Revisiting the Problem of Organizational Goals: From Problems of Motivation to Problems of Direction

Daniel Levinthal
Wharton School, University of Pennsylvania
Alternative Perspectives on Choice

- Bounded Rationality
- Rational Choice

©Daniel Levinthal
Economic Perspective on the Problem of Organizational Goals

Problems of Incentive

Problems of Property Rights

©Daniel Levinthal
Why Goal Conflict?

• Role structures and the division of labor
  – Cyert & March (1963)
    • Divergent goals conflict stemming from division of labor and roles
    • Lack of complete task interdependence
      – Non-fully decomposable systems (Simon, 1962)
  • Variant of the property rights perspective
    – Assignment of task [rather than property] creating conflict
Behavioral Perspective: Problems of Direction and Evaluation

Problems of direction

Problems of evaluation

©Daniel Levinthal
Problems of Ex-Post Evaluation

• Aspiration driven learning
  – What constitutes the appropriate referent?
  – What are the behavior consequence of “success” and “failure”?
  – Grey zones: are the boundaries between “success” and “failure” clear?

• Issues of inference
  – Near misses
  – Hypothetical histories and counter-factual reasoning

• Sense-making

©Daniel Levinthal
Behavior

Outcome(s)

Inherent “physics” or social construction

Feedback processes

©Daniel Levinthal
Disentangling Incentives and Intentionality

Intentionality

Problems of Motivation

Goals as Incentive Alignment

Goals as directional

©Daniel Levinthal
Linkage of Problems of Motivation and Problems of Direction

- Pathologies of high-powered incentives and imperfect measures
  - “hoping for A rewarding B” problem
- Second-best solution to incentive alignment in a world of imperfect measures
  Or
- Ideological commitment to notion of incentive problem
  - Prompts high-powered incentives
  - Generate pathologies of behavior

©Daniel Levinthal
Forward-looking Evaluation

- Institutional theory and ideas of alternate “logics”
  - Logic of appropriateness
  - Alternate calculative logics
- Attentional view
  - What among the set of goals and objectives get activated at a particular moment

\[ F(\text{actions}) \rightarrow \{ \text{Outcome}_1, \text{Outcome}_2, \text{Outcome}_3, \ldots, \text{Outcome}_N \} \]
Bounded Rationality: The “Other” Bound

• Bounded rationality (as interpreted)
  – Search for alternatives that satisfy a minimal threshold

• Bounded rationality (as expressed)
  – Individuals have multiple goals that act as independent constraints
    • Actors do not make compensatory tradeoffs among outcome attributes
      – Large amounts of subsequent psychological research that validates this assertion
        » Thaler and mental accounting
        » Tversky (1972): Elimination by Aspects
“Footnotes” to the Problem of Direction

• Valuation of intermediate states
  – Myopia of selection (evaluation)
  – Problem of credit assignment

• Multiple goals
  – Implausibly balanced scorecards
  – Exploration and the ecology of goals

©Daniel Levinthal
Rational Choice Alternatives to Myopia

• Dynamic programming
  – Curse of dimensionality
  – Terminal value problem

\[ V(a^*_t, s_t) \rightarrow \pi + V(a^*_{t+1}, s_{t+1}) \]

Imputation problem
(Winter, 1987)

• Stock market as a solution
  – Valuation over the infinite future [appropriately discounted]

• Expectations of the future can only be based on the observables of the present
  – Projections based on some mixture of explicit calculation and valuation heuristics

©Daniel Levinthal
Myopia of Selection and Evolutionary Processes

(Levinthal and Posen, 2007)
Revisit the Exploration /Exploitation Tradeoff

• Classic result of statistical decision theory
  – Search (explore) broadly early on and then lock-in (exploit) a superior alternative

• Reconsider exploration/exploitation tradeoff in the face of selection pressure
  – In the absence of slack (or buffers), there is a need to exploit in the face of survival pressure
  – Small, modestly funded start-up exploits a particular trajectory and if resources accumulate may engage in broader exploratory behavior

©Daniel Levinthal
“Footnotes” to the Problem of Direction

- Valuation of intermediate states
  - Myopia of selection (evaluation)
  - Problem of credit assignment

- Multiple goals
  - Implausibly balanced scorecards
  - Exploration and the ecology of goals

©Daniel Levinthal
Credit Assignment

- Contrast of learning in a t-maze versus a labyrinth (Denrell, Fang, and Levinthal, 2004; Fang and Levinthal, 2009)
Sequence of Action with Limited Market Feedback

• How can firms learn to value these intermediary activities with no immediate market feedback?

- Samuels (1956): Credit assignment and reinforcement learning
  - Mental model of intermediate states as reinforcement

©Daniel Levinthal
Emergence of Routines
(Denrell, Fang, Levinthal, 2004)

- Routines as fast but not necessarily efficient solution to problem of interdependent (multi-stage) behavior

©Daniel Levinthal
“Footnotes” to the Problem of Direction

- Valuation of intermediate states
  - Myopia of selection (evaluation)
  - Problem of credit assignment

- Multiple goals
  - Implausibly balanced scorecards
  - Exploration and the ecology of goals
Multiple Goals and Organizational Schizophrenia

- Organizational goals have multiple goals with remarkably low correlation
  - “Firms are swamped with measures...it is commonplace for firms to have fifty to sixty top-level measures, both financial and non-financial...includes 20 financial measures, 22 customer measures, 16 measures of internal process, nineteen measures of renewal and development...” (Meyer, 2001: 7)
  - “Common sense measures...profitability, market share, customer satisfaction, and operating efficiency are weakly and sometimes negatively correlated” (Meyer, 2002)

- Individual acts impact multiple outcomes

©Daniel Levinthal
Basic Problem

• Organizational actors inevitably are faced with multiple outcome objectives
• Integrating across outcomes is problematic
  – Judgment over a vector versus evaluation of scalar
    • Satisficing as satisfaction of independent constraints (Simon, 1957)
    • Elimination by aspects (Tversky, 1972; Payne et al., 1993)
  – Mental accounting and financial payoffs
    • Individuals are found to treat unexpected gains and losses across time periods and categories separately (Thaler, 1985 and 1999)
  – Explicit weights are typically not articulated
    • Common source of speculation among actors as to what really “counts”
• Puzzle:
  – What are the implications of the above two postulates about organizations and individuals?
  – How does behavior vary for different goal structures?
Power of False Goal Structures
(Ethiraj and Levinthal, 2009)

• Linking characterization of choice to problem representation
  – More accurate problem representation may be an unabashed good in a world of rational agents
  – Less accurate representations may enhance performance in a setting of bounded rational actors

• Implications of simplifications
  – Lead to a clarity of action
  – Lead to climbing false “landscapes”
    • Strategy as solving not only the coordination problem of collectives, but for individual actors as well

• Simplifications
  – Focus on a subset of the full array of goals
  – Focus sequentially on distinct goals

©Daniel Levinthal
Complementarity of Rationality and Structure of Goals

True Goal Structure ↔ Rational Actor
- Power of “integration”

Simplified Goals ↔ Bounded Rationality

“It is logically impossible to maximize in more than one dimension at the same time unless dimensions are what are known as monotonic transformations of one another. Thus, telling a manager to maximize current profits, market share, future growth in profits, and anything else one pleases will leave that manager with no way to make a reasoned decision.” (Michael C. Jensen, 2001: 11-12)

©Daniel Levinthal
“Footnotes” to the Problem of Direction

• Valuation of intermediate states
  – Myopia of selection (evaluation)
  – Problem of credit assignment

• Multiple goals
  – Implausibly balanced scorecards
  – Exploration and the ecology of goals

©Daniel Levinthal

- **What is exploration?**
  - Pursuing initiatives for which there is less information/experience and in turn higher variance

- **What is *not* exploration?**
Alternative View of Exploration

- Exploration as exploitation on dimensions not fully sanctioned or recognized by the organization
  - Exploration as exploitation along a $N+1^{st}$ dimension
• Legitimating other-directed initiatives
  – Link to initiatives that are valued by the organization
  – Direct link to the external fitness landscape
    • Variety of external markets
    • Common numeraire of money
    • Requires immediate feedback
Inevitably of “Flatlands”

- Bounded rationality
- Need to coordinate and direct action among disparate individuals

Solution cannot be simply adding additional dimensions

- Importance of supplanting one cognitive dimension of performance with another
  - Powerful form of entrepreneurship and strategic change is the initiation of a cognitive shift that offers a different topology
  - Punctuation event

©Daniel Levinthal
Organizations as Artificial Selection Environments

• Behavioral tradition has focused on search
  — Actors not aware of full choice set and scholars have examined how the latent choice set might reveal itself

• Little attention to the problem of evaluation and “direction”
  — Having identified an alternative, generally [implicitly] assume no ambiguity as to its value relative to the status quo (Gavetti and Levinthal, 2000; Knudsen and Levinthal, 2007)
  — Similarly, processes of adaptive learning treat feedback as unambiguous (see Rerup on the “grey zone”)
  — If actors are intentional/forward-looking then objectives/goals as “direction setting” are critical

• Firms mediate between market outcomes and individual initiatives and activities
  — Artificial (firm-centered) selection environment (Levinthal and Warglien, 1999)

©Daniel Levinthal