

# **A moderately constructivist approach to decision theory**

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**University of Alberta & Center for Systems Research**

**An invited presentation prepared for the**

**Heinz von Foerster Conference**

**“Truth is the Invention of a Liar”**

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## **A moderately constructionist approach to decision theory**

Rational choice, exchange and so called evolutionary theories seek to extend economic theory to non-economic aspects of the activity of individual humans and other organisms. I attempt to place decision as a component of experience and action in constant interplay with their two other components: orientation and motivation. This interplay is governed by variational principles. The general principle of inauthenticity governs experience and action. It puts limits on the processes of orientation, motivation and decision. These are governed, respectively, by variational principles of uncertainty, tension and risk.

I first review the classical formulation of the rational decision process, including the distinction between decisions under certainty, risk and uncertainty. A set of relevant outcomes and a space of alternative actions is somehow defined. Then a not identified processor estimates, strictly independently of each other, the probability and desirability of outcomes. By multiplying them it obtains the utility of outcomes for each alternative action. Then, an experience of the course of action with the highest utility occurs and actual action magically follows.

From then on I systematically describe the psychologically and sociologically relevant variations in and deviations from the classical model, such as the differences between the idiocratic and the xenocratic decision process and the prototypic conditions under which one or the other occurs. Next, I classify alternative directions of deviance from the rational model. Then I describe different levels of realism and perspective in constructing objective and subjective estimates. Finally I mention, how in order to comply with the principle of decision and minimize the experience of risk, certain processes achieve primacy.

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# SYSTEM & SIGNIFICANCE

## System

N-ary relation

Structural explanation

Differential calculus

## Significance

Independent, intervening & dependent variables

Boundary conditions,  
functional sub-system & essential variable

Functional explanation

Calculus of variations

Essential variable at extremum:

*Constant, minimum, maximum possible*

*Optimum*

*Satisficing*

# EXPERIENCE & ACTION

## Three Special Theories of Intention

Theory of Orientation  
Management of Uncertainty

Theory of Motivation  
Management of Tension

Theory of Decision  
Management of Risk

## Interrelation of the Three Special Theories

Outputs of the three processes set limits (boundary conditions)  
for each other

## General Theory of Intention

Management of In-Authenticity

1. Classical formulation of the rational decision process, including decisions under *certainty, risk and uncertainty*:
  - A set of relevant outcomes & a space of alternative actions is somehow defined.
  - A not identified processor estimates, strictly independently of each other, the probability & desirability of outcomes.
  - By multiplying them it obtains the utility of outcomes for each alternative action.
  - An experience of the course of action with the highest utility occurs & an actual corresponding action magically follows.
  
2. *Decision as a component of experience and action in constant interplay with their two other components: *orientation* and *motivation**
  - This interplay is governed by variational principles.
  - The general principle of *in-authenticity* governs experience & action.
  - It puts limits on the processes of orientation, motivation & decision.
  - These are governed, respectively, by variational principles of *uncertainty, tension & risk*.
  
3. *Some psychologically and sociologically relevant variations in & deviations from the classical model:*
  - The *idiotic* and the *xenocratic* decision process and conditions under which one or the other occurs.
  - Alternative directions of deviance from the rational model.
  - Different levels of realism and perspective in constructing objective and subjective estimates.
  - Which processes achieve primacy in accord with the principle of decision to minimize the experience of risk.

# CLASSICAL FORMULATION OF THE "RATIONAL" DECISION PROCESS

Set of relevant outcomes

Space of alternative actions

Probability | Desirability of Outcomes

Probability X Desirability = Utility of Outcomes

Take action with highest utility

*Variants based on subjective or objective estimates of the desirability and probability of outcomes*

# DECISIONS UNDER

Certainty

Risk

Uncertainty

# PRINCIPLE OF MANAGEMENT OF RISK

Reduce as much risk as possible

The Problem of Rationality  
Identification and Alienation

The Problem of Autonomy  
Autonomy as Slavery

# RISK

Epistemic Risk

Telic Risk

# TYPES OF DECISION PROCESSES

Normative

*vs.*

Pragmatic

Extremizing

*vs.*

Optimizing

Idiocratic

*vs.*

Xenocratic

Identified

*vs.*

Alienated

# IDIOCRATIC DECISION PROCESS

Desirability

Probability

Utility

Resoluteness

# XENOCRATIC DECISION PROCESS (1)

## Phenomenal Basis

Frames of Reference

*Reference Groups*

Emotional Contagion

*Riot, Panic and Stampede*

*Dice and Omens*

# XENOCRATIC DECISION PROCESS (2)

Potency

Credibility

Command

Compliance

# XENOCRATIC DECISION PROCESS (3)

## Grounds of compliance

Loyalty

*Coalition*

Discipline

*Contract*

Coercion

*Physical*

*Mental*

Charisma

*Mystery*

# UNITED AND DIVIDED FRONT

First Law of Decision: **Xenocratic**

Second Law of Decision: **Idiocratic**

# IDENTIFIED VS. ALIENATED DECISIONS & GAMES

Resoluteness & Discipline (*Identification, loyalty*)

- Zero-Sum Games
- Satisficing Games
- Cooperative Games

Insanity & Rebellion (*Neurosis, dissent, negativism*)

- Ritual Games
- Transformational Games
- Paradoxical Games
- Chaotic Games

# TYPES OF ESTIMATES

Objective or Subjective

Conditional

Transitional: Micro and Macro

Transformational: Micro and Macro

Reflexive

# GRADIENTS & LEVELS OF RISK

Primacy of the Xenocratic Process

Primacy of Conditional Estimates

# RELATION OF DECISION, ORIENTATION & MOTIVATION PROCESSES

## Emphasizing Operator

Gradients of Uncertainty and Gradients of Risk

Levels of Uncertainty and Levels of Risk

## Polarizing Operator

Gradients of Tension and Gradients of Risk

Levels of Tension and Levels of Risk

# MARKETS

Idiocratic Markets

Xenocratic Markets

THE END FOR NOW...

...but continued on

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