

Path Dependence, Path Breaking, and Path Creation: A Theoretical Scaffolding for Futures Studies?*

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In many academic disciplines, descriptive, theoretical/explanatory, practical, and sometimes self-reflective objectives can usually be distinguished. Futures studies aim at exploring and explaining possible, probable, preferable and preventable futures, as well as shaping a desirable future (Amara 1981; Bell, 2003; Bell & Olick, 1989; Masini, 2001; Toffler, 1978). Futures research methods lead to one or alternate futures which can be described (e.g. the scenario method). When scenarios are presented, this necessarily is – at least implicitly – based on a notion of *how* these evolve. This directly corresponds to the *theoretical* objective. It certainly is not only important to present alternate images of the future, but also to deliver an explanation of the path that leads to specific futures (de Jouvenel, 2000, p.63).

While the description of a future state corresponds to a *point in time*, the explanation of its formation involves a *space of time*. For many scholars, taking a look at this timeframe and theorizing what is happening within it is regarded as an important or even the main sphere of interest in futures studies (e.g. Amara, 1978; Marien, 2002; Masini, 2001).

We need *theories of future genesis* to achieve this objective. These should be mid-range theories which are neither too general so that they can deliver more than just unspecific findings, nor should they be useful only to specific cases so that no generalization is possible. Theories can focus on the macro level (e.g. societies, nations, etc.) or the meso level (e.g. organizations or institutions).¹ The micro level, i.e. the individual, is typically of less interest for futures studies.

In the futures studies literature, many prolific attempts for a theoretical scaffolding of future genesis can be found. For example, the work on macrohistory of Galtung & Inayatullah (1997) and Inayatullah (1999) uses historiographically informed theories as a basis for understanding the development of alternative futures. Hines (2003) incorporates integral studies in the futures field. Peck (2009) focuses on theories of change in natural sciences and psychology and applies them to futures studies. Molitor (1977 & 2010) develops an s-curve model for public-policy changes that helps to

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understand and anticipate major political developments for the forthcoming ten years. So-called world models such as the WORLD3 model (Meadows et al., 1972), the model by Mesarovic & Pestel (1974) (both reported to the Club of Rome), the Bariloche model (Herrera et al., 1976), the UNO model (Leontief et al., 1977), and the MOIRA model (Linnemann et al., 1979) were very popular in the 1970's. They all were developed in a decade that was characterized by the fear that the social and economic world order could collapse without fundamental changes being made (Coyle, 1997). Variables like total population, pollution, or agricultural output were related to each other in mathematical equations. The advantage of this, but also a main point of criticism was the simplicity of these models. The WORLD1 model was programmed with 250 lines of syntax and could be calculated on a basic standard computer (Coyle, 1997).

Furthermore, there is quite a variety of theories of social and organizational change that could potentially be expanded upon for the purpose of explaining future developments. The theories of social or organizational change in Table 1 can potentially be developed further into theories of future genesis. The list of theories does not claim completeness. The theories differ in their explanatory objective. Some of them explain specific developments at specific times (e.g. Liquid Modernity, Reflexive Modernization), while most of them theorize change in general. Some of the latter focus on drivers of change, some on the processes which lead to change.

Table 1.
Theories of Social and Organizational Change as Potential Theories of Future Genesis

Theory of Social Change / Future Genesis	Main Contributor(s)
Liquid Modernity	Zygmunt Bauman, 2000
Reflexive Modernization	Ulrich Beck; Anthony Giddens; & Scott Lash, 1994
Symbolic Interactionism	Herbert Blumer, 1969
Theory of Practice	Pierre Bourdieu, 1977
Theory of Collective Actors	James S. Coleman, 1990
Path Dependence Theory	Paul A. David, 1985; W. Brian Arthur, 1989
Civilizing Process Theory	Norbert Elias 1969, 1982
Active Society	Amitai Etzioni, 1968
Theory of Structuration	Anthony Giddens, 1986
Theory of Communicative Action	Jürgen Habermas, 1981
Systems Theory	Niklas Luhmann, 1996
Theory of (Technologically Induced) Social Change	William Fielding Ogburn, 1922
Structural Functionalism	Talcott Parsons, 1951
Elite Social Cycle	Vilfredo Pareto, 1935
etc.	

Theory of Organizational Change / Future Genesis	Main Contributor(s)
Organizational Learning	Chris Argyris & Donald Schön, 1978; Peter M. Senge, 1990; et al.
Micropolitics	Tom Burns, 1961; Michel Crozier & Erhard Friedberg, 1977; et al.
Transorganizational Development	Samuel Culbert et al., 1972; Thomas G. Cummings, 1984
Path Dependence Theory; Path Creation	Paul A. David, 1985; W. Brian Arthur, 1989; Raghuram Garud & Peter Karnøe, 2001
Cybernetic Models	div.
Lifecycle Models	div.
Structural Network Analysis	div.
Theory of Structuration	Anthony Giddens, 1986
IMP ² -Business Networks	Håkan Håkansson (Ed.) (1987)
Population Ecology Approach	Michael T. Hannan & John H. Freeman, 1977; Bill McKelvey & Howard E. Aldrich, 1983
Coevolution	Arie Y. Lewin; Chris P. Long; & Timothy N. Carroll, 1999; Bill McKelvey, 1997
Dynamic Capabilities Approach	David J. Teece; Gary Pisano; & Amy Shuen, 1997; Kathleen M. Eisenhart & Jeffrey A. Martin, 2000
Organization Development	Kurt Lewin, 1958; et al.
Resource Dependence Theory	Jeffrey Pfeffer & Gerald R. Salancik, 1978
etc.	

From this variety of theories, there are a couple of reasons to choose path dependence, path breaking, and path creation to evaluate if these could be used as theories of future genesis.

First, path theories deliver "a powerful perspective being used increasingly to explain the emergence of novelty" (Garud & Karnøe, 2001, p.5). So they are well established and deal with the questions as to "why change occurs and why it does not" (Håkansson & Lundren, 1997, S. 119).

Second, path theories are *universal* in regard to the *domain* of investigation. They can explain persistence and change of technologies, as well as social institutions and organizations³ of all kinds (profit, non-profit, governmental, non-governmental). This also makes them very suitable for futures studies dealing with all cultural objects (Bell, 2003; Flechtheim, 1970; Schischkoff, 1969).

Third, path theories are not specific to a *period of time*. They work for pre-modern, modern, and postmodern times alike. They can therefore also be used for future times. Fourth, path theories are founded on the idea that *history matters*:⁴ "A history which leaves its mark on the present frames a future that cannot shake loose from the past. What is holding them back – and also pushing them forth – is the inertia of past achievements." (Håkansson & Lundren, 1997, p.123). The idea that a futurist should also look back is broadly shared by scholars in the futures field (e.g. Heilbroner, 1960; Galtung & Inayatullah, 1997; Inayatullah, 1999; Kaivo-oja et al., 2004; Rescher, 1998; Wagar, 1993).⁵ They argue that future developments cannot be conceptualized without having history in mind.

Finally, and most importantly, the path theories cover views that are particularly interesting for futures studies as they deal both with the exogenously driven evolution and the endogenous changing and shaping of paths which also apply to the evolution of the future

In this JFS special edition, the authors try to connect path theories to futures studies in different ways.

Victor Tiberius discusses path dependence theory, path breaking, and path creation from the point of view of futures studies. He distinguishes the both contingent and deterministic view of path dependence theory from the voluntaristic perspective taken by path breaking and path creation. By contrasting these theories, and based on the idea of restrictive indeterminism, a midway approach called *planned path emergence* is suggested as a realistic view.

Marc R. H. Roedenbeck begins with the argument that many contributions to path dependence research at the social level are interwoven with individual behavior, but researchers seldom provide a detailed understanding of the individual and interdependency with the social domain. In reference to this deficit and based on methodological individualism, the author aims at developing a model that describes individual path dependency and shows how individual path dependent behavior leads to social processes and lock-ins. The author argues that the analysis of path dependence at the social level needs to be based on an understanding of individual path dependent behavior.

Udo Staber adopts an interesting and innovative combination of path dependence, cognitive-evolution, and narrative perspective on organizational culture. As the author shows, the evolution of cultures is not only path dependent, but also includes the possibility of creating new cultures. The author illustrates his findings with a case study.

Gerd Schickstock concentrates on the transformation of paths at the national level. Path dependency theory explains organizational, institutional, and political change processes mainly from a techno-economic view. The main argument here is that historic events in the past determine future paths. However, these developments are often inefficient. On this basis, it is hard to explain how completely new paths actually evolve. His article therefore focuses on the creation of new and more preferable paths in the future. It adds the key role of agency to the concept of path dependency to enhance the understanding of path creation.

Nina Kolleck, Gerhard de Haan, and Robert Fischbach apply the path creation view on Education for Sustainable Development (ESD). ESD tries to improve sustainable behavior through educational means. Current generations have faced ecological problems, but have not essentially learned how to act in a sustainable manner. Thus, ESD is an important attempt to change this for young and future generations. The authors discuss how to improve ESD itself with social networks. Implementing sustainable development and ESD in society is seen as a process of path creation.

Finally, Tamás Gáspár views path dependency and path creation in a strategic perspective in which both concepts are interpreted as dialectically intertwined. He especially focuses on different time frames and transfers his findings to national and regional planning activities.

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