On the Logic of Social Codes

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(ABSTRACT)

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INTRODUCTION It has been suggested (see Harrison and Pólos [2000] for example) that simulation-based studies of organizations and populations of organizations can provide valuable input for logical investigations of the same subjects. In this paper, we present logical studies that lead to questions that might occasionally be studied by simulation methods.

SOCIAL CODES FOR ORGANIZATIONS Social codes are powerful tools to shape the world of organizations. Organizational identities and organizations forms emerge and persist because of socially enforced codes. One can meaningfully divide the set of organizations into populations because the relevant population boundaries have already emerged as a result of the sanctioning mechanisms associated with social codes.

Social codes, we argue, are important also because they reduce uncertainty. Even though codes are occasionally violated, the rational expectation is that organizations do obey the social codes that apply to them. Therefore, there is no need

to observe all organizational properties continuously. It is sufficient to know what social codes apply to an organization for (some aspects of) its behavior to be predictable.

LOGICAL ISSUES Social codes are logically challenging because they function by establishing connections between three semantic domains:

- the factual domain
- the epistemic domain
- the deontic domain

The *factual domain* provides information about code satisfaction and non-satisfaction. Here the information is complete: any organization either satisfies or does not satisfy a code.

The *epistemic domain* informs us about the social perception of code satisfaction. This domain is partial, because not all instances of code satisfaction or code violation are perceived. Furthermore, social perception need not be factual either. There might well be cases where social perception not only fails to recognize code violation but also perceives code satisfaction where code violation is in fact the case.

The *deontic domain* carries information about which social codes apply to which organizations. Applicable social codes work as default for organizations: this is what they do when they do what they are expected to do.

Even though these semantic domains appear to be pairwise logically independent, there are important relations that establish logical connections between them. If a code applies to an organization and there is no observed violation of this code by the organization, then the organization is observed as one that satisfies the code in question.
Furthermore, if several codes apply to an organization such that there is no way to satisfy all of them at the same time, then the more specific code elements dominate the less specific ones.

FINDINGS The paper identifies the three logics governing the respective semantic domains. The factual domain follows classical first-order logic. The epistemic domain obeys the rules of a three-valued partial logic, where not the absence of the classical truth values (the truth value gap) but information is inherited from smaller contexts to larger contexts. The deontic domain is best characterized by a non-monotonic logic.

The first two logics are known from the literature, the last, non-monotonic logic has been developed (among other things) for the purposes of the present paper.

CONCLUSION The paper concludes with a formal definition of a coherent code system and raises some problems that are left for future research. Some of these problems have an empirical nature. The logical analysis does not answer these questions, but provides the conceptual clarity that is necessary to raise these issues in an unambiguous manner.

When sufficient amount of good quality data is available, the following questions might be answered:

- How do codes, code systems emerge?

- What factors influence the stability of a code system?
    1. The structure of the code system
    2. Population density
    3. Presence/absence of (observed) code violation instances, etc
- Which are the vulnerable parts of a code system, which parts are more likely to be affected by environmental shocks?

In the absence of sufficient data to study these issues by simulation methods might be a viable alternative.