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Uncertainty, Human Action, and Scenarios; An Austrian Theory Based Decision Support Tool for Business Strategy and Public Policy

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Abstract

The "scenario method", "scenario building" or "multiple futures analysis" emerged during the last decades as a premier instrument for strategic planning and decision making in conditions of uncertainty. This article demonstrates that there is an intrinsic link between Austrian theory and scenarios not only at the level of basic epistemological principles but also at the methodological and applied levels. The article also argues that the scenario method could easily be embraced as a part of the Austrian family of ideas and more precisely as one of the key policy applications or decision support tools informed by that school of thought. Blending explicitly and systematically the scenario method with the Austrian ideas and forcefully making the case for the scenario approach as a policy and business administration tool, is thus one of the most effective ways of reasserting the importance of Austrian insights in areas such as business studies, public policy and organizational theory, areas that currently have a limited exposure to Austrian ideas.
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UNCERTAINTY, HUMAN ACTION AND SCENARIOS

An Austrian Theory Based Decision Support Tool for Business Strategy and Public Policy

One of the key factors determining the visibility, success and influence of a social science research program or school of thought is its ability to extend its theoretical core not only at the empirical level but also into practical or policy applications. If that is the case, the complaints regarding the paucity of policy applications inspired by the Austrian theory (and especially its inability to generate organizational and managerial decision support tools) deserve a special attention. However, left unnoticed to those critics is the strong link between one of the most powerful managerial decision support tools and the Austrian vision of social order and human action. This tool, known as the "scenario method", "scenario building" or "multiple futures analysis" emerged during the last decades as a premier instrument for strategic planning, decision making and organizational development in conditions of uncertainty. Illuminating and explaining the natural but ignored link between scenarios and the Austrian theory might be an important step forward for the Austrian school in gaining ground at the applied level.

Indeed, the current developments in social sciences have increasingly brought to light the natural complementarities between the two: the Austrian school could provide the theoretical and epistemological foundations the scenario method needs, while the scenario method could be elaborated and redefined as one of the most powerful extensions at the applied level of the Austrian vision. Where the Austrian school may feel short of concrete organizational and policy techniques and operational principles, the scenario

approach offers a solution. Where the scenario method may feel the lack of theoretical and epistemic legitimacy, the Austrian school may offer a very powerful and compelling theoretical basis. This paper documents the intrinsic link between scenarios and the Austrian paradigm: it explains why despite its practical success the scenario method has problems in gaining ground in the mainstream neoclassical theory; shows why the natural place of this method is in the family of Austrian ideas; elaborates the ways in which scenarios could work within the Austrian framework, and outlines two basic ways of integrating scenarios as a first move made by Austrian scholars in a broader strategy of asserting their views in the field of business administration and public policy using as a starting point and vehicle the scenario method.

The Scenario Method

Although scenarios - mental projections of multiple alternative futures - are a natural way people deal with uncertainty and as such were always extensively employed in a wide range of activities from day to day business to war games and corporate strategy, Herman Kahn is credited as the intellectual father of the modern scenario building method. At RAND he was the first to elaborate a set of "methodological devices especially valuable in the study and evaluation of the interaction of complex and/or uncertain factors" and to call them "scenarios" (Kahn, 1973, 119-20). Scenarios, in Kahn's definition, are "hypothetical sequences of events constructed for the purpose of focusing attention on causal processes and decision-points". As such they can be used "for setting forth and discussing criteria, for the systematic comparison of various alternative policies (or alternative combinations of assumptions and objectives), and for generating additional scenarios (Kahn, 1967, 6).

The declared instrumental objective of the scenario is analytic. By constructing a "concrete" series of "named futures" and by treating all the

factors involved in an internally consistent fashion, the objective is to be better able to understand not only the separate factors and their interactions, but also those consequences "that are often overlooked in general or abstract analyses and discussions". By making potential directions and destinations clearer, the analyst may be able to get "a better understanding of the significance of current emphases, of the major alternatives, and of how different these may be" and a "feel" for events and "for the branching points dependent upon critical choices" (Kahn 1973: 119-21; 1967: 262). However the final objective of scenarios is the decision making process: "With a set of alternative futures and scenarios that lead to them by alternative routes, one may see better what is to be avoided or facilitated, and one may also gain a useful perspective on the kinds of decisions that may be necessary" (Kahn, 1967, 6).

Scenarios are both a matter of cognition and imagination. "Scenarios attempt to describe in more or less detail with more or less explanatory acumen some hypothetical sequence of events" (Kahn 1973: 119). The scenario builder is dealing with the unknown (and to some degree unknowable) future full of surprises. Analytical reason has serious limits in dealing with such circumstances and other intellectual faculties come to fore. Imagination has always been "one of the principal means for dealing in various ways with the future", and the scenario could be seen as "simply one of many devices useful in stimulating and disciplining the imagination". The "scenario" as a methodological device is nothing more than a systematic effort to generate by analysis and imagination, relatively plausible contexts in which the possible developments may be tested or at least discussed or evaluated (Kahn 1967: 262).

Scenarios emphasize different aspects of "future history" and may do that in many forms. Some scenarios may explore and emphasize one particular development or a particular element of a larger problem or trend. These are attempts to describe in some detail "a specific hypothetical sequence of events that could lead plausibly to various situations or a specific

situation envisaged" (Kahn 1967: 262). Scenarios may also be used to produce, "perhaps in impression tones", the future development of a culture, a nation, of some group or class or of the world as a whole. Such scenarios are dealing with events taken together—integrating several aspects of a situation more or less simultaneously. Finally there are scenarios "used just as a context for discussing or as a 'named' possibility that can be referred to for various purposes". But irrespective of the type of scenario employed, Kahn considered that there are several general functions of the scenario as an aid to thinking, common to all: (1) They are calling attention, to the larger range of possibilities that must be considered. They encourage plunging into the unfamiliar and rapidly changing world of the present and the future by dramatizing and illustrating the possibilities they focus on. (2) They force the analyst to deal with details and dynamics which he might easily avoid treating if he restricted himself to abstract considerations. (3) They help to illuminate the interaction of psychological, social, political, and economic factors, including the influence of individual political personalities upon what otherwise might be an abstract analysis, and they do so in a form which permits the comprehension of many interacting elements at once. (4) They can illustrate forcefully, certain principles or questions that would be ignored or lost if one insisted on taking examples only from the complex and controversial real world. (5) They may also be used to consider alternative possible outcomes of certain real past and present crises. (6) They can be used as artificial "case histories" and "historical anecdotes" either to make up to some degree for the paucity of actual examples, or as "existence theorems" or examples to test or demonstrate the technical feasibility or plausibility of some possible sequence of events (Kahn 1973: 120; 1967: 264-65).

> However, precisely because their unique usefulness, Kahn and his followers have been very keen to remind again and again that scenarios are not predictions about the future. Rather, scenarios are "tools for ordering one's perceptions about alternative future environments, in which one's decisions might be played out" (Schwartz, 1996) and an

effective “device for organizing a variety of much seemingly unrelated information, economic, technological, competitive, political, societal—some quantitative, some qualitative, and translating it into a framework for judgment” (Wack 1985).

At Hudson, Kahn transformed scenarios into a tool for business strategy and introduced them to the corporate world. Shell Oil was one of the first corporations employing scenarios. At the beginning of the seventies Pierre Wack and others at Shell built on the Hudson method and used scenarios to warn Shell’s executives of a possible dramatic rise in oil-prices. They realized scenarios should not aim only at just presenting systematic narratives about possible futures but also should be designed in such a way as to change the executives’ view of reality or “unlock their mind-sets”. By using scenarios as a cognitive device to challenge their imagination and perceptions, they led Shell’s executives out of their complacent world-view. When the oil-crisis occurred in 1973, Shell was ready. Shell’s success drew attention to the scenario method and from there scenarios took off and become accepted as one of the most effective and robust decision support methods in business strategy and public policy.

The success was even more dramatic when the limits and failures of the “unified planning machinery” prediction-based approach came to disappoint the high expectations built into its models and methods in the ’60 and ’70 (Kleiner 1996: 139-80). If accurate prediction was impossible even when supported by sophisticated mathematical models and powerful computing technologies, what was then left was the awareness of the need to be always mentally prepared, conceptually equipped and alert for uncertain multiple alternative futures, i.e. precisely the scenario method’s message and substance.

However despite its success in the practical world of business, the scenario method felt short of a similar victory in the academic world. It is

at least intriguing that given their crucial role in decision making, administration and institutional order in general, and the fact that they are in fact a unique procedure that is practiced on such a large scale as a necessary condition for social action, scenarios have been so marginal to academic interest in social sciences, even after their triumph over the "unified planning machinery" prediction based approach.

Positivism and the Epistemic Legitimacy of Scenario Building

The epistemic legitimacy problem encountered by scenarios is in a very interesting but unsurprising way related to the problem that haunts the epistemic legitimacy of Austrian school in the eyes of mainstream social science. One of the most challenging difficulties the scenario method and the Austrian school have to face has been the fact that in an era dominated by positivism and the legacy of positivism, their approach seemed epistemologically odd and not quite matching the rigid standards of scientific investigation imposed by the mainstream positivist cannon. In spite of the impressive successes of scenario building, the shadow cast on it by the fact that it was epistemologically suspicious to the philosophic mainstream undermined a good deal of its credibility and authority. Even in the wake of the retreat of positivism as a dominant paradigm, the situation in this respect remains disappointing.

Undoubtedly the main source of the damage done by logical positivism to the epistemological foundations of scenario building was neither the rigid methodology implied by it nor its ultra-empiricism but its widely accepted and influential theory of *explanation* (Hanson 1959). The crux of that theory is that explaining and forecasting events are logically and methodologically identical. If you are able to explain then you are able to predict and the other way round. It is true that positivists were interested in developing a theory of *explanation* and not of *prediction* but due to the alleged logical symmetry

between the two, a complete and analogous theory of prediction emerged in a natural way by implication from the theory of explanation (Helmer and Rescher 1959; Rescher 1998).

This model and the relationship between prediction and explanation implied by it, have raised to dominance and become the backbone of the theory of sciences for a couple of decades. That stalled any meaningful account of future oriented cognitive activities (or forecasting) for at least two reasons. First, the account that it has given to both explanation and prediction has been incomplete and harmful both to the explanatory and forecasting practice. Second, is has neglected the crucial issue of "understanding" - as opposed to "explanation"- in forecasting. The fact that the concept of understanding more adequately describes the cognitive process involved in dealing with the future than the concept of explanation was totally neglected. By imposing a rigid conceptual framework, positivism has arbitrarily undermined the epistemological legitimacy of many of the methods, practices and approaches involved in human mind's engagement with the future. Imposing explanation as a fundamental concept and criteria for forecasting the positivist epistemological model set mistaken and misleading standards and arbitrary relegated outside the proper domain of legitimate inquiry many of those methods and approaches (Bell 1997).

It is interesting to note that disentangling the models of predictions from those of explanation, claiming a role for understanding and making the case for a solid epistemological argument, remain today a priority as it was 30 years ago when the scenario method started to become popular. Scenario method practitioners and proponents share some of the responsibility for this situation. Their efforts to articulate an alternative by building on the existing epistemological and theoretical literature that might have given them an alternative to the mainstream were insignificant. Instead of engaging in that effort they retreated into the world of speculations and practical applications. Today, in spite of the change of the climate of philosophical opinion, the issue is still struggling against the legacy of positivism. The problem is similar to

the problems encountered by the Austrian school and was only amplified by the fact that scenarios, besides dealing with the epistemologically dubious problem of the future, were also dealing with the issue of the hypothetical, or possible worlds, an issue even more out-of-the-way to the positivist mindset. A "scenario" is an attempt to draw instruction from a process of hypothetical reasoning that proceeds by drawing out the consequences of an hypothesis which, although may be anchored in well established facts, refers to possible developments. Thus, it consists in reasoning from a supposition whose truth status is uncertain but is assumed provisionally as certain in the interests of developing a broader image of its implications, consequences, and assumptions (Kahn 1973). The scenarios refer to the realm of the possible, and as such belong to the ontology of possible worlds and to the psychology and epistemology of counterfactuals and thought experiments (Rescher 1998). It is thus understandable that that in itself was enough to irrevocably outcast scenarios from the mainstream research agenda as shaped by the positivist model.

To sum up, a study or a theory of scenarios could not be reduced to a mere extension of a theory of prediction. Themes such as conditionals, imaginary constructions, counterfactuals and analytic narratives are at least as important as the themes of prediction and explanation. Both the Austrian school and scenario building, with their message of dissent from the social science mainstream, have a crucial importance in regaining this lost ground. Moreover, the two are not conceptually and epistemologically independent of each other. They are two facets of the same issue and precisely due to that they were marginalized in such a consistent way by the rise of positivism: The Austrian theory confronts the challenge to understand more exactly what is going on in the innumerable cases when social actors marshal evidence, check it and try to project into the future the knowledge gained in the present in order to form expectations and strategies for action. Scenarios reflect the necessity to build decision support tools that incorporate that understanding.

The Foundational Connection between the Scenario Method and the Austrian School

The relation between the scenario method and Austrian school goes thus well beyond just a series of difficulties they share due to the academic climate of opinion that has indicted their incompatibility with logical positivism and its methodological legacy. In fact a closer look reveals that the relationship between the two is structural and organic. The Austrian school provides one of the most solid possible foundations to the scenario method, while the same method emerges as one of the key possible practical applications of the Austrian vision. While discussing the "radical approach" of the Austrian school Boettke and Prytchiko summarize incidentally but very clearly precisely the elements that make this school a natural basis of the scenario method:

> Austrian theory is an analysis of acting minds, of individuals attempting to switch their present state of affairs for imagined better states. This invariably links methodological individualism with the concept of time and genuine uncertainty (as opposed to risk, or formal, probabilistic 'uncertainty'" (Boettke and Prytchiko 1994: 228).

In other words, at its very core, the Austrian school coherently links all the elements that make up the basic building blocks of the scenario method: ideas and imagination-based decision making (as opposed to mechanical, stimulus response "rational choice"); focus on future oriented individual action (as opposed to systemic and deterministic modeling); and a vision of the universe defined by deep uncertainty (as opposed to mere probabilistic risk).

From the very beginning of the Austrian School, Menger stressed the importance of uncertainty in making economic decisions. Whereas classical

and neoclassical economists assumed a fully informed, maximizing "homo oeconomicus", Austrians asserted that such perfect knowledge and perfectly predictable universe never exist, and that therefore all activity implies risk and uncertainty. In a similar way, the Austrian theory is strongly individualist, decision making focused subjectivist and consequentially psychological in nature. Austrians are unique in their interest in the implications of ideas, beliefs and cognitive processes and in their emphasis on the role of individual psychology in determining individual's construction and perceptions of means and ends in action and social order. Finally the Austrians take seriously the notion of time and action in historical time. Processes in time and the time horizon of human action are crucial for their analysis and theories (Boettke and Prytchiko 1994: 226-30). As one can notice, all of the above are necessary conditions for any theoretical account of the scenario method. In fact, one can say that the Austrians have practically developed all elements needed for a foundational theory and a complete account of the rationale and nature of the scenario method.

By developing and theorizing the link between uncertainty and human action they prepared the ground for understanding the intrinsic links between uncertainty, decision and human action. The crucial contribution in this respect was Mises' argument that "uncertainty of the future is already implied in the very notion of action":

> That man acts and that the future is uncertain are by no means two independent matters. They are only two different modes of establishing one thing (…) To acting man the future is hidden. If man knew the future, he would not have to choose and would not act. He would be like an automaton, reacting to stimuli without any will of his own (Mises 1966: 104).

Uncertainty is thus established at the core of any theory of action or social order. Dealing with uncertainty becomes by implication crucial to any applications of those theories.

A second crucial contribution that clears the way for approached like the scenario method was the discussion of probability and praxeological prediction. Mises' analysis of probability anticipates and pre-empts the confusing theory of the symmetry between explanation and prediction that was to be promoted by the positivists. Even more, in that analysis he demonstrates that in dealing with the future it is not only possible but actually necessary to avoid over-relying on "explanation" but to use methods and approaches that are based on "understanding". In other words, he introduces the crucial notion of understanding as a key concept depicting the cognitive approach in dealing with the future.

Mises starts by separating the problems of *truth* and *certainty,* an epistemological (or theory of knowledge) problem, from the problem of probability, a problem that is, in his view, a praxeological (or theory of action) problem. He explicitly identifies the error of "confusing the problem of probability with the problem of inductive reasoning as applied by the natural sciences" and he exposes the attempt to "substitute a universal theory of probability for the category of causality" as an "abortive mode of philosophizing" (Mises 1966: 107-14). Then he goes on to introduce two different types of probability: class probability (or frequency probability)" and "case probability (or the specific understanding of the sciences of human action)". Class probability is applied to "the field of natural sciences, entirely ruled by causality" while case probability is applied to "the field of the sciences of human action, entirely ruled by teleology". Class probability is based on the assumption of knowing the behavior of a class of elements, events or phenomena. However, that does not imply knowledge of the individual specific phenomena or elements of this class (Mises 1966: 107-12). Moreover and very important, the formalization of "class probability" has a limited cognitive value:

> For this defective knowledge the calculus of probability provides a presentation in symbols of the mathematical terminology. It neither expands nor deepens nor complements our knowledge. It translates it into mathematical language. Its calculations repeat in algebraic formulas what we knew beforehand. They do not lead to results that would tell us anything about the actual singular events. And, of course, they do not add anything to our knowledge concerning the behavior of the whole class, as this knowledge was already perfect--or was considered perfect--at the very outset of our consideration of the matter (Mises 1966: 108).

If class probability addresses an aggregate phenomenon, case probability addresses particular events or elements of a class. The real challenge of forecasting grows out precisely of the case issue. However, Mises summons, case probability "has nothing in common with class probability but the incompleteness of our knowledge. In every other regard the two are entirely different" (Mises 1966: 108). He acknowledges the fact that many try to forecast particular future events on the basis of their knowledge about the behavior of the class but he rejects that, as something entirely based on a semantic confusion. For him those attempts are in fact

> (…) not forecasts about the issue of the case in question, but statements about the frequency of the various possible outcomes. (…) So far as such types of probable statements are concerned, we are not faced with case probability. In fact we do not know anything about the case in question except that it is an instance of a class the behavior of which we know or think we know (Mises 1966: 110).

Surrounded by misunderstandings and confusions as it is, "case probability" has a very special place in human's cognitive arsenal: it is a particular feature of our dealing with the compounded problems of human

action and uncertainty. To deal precisely with that problem one needs an approach in which each case of interest "is characterized by its unique merits, it is a class by itself" and that "all the marks which make it permissible to subsume it under any class are irrelevant for the problem in question" (Mises 1966: 110). This approach requires indeed something closer to the ideographic and interpretive way of thinking of historical sciences as opposed to the one based on statistical generalizations. The cognitive relevance comes from the particular, contextual and specific configuration of factors, elements and events that define the case in point. Only a semantic confusion mischaracterizes as "probability" something that is in fact of the nature of interpretation and understanding. The concept of understanding and its methodological and epistemic connotations and implications emerge thus as crucial:

> Everything that outside the field of class probability is commonly implied in the term probability refers to the peculiar mode of reasoning involved in dealing with historical uniqueness or individuality, the specific understanding of the historical sciences. Understanding is always based on incomplete knowledge. We may believe we know the motives of the acting men, the ends they are aiming at, and the means they plan to apply for the attainment of these ends. We have a definite opinion with regard to the effects to be expected from the operation of these factors. But this knowledge is defective. We cannot exclude beforehand the possibility that we have erred in the appraisal of their influence or have failed to take into consideration some factors whose interference we did not foresee at all, or not in a correct way (Mises 1966: 112).

In other words, Mises manages not only to link *uncertainty* and *human action* as faces as the same phenomenon but also to show how *understanding* stands together with them as their epistemic facet.

Mises is keen to speculate in his ironic way that one of the reasons understanding as crucial cognitive process is neglected may be because "resorting to an analogy borrowed from a branch of higher mathematics", i.e. the calculus of probability, is "more popular than the analysis of the epistemological nature of understanding" (Mises 1966: 114). But that analogy or the attempt to apply class probability and statistics to cases dealing with the future are doomed to fail despite their popularity. Processes in time are more important than statistics on classes of events. Determining the relevance of specific facts "in the chain of events which may bring about a specific event is not amenable to statistical analysis. (…) Such problems are not open to any elucidation other than that provided by understanding" (Mises 1966: 115). That is true even in the case of market processes where quantification may seem to make prediction easier:

> Quantitative problems are in the field of human action open to no other elucidation than that by understanding. We can predict (…) that --other things being equal-- a fall in the demand for a will result in a drop in the price of a. But we cannot predict the extent of this drop. This question can be answered only by understanding (…) Understanding, by trying to grasp what is going on in the minds of the men concerned, can approach the problem of forecasting future conditions. We may call its methods unsatisfactory and the positivists may arrogantly scorn it. But such arbitrary judgments must not and cannot obscure the fact that understanding is the only appropriate method of dealing with the uncertainty of future conditions (Mises 1966: 118-19).

To sum up, Mises creates a complete framework for analyzing future oriented thinking and action. In fact one may say that Mises prepared the ground for a system of though in this respect. Human action couldn't be other than future oriented and a science of human action is a science of the

struggle of human beings to understand and cope with uncertainty. That science has an ontological dimension (as defined by the key concept of uncertainty); a praxeological dimension (as defined by the key concept of human action) and an epistemological dimension (as defined by the key concept of understanding).

Mises arguments in this respect found an elaboration and a support from a different perspective in Hayek's work. Mises had already signaled the limits of natural sciences and of their logic and methods in terms of predictive power in human affairs, and the dangers of social sciences in imitating them too closely:

> Natural science (…) leaves unpredictable two spheres: that of insufficiently known natural phenomena and that of human acts of choice. Our ignorance with regard to these two spheres taints all human actions with uncertainty. … When dealing with a social actor that chooses and acts and that we are at a loss to use the methods of the natural sciences for answering the question why he acts this way and not otherwise (Mises 1966: 105).

Hayek took this line of argument and revamped it. In his Nobel Prize Lecture of December 1974 – a synthesis of his views in this respect - he charges against scientism or the imitation of natural sciences by economists as an attitude which, "is decidedly unscientific in the true sense of the word, since it involves a mechanical and uncritical application of habits of thought to fields different from those in which they have been formed." To support his claim, Hayek introduces the concept of complexity and builds up his argument around this very concept.

Economics and other disciplines, unlike the physical sciences, deal with "essentially complex phenomena" i.e. with structures whose "characteristic properties can be exhibited only by models made up of relatively large numbers of variables" and about which we can get limited

quantitative data. Hayek is eager to point out that the advance of the physical sciences "took place in fields where it proved that explanation and prediction could be based on laws which accounted for the observed phenomena as functions of comparatively few variables - either particular facts or relative frequencies of events" (Hayek 1974: 2). However, when dealing with social phenomena one has to build a theory of essentially complex phenomena. Such a theory "must refer to a large number of particular facts; and to derive a prediction from it, or to test it, we have to ascertain all these particular facts". Deriving testable predictions would then be easy. "The real difficulty, to the solution of which science has little to contribute, and which is sometimes indeed insoluble, consists in the ascertainment of the particular facts" (Hayek 1974: 3).

Hayek's conclusion is thus converging with the conclusion of Mises's analysis of "case probability". In the case of complex phenomena our "capacity to predict will be confined to general characteristics of the events to be expected and not include the capacity of predicting particular individual events" (Hayek 1974: 5). This recognition of the insuperable limits to our knowledge leaves the problem of action in time and future-oriented thinking open. How should one deal with particular future events or evolutions of interest if the "scientistic" prediction path is close? That leaves open only one way: "multiple alternative futures" and the power of well disciplined imagination in framing decision making. For those familiar with the Austrian tradition that is not a surprise.

Indeed the Austrian notions of human action and decision making are is significantly richer than the mainstream-economics ones and offer a clear opening in this respect. The mainstream approach reduces human decision and human action to an economizing decision, the selection of the most desirable option out of an array of given alternatives that pre-exist the act of decision, in other words to a mere mathematical maximization exercise. Everything is predetermined by the given context within which the decision and action unfold. On the other hand, from an Austrian perspective human

action is “including the determination of both what the available alternatives are and what ranking of relative desirability is to be adopted”, in other words, it is not only calculative but also imaginative and creative:

> Determining these elements [alternatives and rankings] inevitably exposes the agent to the uncertainties of an open-ended future (in a sense absent in the context of the standard "economizing decision"): action is the present choice between future alternatives that must, in the face of the foggy uncertainty of the future, now be identified in the very act of choice. It is this aspect of human action that renders it, for Mises, essentially entrepreneurial. Mathematical expertise in solving maximization problems is of very limited help in choosing among courses of action when the very alternatives must be "created," as it were, by the agent's entrepreneurial imagination and creativity, by his daring and boldness (Kirzner 1992: 128).

The Austrian economics approach introduces thus the critical issue of the constitutive and creative dimension of human decision making: “the creative imagination of the entrepreneur acting under open-ended uncertainty”. The very notion of market process is defined in those terms:

> The successful businessman-entrepreneur "sees" what other market participants have not yet seen. To see such opportunities will typically call for (a) superior imagination and vision (since the perceived opportunity to sell at the higher price is likely to exist only in the future) and (b) creativity (since such a profit opportunity is likely to take the form of selling what one buys in an innovatively different form, and/or different place, than was relevant at the time of purchase) (Kirzner 192: 129).

The theme of the role of the individual or subjective construction of action frameworks is compellingly illustrated in the works of authors like

Ludwig Lachmann and George Shackle. Human action, writes Lachmann, takes place in a world of uncertainty. The future is unknowable though not unimaginable and one of the most important consequences of this fact is that future events, whether pertaining to means or ends, typically appear in plans in the form of expectations. “Expectations have a radical importance for both human actions and its analysis and understanding. (…) But, different actors will typically hold divergent expectations about the same future event and (...) expectations are the more important, the more strongly they diverge" (Lachmann 1994: 221). The focus on the role of expectations and imagination in choice and decision making is one of the ways Austrians define cognition and its central places in social theory. Also they make out of it a crucial point in their criticism of the mainstream economists:

> Choice is an activity. A theory that refuses to concern itself with activity but nevertheless proposes to make use of its results must rest on the assumption that what happens during an activity does not matter to its results. It is therefore incompatible with any view which ascribes significance to states of mind and forms of actions" (Lachmann 1994: 224).

A similar view is reflected in Shackle's work:

> Economic choice does not consist in comparing the items in a list, known to be complete, of given fully specified rival and certainly attainable results. It consists in first creating, by conjecture and reasoned imagination on the basis of mere suggestion offered by visible or recorded circumstance, the things on which hope can be fixed. These things, at the time when they are available for choice, are thoughts and even figments" (Shackle 1972: 96).

The Austrian literature makes thus clear that in order to deal with the future, one needs an approach based in understanding and modes of analysis that acknowledge the role of imagination and even more, that are ready to also *apply* it. The Austrians offer insights not only on the way we understand social and economic order, i.e. the place ideas and imagination have in social order but also for the role of imagination in building the frameworks, concepts and arguments aimed at exploring that reality. Linking those insights to the scenario building method is just one easy step.

In no other area is that aspect more obvious than in the parallel ways the role of surprise and of the unexpected is dealt with in the scenario and Austrian literatures. Shackle's theoretical analysis of the role of "surprise" and Kahn's methodological treatment of "unlikely events" and "accidental developments" offer an excellent illustration in this respect. Consistent with the Austrian principles, Shackle's work on uncertainty focused on moving away from probability-based approaches to uncertain situations and moving towards more complex modes of behavior which include "potential surprise" (Shackle 1988, 1979). That concern of Austrian authors gets an echo in the work of scenario builders like Herman Kahn that repeatedly emphasized that the scenario builder shouldn't limit to the conventional, or probable situations and developments:

> History is likely to write scenarios that most observers would find implausible not only prospectively but sometimes, even in retrospect. Many sequences of events seem plausible now only because they have actually occurred; a man who knew no history might not believe any. Future events may not be drawn from the restricted list of those we have learned are possible; we should expect to go on being surprised (Kahn 1967: 264).

Kahn made out of surprise, unlikely events, accidental developments and the "cases that tend to be overlooked by the standard methods of studying these problems" a major element of his approach. That is why for Kahn a vibrant

imagination was as important as a good grasp on the facts of the matter. His conclusion that forecasting depends upon an understanding of the present and past, and it also involves the making of imaginative and analytical leaps converges thus in an unmistakable way with the Austrian vision on entrepreneurship, expectations and the role of imagination" (Kahn 1973: 104).

To sum up: from issues like the role of uncertainty and the limits of predictive models, to issues like imagination and the nature of choice, the role of understanding in social analysis and forecasting and the indeterminist model of universe, the scenario literature and the Austrian school make a common cause and an unified block against the mainstream approaches based on positivist social science assumptions. Moreover the scenario approach is consistently Austrian in the very way it operates. It is a method of dealing with mental models, ideas, knowledge and cognitive structures. It create alertness, flexibility and openness and it de-biases the decision maker. In other words, scenarios operate heuristically echoing the strongly psychological nature of the Austrian school: i.e. they are an operational method of dealing with mind, perceptions and their consequences in human action.

There are thus more than enough reasons to claim that the scenario method could be easily seen as an Austrian applied method challenging the mainstream planning approach based on predictions. On the one side, there are predictions based on the mainstream positivist methodology and as such built on explanations and formal models and quantification. On the other hand, scenarios, as the practical outcome of the Austrian vision, put their accent on understanding, applied logic and imagination. To conclude, the Austrian theory offers a cogent foundation to scenario building and scenario building seems one of the applied tools that smoothly and naturally emerges from the Austrian views.

Integrating Scenarios in the Austrian Tradition: Two Possible Directions

Given their inherent similarity, one could imagine multiple ways and directions the scenario method could be formally and explicitly grounded in the Austrian tradition. The last part of this paper will outline two of them, both anchored in the Austrian method of "imaginary constructs", i.e. the Austrians' propensity to use thought experiments for analytical and policy objectives.

Imaginary Constructs, Scenarios and Thought Experiments

The fact that the broad category of thought experiments (of which scenarios are a subclass) were frequently employed in science with great impact from Thales and Newton to Einstein and Mises not only provides a prima facie case for their epistemological value (Haggqvist 1991, Irvine 1991, Horowitz and Massey 1991) but also provides a clear demonstration of the operational similarity and the merits of scenarios. Building upon that operational similarity might prove a fruitful way of fully incorporating the scenarios into the Austrian approach.

Seen as experiments, scenarios are *thought* experiments, and as such they do not directly deal with the empirical reality. Therefore in order to identify the nature of the contribution scenarios and any "imaginary construct" approach have to the increase of the specific stock of knowledge related to the issue they are applied to, one has to look at the way new knowledge is produced through deductive arguments. While doing that it is necessary to keep in mind that an important part of the epistemic contribution of the Austrian school is defined in terms of its "method of imaginary constructions" based on imagination and deductive reasoning (Boettke and Prychitko 1994: 289).

In a deductive argument two premises with a known epistemic content are put together and lead in a necessary way in conclusion to a changed

epistemic situation. A new configuration of knowledge emerges out of the exercise in spite of the fact that no original empirical findings are involved. The mathematical argument leading to "mathematical discoveries" is an example of this broader cognitive pattern. When pieces of different knowledge are blended together and a new configuration of information and knowledge is created, that may bring important new information about the phenomena in question. When knowledge about events, actors and phenomena is combined using theories, laws or common and personal knowledge about regularities and linkages, the new configuration emerging out of the mental exercise is a contribution to the cognitive stock of the researcher involved in the exercise. The "new" element is conditional, not factual and empiric. However it allows reconfiguring information about actors and phenomena in ways that instruct about the situation in question. That in itself would be enough to legitimize scenarios as a viable epistemic procedure. However the epistemic force of scenarios has additional strengths.

Scenarios' value added involves not only the conclusions represented by the novel configuration of knowledge and its implications but also represent an exploratory analysis of the conditions on which the scenario is predicated. In this aspect they fully mirror the scientific thought experimentation meant as a contribution to the elaboration and refinement of theoretical models and that "involves decisions about what are appropriate idealizations and approximations to use" (Haggqvist 1996). The scenarios and the Austrian thought experiments do not simply and automatically employ narrative structures or conceptual frameworks as mere algorithms to be applied to a given set of data. Scenarios do not emerge directly and fluently from the mind of the scenarist. The cognitive process of the scenario analyst is a very complex back and forth between different premises, frameworks and data. Thought experiments derive their epistemic relevance from the fact that they constitute, in a sense, a simulation run on mental models of real-world situations (Jungerman 1985; Haggqvist 1996, Kahneman and Tversky 1982). If that is the case a comparison between computer simulations and the

special category of thought experiments called scenarios could be instructive in this respect. Similar to the simulations that explore properties of the theoretical model scenarios involve refinements of models and principles used to create them. The new knowledge that they provide involves increased understanding of the conditions under which the model holds. The basic notion is that the simulation methodology is not a mere application of a theoretical framework but also constitutes theory refinement. There is a back and forth movement in a simulation between the theoretical model and output. In a similar way, in scenarios there is a back and forth between on the one side, the "possible" events, and situations and on the other side, the models and hypotheses regarding their interrelationships and the dynamics of various processes that define those events and situations. The result is a more credible and realistic image that could undeniably be accounted as a cognitive contribution. Another way of describing the result is to say that the process is better bounding the future possibilities by refining the "theory" used to bound them (Shoemaker 1993).

In other words, rather than providing immediate insight into a problem area or create imagines of the future by pure imagination, scenarios involve a process of rational assessment. An increased understanding and knowledge are produced by the refinement implicit in the development of the scenario (Kahn 1967, Schwartz 1996; Chermack 2001, Martelli 2001, Mack 2001). This refinement, since it is itself based on explicit a*rgumentation*, is a rational process with a logical and empirical basis. The researcher involved in scenario development approaches the future with models and hypotheses about causal chains, relations, correlations, consequences, implications etc. An entire battery of theories, hypotheses and intuitions about how things are connected are employed explicitly and implicitly in scenario-building. A double refinement, of knowledge and of the framework structuring knowledge takes place. But that is precisely what is happening when an Austrian is developing an argument based on "the method of imaginary constructs".

Scenarios could be rooted into the Austrian core precisely because of this aspect of the Austrian school.

However, it is important to note that this emphasis on deduction should not overshadow the importance of data and their role. The more the scenario is grounded in reality before opening in different branches, the better the scenario is. In this respect the Austrian literature offers a second direction related to different from the method of imaginary constructs. This is a direction that is even more empirically oriented. This empirical and historical direction of the Austrian tradition has recently converged with a specific development that is related to the new institutional theory. Applying deductive reasoning to arguments with premises based on empirical data, the "analytic narratives" offer the second direction of convergence between the Austrian tradition and scenario building.

Analytic Narratives and Scenarios

The new approach was announced by a 1998 book *Analytic Narratives,* by Robert H. Bates, Avner Greif, Margaret Levi, Jean-Laurent Rosenthal, and Barry R. Weingast. The book defined a new line that bridged the gap between the game-theoretic and empirical approaches by advocating and applying a cross-disciplinary approach to strategic decision-making in history. By recapturing the historical dimension the new approach reintroduced real, historical time in the picture (Bates et. al, 1998b). The idea of a conceptually and theoretically informed narrative describing and at he same time analyzing a specific phenomenon is not new. In fact, many classical works in social sciences share the "analytical narrative" feature. The new approach inspired by the rational choice applications in the field of the new institutional theory and exemplified by the above-mentioned book edited by Bates et al., is characterized by the explicit and systematic use of rational choice and game theory to transform the narratives into analytic narratives

(Carpenter 2000, Parihk, 2000). Specific to them is that their chief focus is on choices and on the macro-level determinants and impacts of choice. By isolating and unpacking such mechanisms, analytic narratives contribute thus to structural accounts. Furthermore, and even more important, given their focus on micro-level decisions and on the role of intentions and choices of actors, an important specific feature of analytic narratives is the possibility opened up to understanding based interpretive social science, or *Verstheen*. The analysts place themselves in the context of historical actors and construct a framework of capacities and restraints, possibilities and impossibilities, incentives and disincentives, in which they acted, then build causal arguments based on the logic of the situation" (Bates 1998; Ostrom 1982).

Another crucial feature of analytic narratives in the light of their Austrian-scenarios link, is their underlying epistemology. Analytic narratives do not develop explanations by subsuming to covering laws or by engaging in hypothesis falsification as an end in itself. Therefore they break with the tradition of treating explanation and prediction as symmetrical phenomena, pivoting around the hypothesis testing process. It is worth stressing that this type of approach clearly departs from the conventional epistemology of hypothesis testing. As Bates put it "it is naive to believe that the answer lies in falsification. Even with explicit and logically rigorous accounts, multiple explanations will persist: they are observationally equivalent and we will not be able to choose among them" (Bates et. al 1998b).

As a consequence, the construction of an analytic narrative is an iterative process; between models and data, between cases and interpretations, between levels of analysis, between alternative conceptualizations: "we move back and forth between interpretation and case materials, modifying the explanation in light of the data, which itself is viewed in new ways, given our evolving understanding" (Bates 1998). The goal is to locate and trace the specific processes that generate the situation of interest, to convert descriptive historical accounts into theoretically relevant

language and thus to give an account for processes and outcomes by identifying and exploring the mechanism and conditions that generate them. The emphasis lays on the configuration of factors, causes and intentions and on the specifics of a time and place.

It is important to note that at a deeper epistemological level the analytical narratives approach is the expression of a particular conceptualization of the relation between narration and explanation. In this view, both narration and explanation are faces of the same *understanding* process. The goal is not to reduce the explanatory structure to specific models but to use both moving between the ideographic and nomothetic levels while using a complex array of research methods and techniques ranging from decision theory to intellectual history, and hermeneutics. The overall result is that the new approach generates a broader and more complex understanding process than the mechanical application of an explanatory model. There is no surprise that due to its features, the analytic narratives approach has become of special interest to Austrian authors. In fact, many Austrian contributions have always been of an analytic narratives form.

Actually in the last couple of decades the Austrian School has produced an entire literature built around the key concepts of "narrative", "interpretation" and "storytelling". Having the main source in the work of Don Lavoie (1991) and inspired by D. McCloskey's (1990, 1998) criticism of the mainstream's epistemology and methodology, this fresh development in the Austrian tradition has repositioned hermeneutics at the core of the analytical effort and produced not only a series of methodological and theoretical contributions but also a consistent set of empirical applications. This literature pre-dates the more salient rational choice analytical narratives and in a sense represents a bolder and more consistent introduction of the narrative and interpretive element via "thick descriptions" as complements of the "stylized facts" (Boettke and Prytchiko 1994).

Therefore it should not be a surprise that one of the most striking aspects of scenarios and of the "analytic narratives" (both in the rational

choice and the hermeneutic versions) is their structural similarity. Both of them are a combination of narrative and analytic elements. While scenarios take complex elements and weave them into a story that is coherent, systematic, comprehensive and plausible (Coates 2000; Chermak et al 2001), analytical narrative have basically the same approach and objective. Both are devices for ordering perceptions about developments in time. Both are designed to shape understanding through use of narrative stories to illustrate and illuminate interrelationships among actors and among organizations and institutions. Both use conceptual structures, theories and frameworks to develop explicit and formal lines of analysis but they also pay attention to chronology, context and (potential) accidental evolutions. Furthermore both display the consequences of a particular choice or set of choices. In scenario building a crucial choice and its consequences are integrated into a story about some future state of affairs (Kahn 1960, Schwartz 1996, der Heijden 1997). In an analytical narrative a coherent account is given by the past consequences of a past choice or set of choices. The sole real difference between the two is that scenarios are stories or models of future developments while the analytical narratives are past oriented. While the rational choice analytic narrative or the Austrian "thick description" based interpretation are retro-dictions the scenario is future oriented.

Thus analytical narratives and scenarios are operationally identical: descriptions of a past/future situation together with the progression of events leading from the base situation to the situation in question. The sole difference is time orientation: future oriented vs. past oriented. Crucial to both of them is that the set of events they narrate displays a certain consistency (Bates 1998b, Coates 2000, Schwartz 1996, Martelli 2001). In order to make a scenario or an analytic narrative plausible, their logic and the rationale should be articulated in a coherent way: how the elements fit together, what are the potential causal connections between them, what are the forces that set the processes into motion, need to be spelled out as clear as possible.

Coherence and consistency are thus essential for an analytical narrative and a scenario. There are many areas in which analytical narratives have to learn from the practice of scenario building and there are many things scenario building has to learn from the development of analytical narratives. But both could undoubtedly use more complex Austrian models of human action and Austrian insights into social order and processes. The deep operational and structural similarity between them allows a smooth transfer, indeed. The Austrian theory could thus be seen as both an organization principle that helps systematize the data and as a mechanism of development of theories and hypothesis structuring the analytical narrative or scenario. The basic rational choice analytical narrative creates a scenario in which actors formally constructed, interact in a specific environment whose features are explicitly defined and generate specific outcomes as a result of their interactions, outcomes that at their turn could be both formally and historically described. As such it functions pretty much like a system within which once specific conditions (descriptions) of a subset are introduced, the configuration of other subsets could be deduced following a given logic or algorithm.

The "Austrian" analytic narratives could go beyond the limits of the standard approach. Various degrees and forms of uncertainty and individual and local knowledge could be postulated. The same is true for the description of the environment. Once the relevant features of the actors and environment are described in richer and more realistic terms, the next step is to run the "mental simulation" letting the actors interact in the environment. The nature of interaction and the outcomes depend on how the actor and environment were described and a realistic and practical description is indeed crucial. In this respect the empirical and historical work that has already been done in the Austrian tradition is a very compelling reference point. Emily Chamlee-Wright's (1997) work on female entrepreneurship in Zimbabwe and Ghana, Storr's (2002) work on Caribbean entrepreneurial culture, Boettke's (1993, 2001) work of the transition, Stringham's (2002)

work on the evolution of European stock exchanges, Coyne's (2005) work on post-war reconstruction, are efforts inspired by a desire to create rich thickly described histories and analytical narratives guided by Austrian insights. As such they could offer a model for future oriented extensions on comparable topics or domains.

Given this robust track record it is clear that there is no structural barrier against the systematic employment of the Austrian logic to scenarios development as there is no structural barrier in applying it to analytical narratives. If we accept with Godet (1989) that there are two very different categories of scenarios: situational scenarios or images (the description of future situations), and developmental scenarios (a continuous film of the development of a system) then the Austrian analytical narratives might offer an excellent method of building developmental scenarios. This approach may allow analyzing the decision points as processes pivoting on individual or collective decisions shaped by and shaping an entire set of social, cultural, institutional, technological parameters. That may allow the employment of various decision models, leading to a rigorous way of scenario building following the micro (decision) –macro (structural) link in a systemic way. Moreover that would be constructed on a well grounded epistemological foundation. A logic, vision and model that acknowledge and understand the role of uncertainty and introduce the role of imagination and constructive rationality in decision making are a clear improvement both in terms of coherence and realism. The final result could thus claim not only a convincing approach to reality but also a strong theoretical backing. And as such will offer additional arguments for its adoption in practice.

Conclusions

The intrinsic link between Austrian theory and scenarios is manifest not only at the level of basic epistemological principles but also at the applied level. In fact the scenario method could easily be embraced as a part of the

Austrian family of ideas and more precisely as one of the key policy applications or decision support tools informed by that school of thought. Blending explicitly and systematically the scenario method with the Austrian ideas and forcefully making the case for the scenario approach as a policy and business administration tool is thus one of the most effective ways of reasserting the importance of Austrian insights in areas such as business studies, public policy and organizational theory, areas that currently have a very limited exposure to Austrian ideas. Establishing a credible and sustainable presence in those domains would be a first step in a broader strategy that would continue with a more aggressive development of insights and tools aimed at precisely the practical concerns of the policy and management practitioners.

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