As a corollary element of methodological chaos, concern over the lack of theoretical support for scenario planning remained essentially dormant after being voiced by Chermack (2002). Recently, however, there is evidence of renewed scholarly interest in the underpinnings of scenario planning. Predictably though these scholars lament the state of theory in the field rather than appreciate that theory and method are, once again, being considered in tandem.

To begin, the authors provide Chermack’s (2002, p. 26) original language:

This focus on practical application and development can certainly be appreciated as the refinement of these methods has, in some cases, produced agile organizations that seem to be able to anticipate change. One need only look at [Shell's] success with scenarios to see this impact. On the other hand, some scenario projects have resulted in remarkable failure and there has been little effort in searching for the cause. The greatest danger in this situation is *atheoretical application*.<FOOTNOTE: Emphasis added.>

Bradfield (2008) acknowledges Chermack's (2002, p. 26) concern over "atheoretical application," thus, more forcefully linking the field's practice-orientation to method with its lack of theoretical undergirding; Bradfield (2008, p. 198-199) writes that:

according to Khakee (1991) ... "few techniques in futures studies have given rise to so much confusion as scenarios" (p. 52). This confusion may be explained by the fact that unlike other long-range forecasting methods there appears to be *no solid theoretically based foundation underpinning scenario techniques*. As a number of writers have noted, there is in fact "a paucity of systematic research" (Kuhn & Snizek, 1995, p. 148), leading Chermack (2002) to conclude that "the status of theory development in the area of scenario planning is dismal" (p. 25). This is explained by the fact that the growth in popularity of scenarios has happened for practical reasons rather than theoretical ones, the consequence of which is that "theoretical research and sophisticated tools have been neglected in favour of multiple applications" (Godet, 1990, p. 88). <FOOTNOTE: Emphasis added.>

Bradfield et al. (2016, p. 60-61) return to essentially the same language in 2016:

... [t]he consequence, according to Khakee (1991), is that 'few techniques in futures studies have given rise to so much confusion as scenarios' (p. 52). This 'confusion' results from the fact that there is a paucity of theory underpinning the use of scenarios as a means to consider the future, leading Chermack (2002) to conclude that 'the status of theory development in the area of scenario planning is dismal' (p. 25). This is equally true of futures studies in general, which Miller (2006) contends, lacks a coherent and commonly accepted foundation when compared to other well-established academic disciplines. Godet (1990) notes that the absence of a theoretical underpinning for scenario planning is because the growth in popularity of scenarios has happened for practical reasons rather than theoretical ones, and as a result 'theoretical research and sophisticated tools have been neglected in favour of multiple applications' (p. 88). <FOOTNOTE: For a similar rendition of this passage, see also Wright et al. (2013).>

However, this time, Bradfield et al. (2016, p. 60-61) provide further development of the issue, implicating a conflict of interest associated with practitioners and their retrospective accounts as well as a conflict of interest, echoing Martelli's (2001, p. 63) concern over a lack of peer review, with regard to objective judgment of the effectiveness of the scenario method; they write that:

... [c]onfirmation of this comes, firstly, from Hodgkinson and Healey (2008, p. 437) who note that most of the scenario literature comprises 'retrospective accounts of practising advocates . . . [and] individuals with significant vested interests in the phenomena of study'; and secondly Tetlock (2005), who suggests that 'Scenario consultants should not, of course, be the final judges of their own effectiveness. When pressed for proof, the consultants have thus far offered only anecdotes, invariably self-promoting ones' (p. 191).

Derbyshire (2016a, p. 47) justifies offering concepts from complexity science based on the current absence of theory to support futures studies practices and practitioners in general:

The complexity-science concept of the irreversibility of time, then, set in the context of the problem of 'crucial decisions', can therefore be used to theoretically underpin the practical tools widely-used by FS practitioners for consideration of the future. This is an important benefit to be derived from a complexity-orientated FS. Complexity science is a framework able to provide solid theoretical foundations for the practical techniques employed in FS, for which *there is often currently an absence of any underlying theoretical justification*—a fact that some in the FS field consider to constrain its development as a discipline (Chermack, 2002, 2004). <FOOTNOTE: Emphasis added.>

Derbyshire (2016b, p. 1) again, a few months later, identifies the solid-state conundrum facing the field, namely, that even in the context of advancing theory in futures studies, the repetition of Martelli's (2001) claim lingers:

Chermack ... commented that 'the status of theory development in the area of scenario planning is dismal' (Chermack, 2002, p.25) and that there is insufficient development of theory to support the 'fast growing' practice of scenario planning (Chermack, 2005, p.60). However, some progress has been made in addressing this issue in recent years - for example, by Phadnis et al. (Phadnis et al., 2014), who have recently set out an explicit set of theoretical axioms for scenario planning in this journal. Similarly, a number of augmentations to the 'standard' Intuitive Logics' (IL) approach to scenario planning have been set out in the recent literature, and the case for making these adaptations has drawn on theoretical discussions related to, for example, structuration theory (MacKay and Tambeau, 2013), indeterminism (Derbyshire and Wright, 2014; Wright et al., 2013; Wright and Goodwin, 2009) and complexity theory (Wilkinson et al., 2013), thereby adding more theoretical flesh to the practical scenario-planning process. Yet, despite this, it is still widely held, including by those having carried out what theoretical work does exist, that scenario planning remains underdeveloped theoretically. For example, Phadnis et al. (Phadnis et al., 2014) state that there remains a 'lack of theoretical grounding' for scenario planning, and Bowman (Bowman, 2015, p.79), writing very recently, implies the same.

The upshot is as follows: methods in the field are based on practice rather than theory. Scholars and practitioners may encounter a sizable conflict of interest when their objective, empirical understanding of the effectiveness of scenarios and scenario methodology come into steady contact with their role as scholarly or professional advocates (or both) for scenario planning.

Even as evidence of theoretical advancement accumulates, for example, sensemaking (Wright, 2005), organizational learning (Chermack, 2008), evolution (Evans, 2011), zen and aesthetics (Ramirez & Ravetz, 2011), causation and inference (Moriarty, 2012), complexity theory (Wilkinson et al., 2013), potential surprise theory (Derbyshire, 2016b), or consensus and social negotiation (Rowland & Spaniol, 2017), the claim that the field is bereft of quality theory continues unabated.

## Concluding remarks

As has been demonstrated, scholars in futures studies, especially experts in scenario planning, routinely preface scientific communications by reiterating confusion, internal to the field, with regard to the absence of shared foundational definitions, a generalized lack of theory supporting scenario methods, and concern regarding the vast discretion facilitators wield in the application of those planning methods. The net result, which is thought to plague the field, is constituted by dismal theory (Chermack, 2002) and methodological chaos (Martelli, 2001). Though conspicuous repetitiveness of this formulaic message is apparent to even casual observers of the literature, few scholars have sought to demonstrate or examine the phenomenon.

For the time being, consensus with regard to dismal theory and methodological chaos seems unflappable and the cycle of reinforcement seems bound to continue. The claims being repeated are overstated, framed as effectively non-negotiable, and seemingly insurmountable. After all, even rejection of the claim requires restatement of the claim and this too opens the door for reification. Please forgive the crutch of metaphor, but scholars endowed with steering the proverbial ship in futures studies continue to repeat that they are lost at sea; they re-bottle that message and they throw it back overboard, over and again. This reveals, in effect, the cycle that fuels the paradox of scenario planning that this article is devoted to. The cycle of reinforcement operates in the following two ways: scholars characterize the state of theory as dismal, and, in turn, contribute a theory; scholars characterize the field as suffering from methodological chaos, and, in turn, provide a typology. The authors consider the former and then the latter.

Framing theory as dismal affords scholars the near *carte blanche* opportunity to adopt theory from various outside fields untethered to the ontological, epistemological, and methodological assumptions of futures studies. Accounting for all theories imported into the scenario planning literature is beyond the scope of this article; amusingly, they are too numerous to recount here (e.g., Chermack & Lynham, 2002; Hideg, 2007; Karlsen, Øverland, & Karlsen, 2010; Rohrbeck, Battistella, & Huizingh, 2015); however, to name but a few, consider the theory of aesthetics (Ramirez & Ravetz, 2011), the behavioral theory of the firm (Gavetti, 2012; Gavetti et al., 2012), complexity theory (Wilkinson et al., 2013), empirical philosophy (Rowland & Spaniol, 2015), managerial cognition (Hodgkinson & Clarke, 2007), evolutionary theory (Evans, 2011), organizational learning (Chermack & Swanson, 2008), potential surprise theory (Derbyshire, 2016b), sensemaking (Li, 2014; Wright, 2005; Weick, 1979), consensus and social negotiation (Rowland & Spaniol, 2017), zen philosophy (Ramirez & Ravetz, 2011), and even work on ontology (Rowland & Spaniol, 2015; Poli, 2011; Walton, 2008). Far this vantage point, there is an appreciable variety of theory in the scenario planning literature. As Derbyshire (2016a, p. 1) rightly points out, “despite this, it is still widely held, including by those having carried out what theoretical work does exist, that scenario planning remains underdeveloped theoretically.” All these contributions to theory appear as though they

help fill the proverbial “hole;” however, as they mount, they paradoxically clutter the literature and thereby distance the field from the sort of shared foundational theory indicative of paradigmatic “normal science” (i.e., Kuhn, 1977).

Framing methodology as chaotic affords scholars the near *carte blanche* opportunity to justify the creation of typologies in an effort to restore some sense of methodological orderliness to the practice of scenario planning as it is rendered in scholarly accounts found in futures studies. Accounting for all typologies developed for the scenario planning literature is also beyond the scope of this article; amusingly, they are too numerous to recount here, some of which, but not all, pre-date and have helped give rise to the concern that scenario planning is overrun by methodological chaos (e.g., Amara, 1981; Amer et al., 2013; Biggs et al., 2007; Bishop et al., 2007; Börjeson et al., 2006; Bunn & Salo, 1993; Dreborg, 2004; Ducot & Lubben, 1980; Dufva & Ahlqvist, 2015; Georghiou & Keenan, 2004; Godet & Roubelat, 1996; Heugens & Van Oosterhout, 2001; Huss & Honton 1987; Masini, 1993; Popper, 2008; Ramirez & Wilkinson, 2014; Stewart, 2008; Tapio & Heitanen, 2002; Van Notten et al., 2003; Wilkinson, 2009; 2013; Wilkinson & Edinow, 2008). It is the orderliness of typologies that makes them so appealing and, ergo, the obviously appropriate solution to methodological chaos; however, as these typologies are posited and subsequently grow in number, despite their outward orderliness, masses of typologies end-up contributing to the disorderliness that characterizes the chaotic methodological environment in scenario planning.

Crucially, if the dismal/chaos claim were not even provisionally plausible to peer reviewers responsible for gatekeeping in this scholarly community, then the palpable need for the contribution (i.e., for more theory or another typology) is diminished and each subsequent contribution is less justified than the last. Thus, if every attempt at resolving the controversy necessarily verifies the unresolved nature of the concern, then, in the end, even scholars with a vested interest in resolving the controversy are forced to reify it in the process of attempting to resolve it. The dismal/chaos claim is, thereby, granted immortality. The moment we inquire: “Are dismal theory and methodological chaos dead?” “Long live dismal theory,” scholars will respond; “Long live methodological chaos.” Thus, though the claim seems liberating, it is not. Scholars are left with little room to maneuver in this constricted intellectual space; they encounter few functional choices beyond working within the confines of the current framework. They repeat the claim and thereby join the chorus and satisfy journal editors and their peer reviewers. The claim, though seemingly radical, is inherently conservative.

If the claim is itself outside of the actual practice of scenario planning and not contained in any theory or methodology associated with it, then voicing the it is firmly part of the social practice of scientific claims-making and, therefore, part of the social drama that is publishing in the postmodern age. Thus, the claim may function as a cue among insiders. Once the embedded nature and institutionalized need of the dismal/chaos claim is finally recognized in its full complexity, this immediately raises the possibility that stating the shared concern has become as a signal amongst active scholars and a reality in and of itself. Scholars may be using the claim as a bid to manage the expectations of reviewers, editors, and readers, by reminding them of the unresolved controversy that remains open despite efforts to close it, which serves to underscore the “crisis” status that the field suffers from (i.e., that “dismal” theory is an undesirable state of affairs and that action must be taken to improve the methodological orderliness of the field). Such “crisis” claims may go relatively unchallenged during peer review; no doubt, some active reviewers have contributed to the field under similar arguments and, thus, few scholars (if any) would benefit from challenging the claims and have their



previous work called into question. Thus, once initiated, the cycle is difficult to reverse. When the claim is initially repeated, it is difficult to discontinue repeating it. Gatekeepers in the peer review process may have a vested interest in keeping the claim alive and relevant, making repetition acceptable. The claim reflects consensus in the field and is, therefore, nearly impossible to reject on that ground too, making repetition essential to some scholarly accounts.<FOOTNOTE: Reviewer 1 rightly pressed the authors on this point:

Should peer-reviewers and editors immediately stop accepting papers that claim there to be methodological chaos? We see once more here the problem of reflexivity and the mess one ends up in if we go down the post-modern route, because that would then mean I must reject this paper, otherwise I am a peer-reviewer who is contributing to the problem.

The authors appreciatively responded, in the letter back to the editor and reviewers:

... we do not say that editors should stop accepting them or that scholars should stop submitting them. We do identify that as gatekeepers and producers, they play a role. The reflexive tension here -- called a "problem" by the reviewer -- positions everyone (i.e., the editor, the reviewers, the authors, potential future readers, etc.) in a difficult position to easily resolve, but it is the state we find ourselves in (literally, as in, in this sentence from the reviewer and in this sentence in response from the authors). That tension, "should we continue to publish papers that use this trope?", is a really hard one because by publishing THIS paper [that we are reviewing now] the following answers seem to emerge (provided the article is in professional shape and actually fit for publication). "Publish it" implies we should question papers (like this) that repeat the claims. "Don't publish it," in a way, implies we should continue to accept papers (like this) that repeat the claims.>

Taking a step back, in demonstrating this pattern, some awkward realities set in (see, e.g., Latour and Woolgar, 1986; Passoth, Rowland, 2013). The authors would be remiss not to admit that it is unfair to problematize the repetitiveness of the claims under scrutiny after having repeated the same claims during analysis. Meme-like repetition of claims is nearly impossible to draw analytical attention to without contributing to the repetition called into question in the first place. There is no safe, detached space to level such observations. To wit, reflexive scholars ask whether social scientists can "go on being instrumentally realist in ... [their] own research practices while proclaiming the need to demystify this tendency among natural scientists?" (Latour & Woolgar, 1986, p. 275–6) By extension, in drawing analytical attention to the claim, the authors must, in principle, admit to reinforcing the unresolved character of theory and methodology in scenario planning, if only inadvertently.

In closing, we restate the paradox. If, as a field, we view the dismal/chaos claim as self-contradictory, because theory and typologies are plentiful even if few constitute firm foundation, then this is a problem of perspective (see, e.g., Wilkinson & Edinow [2008] on post-normal science). The field should reject the claim, accept as wealth the ample theory and methods available, and resist the temptation to view the field as impoverished. In contrast, if we view the same claim as reasonable, because the claim, upon repetition, fails to generate the firm foundation scholars claim the field so desperately needs, then this is a problem of process (see, e.g., Schoemaker [1993] on demands for enhanced empiricism). The field should accept the claim, discontinue unabated expansion of theory and typology, and devote substantial future effort toward empirically assessing theory and method. Both positions are reasonable and unreasonable for the same reasons, hence, the scenario planning paradox.

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