The Innovation Dilemma:
Uncertainty and the Paradox of Universalism

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Abstract

General principles should guide strategic planning in engineering design, public policy, international relations, medical decisions and many other areas of human endeavor. However, decision makers know that general principles will sometimes be invalid in practice because of unanticipated contingencies. The challenge facing the strategic planner is to balance between fundamental long-range strategic thinking, and pragmatic solution of pressing problems. At one extreme the strategist ignores contingencies and insists on adherence to general principles. At the other extreme, the strategist abdicates and devotes all innovation and initiative to the solution of specific problems. We explore the problem of balancing between these extremes.

The strategic planner's challenge – balancing between principle and pragmatism – is a paradox of universalism. A precept is universal if it applies everywhere at all times. No exceptions or violations are tolerable. For instance, a public health department may adopt the strategic principle of immediate detection and eradication of a specific epidemic disease (such as tuberculosis) despite the heavy budgetary burden. No other approach is acceptable due to the perniciousness of the disease. The paradox of universalism is that unknown future contingencies may force operational violation of the principle. For example, a new, pernicious, highly infectious but poorly understood disease (such as HIV) may arise that draws away scarce resources to handle the immediate emergency.

The concept of an innovation dilemma assists in understanding and resolving the strategist's challenge. An innovative and highly promising new strategy is less familiar than a more standard strategic approach whose implications are more familiar. The innovation, while purportedly better than the standard approach, may be much worse due to uncertainty about the innovation. The resolution (never unambiguous) of the dilemma results from analysis of robustness to surprise (related to flexibility, adaptability, etc.) and is based on info-gap decision theory.

These ideas will be illustrated with historical examples and then by considering policy formulation for ameliorating rural poverty. We will consider both quantitative and qualitative analyses.