Chapter I

Causal Mapping: An Historical Overview

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Abstract

In this chapter, I provide an historical overview of the use of causal mapping, and its migration from political science to organization theory, and more recently into research efforts in Information Technology (IT). Since this migration has brought in its wake a diversity of perspectives and approaches, a secondary objective of this chapter is to sketch this diversity. I discuss the diversity in perspectives, research contexts and focus. Three perspectives (social constructionist, objectivist, and expert-anchored), four research contexts (discovery, hypothesis testing, evocative and intervention) and three types of foci (content, structure and behavior) are summarized.

Introduction

A remarkable revolution is underway in the organization sciences: A new generation of scholars is enthusiastically bringing the role of the human mind back into the study of organizations. Unlike the deterministic views of man expounded by Skinner or of organizations promulgated by the early contingency theorists such as Lawrence and Lorsch, this new breed of scholars takes inspiration from the works of Barnard, Simon and Weick, and pays serious attention to human cognitive processes. Their cognitive
agenda is enabled by the availability of new research tools that have made possible the study of thought using “normal science” approaches. Indeed, these new tools have reached a level of maturity as witnessed by their increasingly frequent use in papers published in major management journals (Narayanan & Kemmerer, 2001).

One of these tools that has great potential for advancing research in managerial cognition is causal mapping. Causal maps represent thought as a network of causal relations, representing concepts through nodes and causality though links between nodes. They invoke the notion of causation, and users of the tool observe that causal analysis is built into our natural language, while side-stepping the philosophical challenges associated with the notion of causality. In recent years, this tool has been considered one of the most effective ways of representing thought (Mohammed, Klimoski & Rentsch, 2001).

This book is devoted exclusively to causal mapping. The primary objective of this chapter is to provide an historical overview of the use of causal mapping, and its migration from political science to organization theory, and more recently into research efforts in IT. This migration has brought in its wake a diversity of perspectives and approaches, and therefore, a secondary objective of this chapter is to sketch this diversity, so that readers can appreciate the subtle differences among the various users of the tool. Thus, this chapter is meant for those interested in an appreciation of the technique beyond its immediate application.

This chapter unfolds in two major sections. In the first section, I detail the migration of the causal mapping technique over five stages, identifying the milestones in its evolution, and the seminal works that punctuate this evolution. In the second, I summarize the diversity of approaches among users of causal mapping and, indeed, the discerning reader will notice this diversity in the contributions of this edited book.

**Evolution of Causal Mapping**

The term cognitive maps appeared in a paper written by Edward C. Tolman titled, “Cognitive Maps in Rats and Men,” in the *Psychological Review* in 1948. Although he did not use the term in the sense known in organization sciences, Tolman extolled the virtues of reason, which were in contrast to the behavioral psychologist’s view which focused on stimulus response mechanisms for explaining human behavior. The term was later used by Axelrod to name the methods he and his colleagues employed to represent the arguments of political elites. The term, “cognitive maps,” however, conveyed the idea that the maps represented the actual workings of the mind. To avoid the claim that they were representing thought scholars following Axelrod began to employ the term “causal mapping.” These scholars claimed that they focused only on causal assertions in a specific set of texts.

In addition to the evolution of the terminology, several streams of scholarship have contributed to the initial use of causal mapping as a tool for representing thought. These streams are varied and often not related to each other. Nonetheless, it is useful to reflect
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