Innovation Traps:

Risks and Challenges in Thinking About Innovation

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Introduction

This paper highlights three kinds of traps innovators face in thinking about and implementing innovations–at the level of theories, at the level of thinking, and at the level of practice. Conceptualizing innovation is bounded by many of the same problems that bracket thinking about any other social activity. It also confronts some unique challenges. This essay starts by examining a framework for thinking about social activity that demonstrates there are more ways of looking at innovation than those predominant in North American thinking today. Next, the paper addresses potential fallacies into which people can fall thinking generally and in thinking about social activities. It concludes by discussing innovation biases, problems and dilemmas faced by researchers conducting studies about the practice of innovation and public servants contemplating the concrete decision whether or not to introduce an innovation.

Trap No. 1: "There is One Best Way to Think About Innovation": Thinking Paradigms

> All approaches to the study of society are located in a frame of reference of one kind or another. Different theories tend to reflect different perspectives, issues and problems worthy of study, and are generally based upon a whole set of assumptions which reflect a particular view of the nature of the subject under investigation. (Burrell and Morgan, 1979: 10)

My previous work (Glor, 2000, 2002) has assessed the benefits and problems associated with thinking about innovation in two different ways–as voluntary and determined (definitions used in this paper are summarized in Appendix I). There are numerous other possible frameworks within which to consider innovation: Burrell and Morgan (1979) have identified paradigms[1] for the study of sociology, and Alvesson and Wilmott (1996) have applied Burrell and Morgan's framework to management.

Sociological Paradigms.

Sociology is the study of the nature, (origin) and development of human society and community life (Thorndike Barnhart Dictionary). Burrell and Morgan (1979) identified two types of sociology–the sociology of regulation and the sociology of radical change. When these two types are plotted against objective and subjective approaches to community life, four sociological paradigms are produced. Innovation, because it usually involves people working together, not alone, can be thought about with sociological concepts. Incremental and transformational innovation could be considered parallels in the study of innovation to regulation and radical change

[1] Burrell and Morgan do not use the term *paradigm* in as broad a way as does Thomas Kuhn. Still, they do use it in the sense of ways of thinking about sociology that are fundamentally different.

in sociology. Burrell and Morgan categorize the functionalist sociology and interpretive sociology quadrants together as the sociology of regulation. The subject matter of functionalist sociology is more objective, interpretive sociology more subjective. The alternative to the sociology of regulation is the sociology of radical change. Rather than forces of continuity and integration, that are emphasized in regulatory theories, theories of radical change assume that social relations are conditioned more by contradictory pressures for transformation (Alvesson and Willmott, 1996: 52-60). Within the sociology of radical change, the subject matter of the radical structuralist paradigm is more objective, while the subject matter of the radical humanist paradigm is more subjective.

According to Burrell and Morgan, objectivism and social system theory are part of the same paradigm (quadrant in their model). They are both *objective* ways of thinking about regulation. Reductionism and voluntarism, as I have spoken of them in my work (2000), are forms of objectivism. A main basis for whole systems and deterministic approaches to innovation (Glor, 2000) is systems theory. *Social systems theory* was originated by Talcott Parsons (1951). Objectivism and social system theory have been the two predominant methods for studying innovation during the twentieth century. Voluntaristic and deterministic approaches, are thus both part of Burrell and Morgan's paradigm of *functionalist sociology*, a sociology that has developed as a branch of natural science. Although elements of this approach can be traced back to the Greeks, such modern authors as August Compte considered the study groups within the necessary, indispensable and inevitable course of history. Because objectivism and social system theory have been the dominant functionalist approaches, functionalism has also been the principal mode for thinking about innovation during the modern era. Burrell and Morgan's four sociological paradigms and their plotting of fourteen theories within the paradigms are shown in Table 1.

Table 1: Sociological Paradigms

Sociology of *Radical Change*

Radical Humanism Anarchic Individualism French Existentialism Critical Theory	*Radical Structuralism* Contemporary Mediterranean Marxism Russian Social Theory Conflict theory
Interpretive sociology Pheno-menology Hermeneutics Phenomen-ological Sociology	*Functionalist sociology* Integrative Theory Social System Theory Objectivism Interactionism and social action theory

Subjective — *Objective*

Sociology of *Regulation*

Source: Burrell and Morgan

organ. 1979. *The four sociological paradigms*, p. 29. The approaches to change are positioned spatially in this table.

Many theories can usefully expand our understanding of social behaviour and innovation. There are additional functionalist ways to think about innovation, for example, including the action frame of reference, theories of bureaucratic dysfunction, and pluralist theory. Likewise, each of the three other paradigms offer several theories, different from the dominant functionalist approaches, to think about innovation.

While Burrell and Morgan (1979: 29) identified fourteen sociological theories, global approaches to understanding group activity, Alvesson and Willmott added two additional ones that Burrell and Morgan missed, feminism and labour process theory. While it is not possible to examine all of these approaches here, it is important to flag that they exist. Among them, critical theory is of particular interest and potential value for innovation, because of its capacity for helping the observer to see innovation in new ways.

Critical Theory

One of the values of considering a theory for thinking about innovation that lies outside the two paradigms of the sociology of regulation, and instead in the sociology of radical change, is that doing so helps us to see that there is a sociology of regulation, and that innovation is usually thought about within that framework. The chief function of the regulatory approaches is to maintain the social system in balance. Change in this context is primarily incremental and only transformational when the system is in crisis. Theories of sociology that examine fundamental change, on the other hand, serve the function of making it possible to see that transformational change is possible and has occurred. They also allow the impacts of that change to be seen in a more positive light. Critical theories of change, according Alvesson and Wilmott, are part of the radical humanism paradigm, in the same quadrant as French existentialism, anarchic individualism, and (to some extent) solipsism, the most subjective theory. They are in a different quadrant from contemporary Mediterranean Marxism, Russian social theory, and conflict theory, that are part of radical structuralist approaches, the other paradigm of the sociology of radical change. Like radical humanism, radical structuralism is a separate paradigm, and a different sociology, from interpretive sociology and functionalist sociology.

Critical theory is based on a concern to develop a more rational, enlightened society by using a process of critical reflection upon the organization and the effectiveness of existing institutions and ideologies. Encompassing considerable diversity, critical theory is integrated around a desire to mobilize critical reasoning to question and transform oppressive features of society through a non-authoritarian and non-bureaucratic politics. Without expecting to escape the conditioning of current relations of power, critical theory looks to the possibility of subjecting current dogmas to critical scrutiny and opening up a space for emancipatory change (Agger, 1998). Critical theory's most sustained criticism is of positivism.

Just as thinking paradigms can stand in the way of thinking broadly and openly about innovation, so fallacies can interfere with thinking clearly.

Trap No. 2: "I Am Equipped to Think About Innovation": Thinking Fallacies

Fallacies develop both in thinking generally and in thinking about culture specifically.

Logical Fallacies

Thinking helps to reveal what we are doing, how we are doing it, and most important of all, what we are not doing and what we are not thinking. Thinking should help an innovator to understand the innovations being created and the results being achieved more clearly, that is, more accurately. It should also help innovators to see the mistakes they could be making. We are all at risk of falling victim to logical fallacies, but none more so than those who are treading unknown terrain while being passionately committed to a certain outcome. Innovators therefore need the benefit of clear thinking rather than wishful thinking. Innovators must know what is true and be able to demonstrate that they are in a position to know it is true. Not only that, but for innovators to claim knowledge without ensuring they are in a position to know may prejudice their claim to both sincerity and ingenuousness (Flew, 1975: 114-5) and damage the opportunity for other innovators to try out their ideas. The logical innovator's objectives are outlined in the box (Flew, 1975).

The Logical Innovator's Challenges
To avoid:

- The argument that if I cannot do every-thing, then I cannot and I am not obliged to do anything.

The Logical Innovator's Objectives

- To be logical and factual and thus show personal integrity.
- To avoid falsification:
  - Assuring arguments are deductively valid, that the conclusions drawn can be concluded from the premises.
  - Being clear about relations & lack of relations between validity and truth.
- To notice what is presupposed (the fallacy of many questions)
- To use the correct contrast

Source: Flew, 1975

- Striving after perfection in the belief it can be achieved
- Equivocation (having to do with meaning, truth)
- Self-deceit through covert shifts between substantial and tautological interpretations of words
- Self-contradiction (concerns validity). If tolerated, then literally, anything goes.
- Accepting that the antecedents of something must be the same as its fulfillment (The Genetic Fallacy)
- Asserting that differences of degree cannot become differences of kind (The Black is White Slide)
- Putting falsely positive/negative faces on things
  - accentuating the positive/negative
  - putting false faces on quantities e.g. % of what, watching the mathematical properties of percentages, pictorial presentations (area vs. volume), distinguishing cause and effect

Source: Flew, 1975

Some key logical challenges are outlined in the next box. They help identify where possible self-deceiving fallacies lie waitin7g for innovators, to damage their motivation and integrity. What is required to deal with these is "an unspecialized critical alertness"–again, the potential benefit of critical theory is highlighted.

If we claim, for example, that the private sector is better at providing services than the public sector, or that the public service should provide them, we will want to ask ourselves some questions: (1) Is there a logical connection between the action and the supposed outcome, i.e. is it likely to matter which sector delivers the service? (2) What does *better* mean in this situation? Does it mean cheaper? More friendly? More effortful? More effective? More broad-based? With what portion of and which clients? With fewer mistakes? That makes for a better world? That increases the values and the objectives we believe in? If the purpose is to remake the world according to our values and objectives, what are they? To reduce the public sector or to increase the private sector by privatizing more government services? If so, why? To assure people are treated equitably in the workplace? To increase equality? If so, at what cost? (3) If the objective is to save money, how is the saving to be accomplished? And at whose cost? If the private company reduces employees' salaries, thus causing employees to become poorer and also to moonlight, this solution could have negative impacts on the employees' well-being and family life. Is this an acceptable means and outcome? If instead the saving is attempted by reorganizing work processes and purchasing new equipment, it might be possible to save money without causing the same negative consequences for employees. Is this is an acceptable means and end? Whether we have accomplished the objective of saving money will require monitoring and evaluation that gets at the objectives and issues effectively. How often do we do this?

Logic equips us with some rules about whether what we claim to know is valid. To benefit from logic, those responsible for innovations in policies, programs and administration must set clear objectives, monitor actual results of implementation, and change course if necessary, based on knowledge secured. Otherwise, it will become clear that the objective was not to meet the

objectives of the policy or program, but something else. Programs of wholesale and especially programs of essentially irreversible social change such as privatization and devolution make it more difficult or even impossible to determine whether the objectives have been achieved. Changing how the books are kept can do the same thing. While rational methods and approaches provide no guarantee of results, these methods can help innovators to maintain personal integrity and to avoid human fallibility. (Flew, 1975: 115-8). Having considered some strengths and limitations of paradigms and logic, let us now consider Geertz' fallacies in thinking about human culture.

Cultural Fallacies

The relationships within organizations that guide innovation are understood many ways. Clifford Geertz (1973:10) has described most approaches to understanding culture in use today as fallacies. The same criticism can also be applied to innovation. Geertz identified the errors as follows:

- To get caught up in the claim that culture is either subjective or objective patterned conduct or even the two mixed together, *the subjectivism or objectivism fallacy.*
- To treat culture as "a self-contained 'super-organic' reality with forces and purposes of its own," to reify it, *the idealist fallacy*.
- To claim that culture consists in the "brute pattern of behavioral events we observe in fact to occur in some identifiable community or other," to reduce it, *the behaviorist fallacy*.
- To hold that culture is "in the minds and hearts of men, ...composed of psychological structures by means of which individuals or groups of individuals guide their behavior" (in order to be acceptable to other members), *the structuralist fallacy*.
- To describe culture by writing out the rules, which leads to the creation of taxonomies, paradigms, tables and trees, *the cognitivist fallacy*.

Geertz suggested that "culture consists of socially established structures of meaning. His is a *phenomenological or privacy theory*. It is a semiotic (about symbols) concept of culture, culture as "interworked systems of construable signs." He said:

> Culture is not a power, something to which social events, behaviors, institutions, or processes can be causally attributed; it is a context, something within which they can be intelligibly ...described." (Geertz, 1973: 14)

The meaning of an activity "varies according to the pattern of life by which it is informed" (Geertz, 1973: 14). This approach sees things from the actor's point of view, not from that of an observer. Geertz emphasized that anthropology is interpretation, a second and third order interpretation, and that all interpretations are fictions, something made or fashioned.

Possible Fallacies in Understanding Innovation

The subjectivist fallacy
The objectivist fallacy
The idealist fallacy
The behaviourist fallacy
The structuralist fallacy
The cognitivist fallacy, and possibly even The phenomenological fallacy.

Based on this way of thinking, all problems that innovators identify and the innovations they suggest to solve problems are the result of and are subject to interpretation. As a consequence, innovators must make their own judgments about the culture within which they are working and the motivation of the individuals with whom they are working. The lesson to be learned, if there is one, is to be conscious, pay attention, observe, ask what else might explain what is being observed. It is possible to be wrong and there is no *one best way* if all *reality* is based on interpretations. Although it may seem so to each of us individually, reality is not one thing.

One of the most interesting aspects of Geertz' fallacies and choice of a phenomenological theory is that they were reflected in the thinking paradigms and theories identified by Burrell and Morgan (Trap No. 1). Geertz thus demonstrates the benefits of being aware of the various theories for thinking about people. Burrell and Morgan would not, of course, agree that all the other theories except phenomenological sociology are fallacies.

Having touched on paradigms and fallacies as risks for thinking about innovation at a broad level, let us now concentrate our discussion at the level of practice.

Trap No. 3: "Just Do It!": Practice Biases and Dilemmas

Moving into the realm of practice, we are now ready to discuss biases, problems and dilemmas that are specific to innovation. This section examines the causes of, and suggests some possible strategies for overcoming, four innovation biases and problems identified by Everett Rogers (1995), and recognizes ten innovator's dilemmas as identified by Behn (1997).

Innovation Biases and Problems

Biases perform a function. They are simplifying suppositions (using a reductionist approach) about complex reality. In the innovation research and development field, four biases and problems are particularly blinding: the pro-innovation bias, the individual-blame bias, recall problems, and the tendency toward inequality (Rogers, 1995: 30-31, 125-129, 208-250, 405-440).

The pro-innovation bias is the implication in diffusion research that an innovation should be diffused and adopted by all members of a social system, that it should be diffused more rapidly, and that the innovation should be neither re-invented nor rejected. Rogers, 1995: 100

The pro-innovation bias (see box) is seldom recognized and is therefore both troublesome and potentially dangerous. The bias leads to the neglect as a subject of attention and research of ignorance of innovation, rejection of innovation, discontinuance of innovation, re-invention, and anti-diffusion programs meant to prevent the diffusion of bad innovations such as smoking or crack

cocaine. The pro-innovation bias has developed for several reasons: (1) One of the early innovations studied, hybrid corn, had a high relative advantage. Most innovations do not have this kind of advantage, and many people, for their own good, should not adopt them. (2) Much innovation research is funded by change agencies. Their pro-innovation bias is often accepted by the researchers they sponsor. (3) Innovations that diffuse leave a trail that can be studied; rejected or discontinued innovations do not. It is harder to find them, and people are less willing to talk about them.[2] As a result of the pro-innovation bias, we fail to learn about important aspects of innovation, and what we do learn is unnecessarily limited. Consequently, we know a great deal more about innovations that diffuse quickly than about innovations that diffuse slowly, about adoption than about rejection, and about continued use than about discontinuance. In other words, we know about and acknowledge more innovation successes than failures.

Some strategies for overcoming the innovation bias include: (1) Rather than after-the fact data gathering, conducting diffusion studies while the diffusion is underway. (2) Taking care in questioning and selecting examples. One approach would be to select both successfully and unsuccessfully diffused innovations. (3) Understanding the point of view of the individual adopter, her perceptions of the innovation and her own situation, problems and needs. Reinvention should be recognized as a way to adapt the innovation to local needs (more on this in the next section). (4) Recognizing the broader context in which the innovation is diffusing. (5) Appreciating the motivations for adopting an innovation. Asking why. Some adopters may not be able to say why, and others may be unwilling to do so. This needs to be probed in depth. Decisions are based on perceptions–this is why the challenge factor is important in the framework for patterns I developed (2001a, 2001b). (6) Avoiding overly rationalistic approaches, and asking instead whether the innovation bias is in play. (Rogers, 1995: 100-114)

The individual-blame bias takes the perspective of the promoters rather than that of the adopters of innovation. The study of innovation as it developed early in the 20th century could have been called problem-solving or innovation-seeking or evaluation of innovations. Instead it was called diffusion of innovation. Often studies of innovation were funded by those who would benefit from their being adopted, like suppliers. This led to i*ndividual-blame* rather than *system-blame* for lack of adoption. Sometimes a social problem is caused by individuals. More often, the causes lie in the larger system of which the individual is a part. When this is the case, individual-level interventions will not be effective. The opposite is of course also true: if the causes lie with individuals, system-level interventions will not be effective.

> The *individual blame bias* is a tendency for diffusion research to side with the change agencies that promote innovations rather than with the individuals who are potential adopters. *System-blame* is the tendency to hold a system responsible for the problems of individual members of the system. (Rogers, 1995: 114-5)

[2] I face the same problem in seeking topics for the Innovation Salon and The Innovation Journal (www.innovation.cc).

Individual-blame often leads to definition of success factors for an innovation that focus on the success or failure of the individual within the system rather than the success or failure of the system. Indicators like formal education, size of operation, income, and mass media exposure tend to individual-blame, while measures like change agent contact with clients and financial assistance tend to system-blame. Rarely is the source or channel of innovations studied for whether it provided adequate information, promoted appropriate or inappropriate innovations, or failed to contact less-powerful members of the audience. Late adopters and laggards are most likely to be individually blamed for adopting late or not at all, and for not following the experts' recommendations.

Some reasons for individual-blame include: (1) proponents, champions, or researchers accept a definition of the problem from the sponsors, (2) a feeling of powerlessness in relation to the system, and a feeling that it is easier to influence individuals, (3) individuals are often more accessible than are systems, and research tools and experts often focus on individuals. (4) neglect of the individual's network as an element of study. Even when the individual is the unit of response, network relationships can be the unit of analysis. Communication network analysis is a tool for this approach. Adopters can be asked: From whom did you obtain information that led you to adopt the innovation?

Efforts to overcome the individual-blame bias could include: (1) Using alternatives to individuals as units of analysis. (2) Keeping an open mind about the causes of a problem, at least until exploratory data is available, and guarding against change agencies' definitions of problems. (3) Involving all the participants, including potential adopters, in defining the problem, rather than just those seeking amelioration of the problem initially. (4) Including social and communication structural variables, as well as intra-individual variables. Ask: who owns and controls (a) the research and development system, (b) the communication system that diffuses information about the innovation, and (c) who will benefit from adoption of the innovation? (5) Be aware of the individual-blame bias, and the limitations of the psychological approach. (Rogers, 1995: 114-121)

The recall problem in innovation research presents special problems. Time is the enemy of recall, yet innovations diffuse through time. Most social science research ignores time, but not innovation diffusion research. People's ability to recall is not perfect, and gets worse over time. While much research takes a snapshot of innovation at one point in time, a more productive method for innovation is to create moving pictures of behaviour, that can trace sequential flows. Survey research, which is based on snapshot pictures, fails to capture the process involved. If data is only collected at one point in time, it is by necessity based on recall. Better ways to collect information about innovation include field experiments (experiments are conducted under real conditions, and before and after data is collected, usually by survey), panel studies over time, use of archival records, and case studies with data from several respondents. A real weakness of cross-sectional survey data is their inability to answer *why* questions. (Rogers, 1995: 121-125)

The inequality effect. According to Everett Rogers (1995: 125-129), diffusion researchers and innovation champions have tended to ignore the consequences of innovation, and in particular how the socioeconomic benefits of innovation are distributed within a system. When equality has been studied, researchers often found that diffusion of innovations widens the gap between higher

and lower status segments of a system, especially in Third World nations, creating the inequality effect.

Much diffusion research has occurred in the Third World. This research found that the classic diffusion model fit the dominant paradigm of development well. It had four steps: (1) economic growth through industrialization and urbanization, (2) capital-intensive, labour-saving technology, mostly transferred from industrialized nations, (3) centralized planning, chiefly by government economists and bankers, to speed up the development process, (4) built on the belief that the causes of underdevelopment lie chiefly within the developing nation, not in their trade and other external relationships with industrialized countries. This model has been revamped since the 1970s. Development is now generally defined as "a widely participatory process of social change in a society intended to bring about both social and material advancement (including greater equality, freedom, and other valued qualities) for the majority of people through their gaining greater control over their environment." (Rogers, 1995: 127) Greater concern with equality of benefits of development after the 1970s emphasized the priority of villagers and the urban poor. Women have also been a prioirity since the 1980s when it was realized that the technologies being introduced were increasing the subordination of women. The new policies are less elite-oriented and more concerned with equalizing the benefits of innovation

The way questions were asked in the past helped to enhance inequality. Previous research in third world nations asked such questions as: (1) how are technological innovations diffused in a social system? (2) what are the characteristics of innovators, early adopters and others? (3) what is the role of opinion leaders in the interpersonal networks through which new ideas diffuse? More appropriate questions were subsequently developed (see box). Exploring these important questions moves innovation in the direction of overcoming the inequality effect.

Diffusion agents tend to work with those who are easy to convince (who are ready) and who have the personal, social, and conceptual tools to use the innovation. This tends to be the better-off and better-educated. The pattern is especially marked in developing countries, and again tends to amplify inequality. Some research suggests that diffusion agents can use innovation to reduce inequality among the less well-off if they introduce innovations and communication strategies appropriate to their clientele.

Questions to Ask About Innovations

(1) What criteria guide the choice of innovations that are to be diffused? (a) the public welfare, (b) increased production of goods for export, (c) maintaining low prices for urban consumers, (d) increased profits?
(2) what influence does society's social structure have over individual innovation decisions?
(3) Are the technological innovations being diffused appropriate, well-proven, and adequate for the stage of socioeconomic development of the community or nation?
(4) What are the likely consequences of technological innovation in terms of (a) employment and unemployment, (b) migration
of rural people to cities, and (c) more equitable distribution of individual incomes?
(d) Will the innovation widen or narrow socioeconomic gaps?

The pro-innovation bias and reliance on correlational analysis of survey data often led researchers to ignore issues of causality, or to imply that factors such as large government that correlate with innovativeness also cause it (Rogers, 1995: 121-125). Identifying and exploring biases, assumptions about causality and the limitations of methods moves innovation practice and research in the direction of overcoming the pro-innovation bias, individual-blame assumptions, recall problem and inequality effect. While addressing paradigms, fallacies

and biases evaluates the broadest frameworks for thinking about innovation, problems do not lie only at these sweeping levels. It is now time to consider the challenge of ten dilemmas of innovation (Behn, 1997) that the individual faces in deciding whether or not to innovate.

Innovator's Dilemmas

Difficulties encountered in innovating are not just about narrow thinking, fallacies and biases. Especially in the public sector, but in the non-profit and private sectors as well, innovation conflicts with other values, and so is very much about choices. A public service innovator faces many challenges and dilemmas. Robert Behn (1997: 4-36) has described ten innovation dilemmas that stand in the way of innovation and that make it hard to think about innovation clearly (see box). Some of them overlap with challenges mentioned earlier in this paper, but most of them are new challenges. Dilemmas are faced at each stage of the innovation process.

Paradigm dilemmas. As discussed in the first section of this paper, mental models are limiting. They seriously constrain how creatively we can think about the role and activities of government. Leaders, staff, overseers and stakeholders have mental models. As mentioned earlier, the paradigms of the sociology of change and their theories offer some optional mental models for thinking about innovation.

Innovator's Dilemmas

- Paradigm dilemmas
- Fear of innovation
- The fire-fighting trap
- The routinization dilemma
- The scale dilemma
- The analytical dilemma
- Structural dilemmas
- Replication dilemmas
- Motivational dilemmas

Source: Behn, 1997

Fear of innovation. The belief that government needs more innovation is less a fact than a judgment. Some reasons to be afraid of innovation promoters were described in the former section of this paper, as were some ways to guard against these biases and problems.

The fire-fighting trap. Innovation is often driven by an urgent need to change, yet innovation is a long-term process. Innovation requires a long-term strategy but the organization must also manage its short-term crises.

Replication dilemmas. A replicator faces many dilemmas: what is the core innovation to copy? What are its essential components? Will it work in a new environment? When is the innovation ready to be disseminated? What has to be done to repeat the success of the initiator? In attempting to respond to this dilemma, a replicator must face the *adaptation dilemma*–faithful copying is silly, the innovation must be adapted to the new environment. But how? What should be changed? Also, according to the organizational-adaptation dilemma, the organization must adapt to the core features of the innovation. An organization is more likely to replicate an innovation "if its existing routines and culture mesh well with the practices and norms that make the innovation work." (Behn, 1997:29) On the other hand, if it meshes too well, little change will actually occur. Also, the organizations most in need of innovation are probably the ones least able to make the needed organizational adaptations. In this case the temptation will be to create a new organization, and bypass the existing one. As with the structural dilemmas (see below), this risks problems with institutionalization. The *dissemination dilemma* reflects the questions: what is to be disseminated,

and when? If the innovator is proceeding by groping along, the innovation may be constantly changing. If the innovation has not yet proven itself, it may be too soon. Interest from politicians and the media may actually short circuit the original innovation, as well as the disseminated one. Federal money, desirable as it is, can also interfere with development and dissemination, as it freezes certain approaches, target groups and methods into funding programs. Rapid diffusion can be a problem. The *definitional dilemma* is the risk faced by a replicator that the innovation will be copied too slavishly or that a funding agency or initiator will define the parameters too narrowly, thus discouraging adaptation and groping along. Replication involves two elements: identifying the true core of the innovation, and figuring out how to adapt the non-innovative features to fit the new environment.

The scale dilemma. How much should government improve its performance? Is it willing not only to build on and bolster current methods and dominant ideas and professions, or should it attempt to find new and better approaches that move outside current models, patterns and paradigms?

The analytical dilemma. How much analysis should go into designing an innovation? Experience with innovations suggests innovators act first, and modify as they go along, rather than considering their options at the beginning of the process. Innovators also tend to imitate other innovators rather than working carefully and in an original way through their own organizations' needs. What is the right balance between analysis and groping along? And how can it be balanced with timing, so that opportunities can be taken up?

Structural dilemmas. Innovations are not only constrained by mental and conceptual frameworks, but also by organizational frameworks. Innovations happen in specific organizations. The *organizational-diversity dilemma* highlights two countervailing tendencies: The more complex the task structure and incentive system in government, the greater the probability that members will conceive of and propose major innovations, but the smaller the proportion of major innovation proposals that will be adopted. Open, collegial and supportive agencies support development of ideas, but uniform, centralized organizations are better at overcoming the blockages to adoption and are more likely to successfully implement the innovation. Parallel processes, outside the normal management structure, can take the innovation forward somewhat, but are likely to run into problems during the institutionalization phase of the innovation. Using parallel processes too much can lead to the long-term demoralization of those working in the organization, who feel written-off and disempowered.

The federalism dilemma recognizes that in a federal system decentralization creates diversity and experimentation, but makes adoption of consistent, national programs very difficult (e.g. education), while centralized national policies constrain experimentation (e.g. health). The Medicaid Demonstration Project in Santa Barbara County, California, for example, required a federal waiver and much planning, as did the MinCom experiment in Manitoba, Canada.

The routinization dilemma. In order to rationalize the traditional concept of accountability to elected officials with the vagueness of their laws, government employs rule-based routinization. This approach supports the values of honesty, fairness (consistency), and efficiency, but the public

also values high performance, sympathetic responsiveness to the needs of individuals in particular circumstances, and adaptation to changing circumstances. These values are in conflict.

Motivational dilemmas may be the most important. Can–and should–legislators and executives attempt to increase motivation for innovation? The most obvious motivational problem is created by the *media dilemma*. The production biases of the media create a risk for all concerned if the media become interested in the innovation. Media criticism can be the end of an innovation and an innovator. At best, an innovator can attempt to present innovative policies in a palatable form for the media–simple, personal and symbolic. The *reward dilemma* is also important. Should managers offer financial, personal rewards, or merely symbolic, intrinsic rewards that allow the innovator to have a sense of self-accomplishment and recognition from peers? The *elected official dilemma* highlights how–and whether–an innovator can and should attempt to build political support for the innovation.

Accountability dilemmas. Innovation requires initiative, initiative creates dilemmas of accountability. While innovation requires autonomy, decentralization, risk-taking and un-programmed tasks, accountability requires predictability, standardization, replicability and stability. Because of this, innovators can border on making policy decisions without authority. Innovators working within rule-obsessed organizations, in particular, risk becoming outlaws–or guerrilla innovators–within the organization. *The failure dilemma* is based on the reality that many innovations fail. Neither playing fail-safe nor hiding failure makes for an organization that innovates. But who will be accountable for failure in the volcano that is government? *The customer dilemma* recognizes that placing more emphasis on internal customers (such as staff agencies serving line departments) places less focus on external customers and overseers. This is the conflict between line departments' mandate-driven needs and the public's interest in central control.

The innovator's dilemmas make clear that innovation in the public sector is a complex activity, requiring many careful judgments.

Conclusion

The challenges to thinking about innovation outlined in this paper are of course not exhaustive, but they point toward particular choice points that are and will be faced by innovators and those who study innovation. With considerable pitfalls to face, some would say it is a miracle innovators ever take action. While some innovators successfully ignore the pitfalls, these hazards are worth thinking about and innovators should consider how to deal with them. Without forethought, pioneers will be unsure of what the most important choices are, and when the innovation has been implemented, of what they have done and what has been accomplished. Without such attention, innovators can become captive of ideologues or bureaucrats, and fail to accomplish the objectives and support the values they favour.

The issues dealt with in this paper have flagged some important choices. Paradigms innovators use (often without realizing it), logical and cultural fallacies into which they fall, their biases in implementation and research, and unrecognized dilemmas can all contribute to the failure

of innovation. While these challenges may seem overpowering, knowledge provides equipment to recognize them, to avoid them if possible, and to take conscious decisions about the best course of action. The magnitude of these pitfalls may suggest a reason why, initially and at the various levels of approval, many public servants decide not to innovate and fail to innovate systematically. Of course, public servants may also be defending their current status and power, as many suggest.

But innovation is an important tool through which society and governments progress. Whether and how and who has made innovation acceptable, reduced the challenges, made innovation a function of government, and the domain of many (not all) public servants, and not just the ideas of the frustrated, young or foolish, are questions we will be examining at the Workshop on Public Sector Innovation. We will see if there hope for an alternate future.

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Appendix I: Definitions

Anarchic individualism advocates total individual freedom, untrammelled by external or internal regulation. It is associated with Max Stirner, a student of Hegel's. Freedom is that of the individual ego, not the human species. Hegel's concept of individual freedom within state control gives over to emancipation through removal of the state and its trappings.

Contemporary Mediterranean Marxism is in the tradition of Marx's mature works, especially *Capital* and Lenin's reading of it. Althusser's and Colletti's sociology fits within this stream. It rejects Hegelianized Marxism and orthodox Russian Marxism.

Conflict theory is the expression of radical Weberianism and utilizes a number of Marxian concepts. Both Rex's and Dehrendorf's conflict theories are included.

Critical Theory is built on the young Marx, according to Burrell and Morgan. It includes the work of the Frankfurt School, Lukacs, and Gramsci. CT functions at a philosophical, theoretical and practical level. It emphasizes the domination of technocratic thinking and practices, and the emasculation of critical thinking, autonomy, and democratic decisions.

Determinism, according to Brand Blanshard means "the view that every event *A* is so connected with a later event *B* that, given *A*, *B* must occur" (Blanshard, 1958). Determinism holds life is governed by determined factors, outside the control of those in government. At the determined end of the determined-voluntary axis, change is something that is determined primarily by outside forces, such as economics, environment and context.

Feminist theory explores domination in structural terms and makes the politics of sexuality, an issue typically ignored by male theorists. Domination is an issue central to understanding oppression. Feminism politicizes sexuality and domesticity, and connects domestic gender politics to gender politics in the paid work force and public life.

French existentialism derives from the work of Fichte and Husserl. Though related to phenomenology, it is different in the sense that the social construction of everyday life is considered pathological. It is humanist and promotes change in the social order.

Hermeneutics is concerned with understanding and interpreting products of the human mind that characterize social and cultural worlds. Ontologically, the proponents adopt an 'objective idealist' view of socio-cultural environments, seeing them as human constructs. Humans externalize the internal processes of their minds through cultural artefacts which then achieve an objective character.

Integrative Theory is Burrett and Morgan's term for theories that attempt to integrate elements of interactionism and social system theory. It is not a coherent theory, but Burrett and Morgan have included in this category Blau's exchange and power model, Mertonian theory of social and cultural structure, conflict functionalism (an attempt to integrate social change into functionalist thinking) and morphogenic systems theory (Buckley and the 'process model').

Interactionism fuses the biological models of the Anglo-French tradition with German idealism. Interactionism is based on Georg Simmel's favouring of the study of human association and interaction, thus rejecting a focus solely on individuals or society. George Herbert Mead is also considered an interactionist, or symbolic interactionist.

Interpretive sociology and philosophy attempts to describe explain the social world from the point of view of the actors immediately involved in the social process. Wilhelm Dilthey, Max Weber and Edmund Husserl have been especially influential.

Labour process theory, based on the work of Braverman (1974), analyzes management as a medium of control that secures the exploitation of labour by capital.

Objectivism is the view that there is an objective external world that exists in time and space and is real for all people. It refers to work with a high degree of commitment to models and methods derived from the natural sciences. Objectivists treat the social world as if as if it were the natural world; human beings as machines or biological organisms; social structure as if it were a physical structure. There are two types–behaviourism and abstracted empiricism.. C. Wright Mills used the term "abstracted empiricism" to describe the work of researchers who have allowed methodologies of the natural sciences to dominate their work. (Burrell and Morgan: 102-106)

Phenomenology is not totally coherent, but includes the work of Husserl, Schutz, Sartre and Merleau-Ponty. Transcendental phenomenology (Husserl) is the quest for the objective foundations of science, for meaning, at the level of the phenomenon. Existential phenomenology (Heidegger, Merleau-Ponty, Sartre, Schutz) is concerned with the 'life-world', the world of everyday experiences, rather than the that of transcendental consciousness. Phenomenological sociology is concerned with ethnomethodology (detailed study of everyday life) and phenomenological symbolic interactionaism.

Radical Humanism can be traced back to German idealism and the Kantian notion that the reality of the universe is spiritual, not material in nature. As with the interpretive paradigm, the individual creates the world, but the radical humanist paradigm subjects it to critique. People are essentially alienated. The 'subjectivist idealist' position derives from Fichte, a follower of Kant. The external world is seen as a projection of people's consciousness. This externalization forms a reality which in then reflected back upon them, and through it they conscious of themselves and their actions. 'Objective idealism' originated with Hegel. Consciousness and the external world are two sides of the same reality, locked in a dialectical relationship in which each defines and influences the other.

Radical structuralism is rooted in a materialist view of the natural and social world. Its ontology emphasizes the concrete nature of reality outside the minds of people. The social world has an independent existence, and radical structuralism is aimed at providing a critique of the status quo, and at changing it.

Russian social theory is part of the Engels tradition. It developed into the 'historical materialism' of Bukharin, and influenced Kropotkin's 'anarchistic communism'

Social Action Theory derives from the work of Max Weber and the notion of *verstehen* or interpretive understanding, and has been considered neo-idealist. Introduced by Dilthey, and expanded by Weber, it is a method of analysis in which subjective meanings are all important.

Social system theory derives from the 'general systems theory' of Van Bertalanffy, and is about the principles that govern the behaviour of entities that are different but interact. Study of systems is based on analogy, and has the same objective as science, but stands against reductionism, refusing to reduce all phenomena to physical events. It is positivist but not reductionist. Systems can be of many types–mechanical, organismic, morphogenic, fational, and catastrophic. Study of systems thus allows for both order/stability and conflict/change, but has been primarily used in a functionalist manner.

Solipsism is the most extreme form of subjective idealism, as it denies that the world has any distinct independent reality. The world is the creation of the mind. Ontologically, the world has no existence beyond sensations perceived by the mind and body. It is associated with Bishop Berkeley.

Subjectivism reduces the presuppositions of science to 'implicit metaphysical commitments'. The external world becomes an artefact of consciousness, phenomena are seen as willed into existence through intentional acts. People live in a world created through consciousness. (Burrell and Morgan: 233)

Voluntarism is based on human will. The change process at the voluntary end of the dimension is something that can be controlled within organizations, and is the result of the (cognitive) action of managers.

Sources:

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