The Innovation Dilemma: Uncertainty and the Paradox of Universalism

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Abstract

Military and geo-political strategy should guide operational and tactical decisions. However, the strategist knows that strategic 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 tactical contingencies and insists on adherence to strategic principles. At the other extreme, the strategist abdicates and devotes all innovation and initiative to the solution of specific problems.

The strategist's challenge—balancing principles against 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 small country may adopt the strategic principle that battle must be moved immediately to the enemy's territory; no other approach is acceptable due to lack of geographical depth. The paradox of universalism is that unknown future contingencies may force operational violation of the principle. For example, an unanticipated domestic insurgency has no enemy territory to which battle can be shifted.

The concept of an innovation dilemma assists in resolving the strategist's challenge. An innovative and highly promising new strategy is less familiar than a more standard strategic approach whose tactical implications are more familiar. Hence 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, "indirect approach" etc).

These ideas will be illustrated with 3 brief examples: (1) the security dilemma, (2) choosing between investment in national defense or investment in civilian consumer goods and infrastructure (guns or butter), and (3) choosing between the ability to apply force, and the ability to identify threats and targets for that force, given a limited budget (armor or intel).

Selected References

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• Lots of additional sources at: http://info-gap.com

About the speaker:

Prof. Yakov Ben-Haim initiated and developed info-gap decision theory for modeling and managing severe uncertainty. Info-gap theory is applied in engineering, biological conservation, economics, project management, climate change management, homeland security, medicine, and other areas (see info-gap.com). He has been a visiting scholar in many countries around the world and has lectured at universities, technological and medical research institutions and central banks. He has published more than 90 articles and 5 books. He is a professor of mechanical engineering and holds the Yitzhak Moda'i Chair in Technology and Economics at the Technion—Israel Institute of Technology.

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