Behavioral Planning Theory

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INTRODUCTION

Rationality plays a fundamental role in planning theory. The accepted rationality of neo-classic economics and decision theory is maximization of subjective expected utility, or the SEU model (e. g., Savage, 1972). In that rationality paradigm, given a set of seemingly reasonable axioms the decision maker is to select an act that maximizes his or her subjective expected utility. This definition of rationality is normative in that it serves as a guide to lead the decision maker to a rational choice defined in the most restrictive sense. It is well known that such a normative definition of rationality does not describe well how people actually behave, and Herbert Simon argued for bounded rationality in that given limited cognitive capabilities of human beings, people can only satisfy, rather than optimize in the sense of perfect or normative rationality. Daniel Kahneman and Amos Tversky (1979) in turn proposed a variant of the normative rationality of maximizing subjective expected utility called prospect theory to describe how people actually *do* behave rather than how they *should* behave. The crux of the conceptual inconsistencies between the SEU model, bounded rationality, and prospect theory is how the decision problem is framed by the decision maker in making choices. We suspect that all three models are valid if we consider the framing effects of decision making. Therefore, we would argue for a *framed rationality* in that all people are rational in both normative and descriptive senses based on the SEU mode, bounded rationality, and prospect theory, if the decision maker's behavior can be explained in terms of how the problem is framed and represented in the decision maker's head. That is, if we consider how the problem is framed by the decision maker in acting, either in the experimental settings or in the real world, we would be able to reconcile the conceptual conflicts between the subjective expected utility model, bounded rationality, and prospect theory, and the distinction between normative and descriptive camps of rationality would dissolve. All these theories would make sense in framed rationality. Given this introduction of framed rationality, we intend to develop a framework for constructing a behavioral planning theory for urban development.

In this chapter, in Section 2 we suggest a theoretical foundation for a behavioral planning theory. In Section 3, we introduce possible research methodologies. In Section 4, we propose a research agenda. In Section 5, we depict some future trends. In Section 6, we illustrate some behavioral implications. In Section 7, we conclude.

MAIN FOCUS

Based on framed rationality, the theoretical foundation for a behavioral planning theory includes, but is not limited to, four aspects: decision analysis, cognitive science, property right, and garbage can model, described as follows.

Decision Analysis

Decision analysis is a quantitative tool to aid the decision maker to make rational decisions. According to the definition of plans presented in this chapter, the term "decision" is a keyword,

but making plans of linked decision is poorly understood and practiced in general (Keeney, 2004). Decision analysis was originated from von Neumann and Morgenstern (1972) who constructed the theoretical foundation for expected utility, and Savage further refined that foundation to introduce the theoretical basis for subjective expected utility. The two theoretical foundations form the system of axioms for modern decision analysis. Psychologists such as Kahneman and Tversky (2000) brought decision analysis into behavioral research. It should be noted that these works focus on the phenomena of making single decisions, without much attention to making multiple, related decisions in time and space (exception includes Keeney, 2004). Regardless, after half a century's effort, decision analysis has cumulated sufficient research findings as a stepping stone for the development of a behavioral planning theory.

Few techniques exist specifically for planning analysis. Commonly used decision techniques focus on different, partial aspects of coordinating decisions. The garbage-can model (Cohen, March, & Olsen, 1972) focuses on the context in which decisions emerge to explain descriptively how organizational choices are made; the strategic choice approach (Friend & Hickling, 2005) focuses on the relationship between decisions from which rational actions can be taken; and the decision tree (Raiffa, 1968) focuses on the causal sequence of decisions from which the optimal path of a plan can be derived. Drawing on the theoretical foundation of these three commonly used techniques, we introduced elsewhere the conceptual framework of a tool for planning analysis, namely Decision Network, that addresses context, relationship, and sequence of decisions, with a numerical example demonstrating how the decision problem can be formulated and solved (Han & Lai, 2011). The present book chapter extends Decision Network to addresses more fully how to construct a behavioral planning theory.

Cognitive Science

The purpose of cognitive science is to explore human beings' sensual information processing capabilities in making decisions. Making decisions under uncertainty can be viewed as a cognitive process. Psychologists have accumulated many findings about how people err in making decisions, as rigorously described in Kahneman, Slovic, and Tversky (1982), including representativeness, availability, adjustment and anchoring, and so on. We tend to view making plans in consideration of interrelated decisions in space and time as confined to the limitation of the planner's cognitive capabilities. Therefore, it is necessary to explore the cognitive characteristics of information processing of people in making plans faced with uncertainties.

Property Rights

The expected utility theory in decision analysis prescribes that when making a choice among a set of alternatives, the decision maker ought to select the one that maximizes his or her expected utility. The notion of utility is however a mathematical construct, an abstracted idea. Whether there is utility residing in the decision maker's head is a question remaining in debate. Though expected utility theory is theoretically rigorous and logical, in practice utility is operationally difficult to elicit at best. According to the definition of plans in this chapter, We argue that the planner's motivation of making plans is to acquire and maximize property rights, rather than utility and that property rights are the substantive meaning of utility. Property rights are broadly defined here as economic property rights (Barzel, 1997), rather than legal property rights which are assigned by the state and are usually fixed. Economic property rights emerge in any transaction processes and are variable. Applying the notion of maximizing property rights to explaining the planner's motivation behind plan making is more plausible and meaningful than maximizing expected utility. The relationship between expected utility and property rights begs further clarification.

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