

# Reflections on a decade of microfoundations research

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## ABSTRACT

I briefly take stock on the microfoundations project which has become influential in macro-management research over the past decade or so. While the project has now moved into distinct theory-building, it still need to engage in serious empirical research. I discuss a number of challenges and solutions associated with the empirical side of microfoundations.

## 1. INTRODUCTION

The microfoundations project in macro-management research is now into its second decade (Felin, Foss & Ployhart, 2015). Introduced into macro-management research a decade ago (Felin & Foss, 2005; Gavetti, 2005), and relating back to traditional social science debates, microfoundations notion appear in many different contexts and being used by many scholars.<sup>(1)</sup> Thus, the microfoundations lens has been applied to macro-concepts (and the underlying perspectives) such as capabilities, dynamic capabilities, routines, competitive advantage, rent appropriation, organizational innovation, strategic problem solving, absorptive capacity, the flexibility/efficiency tradeoff, and institutional isomorphism (see further Felin, Foss & Ployhart, 2015). The microfoundations project would seem to have a fairly successful one over its decade plus long existence. And yet, the movement confronts a number of fundamental challenges, not the least the challenge of making it come (more) alive in the empirical dimension. The purpose of this short essay is to briefly outline these challenges.

## 2. MICROFOUNDATIONS IN A NUTSHELL

The notion of microfoundations is a fundamentally simple one (Felin & Foss, 2005; Barney & Felin, 2013). Thus, it is the heuristic that collective/aggregate/macro outcomes (e.g., organizational performance) and formations

<sup>1</sup> The microfoundations theme also partly reflects long-standing debates on the “micro-macro divide” in management research (e.g., Aguinis, Boyd, Pierce & Short, 2011), and is related to the emphasis on multilevel perspectives in management theory and empirics (Dansereau, Yammarino, & Kohles, 1999; Kozlowski & Klein, 2000).

## THINKBOX

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(e.g., institutions) be explained in terms of the actions and interactions of lower level entities, typically (but not necessarily) individuals. In turn, micro entities may be influenced by macro entities. The famous Coleman bathtub, see figure 1, illustrates these notions (Coleman, 1990). The point of the diagram is that explanation in social science takes place by means of the mechanisms implied by Arrow 3, or Arrows 2 and 3, or Arrows 1, 2 and 3, but never Arrow 4 alone (Abell, Felin & Foss, 2008). The latter is at best shorthand for a more complex microfoundational set of mechanisms.

A series of implications follows, more or less directly, from this simple characterization. Thus, microfoundations imply

- A layered social ontology (there are two layers (levels) in the diagram but this can be extended).
- The primacy of micro, as “micro” is “foundational” (in practice, microfoundations are often linked to methodological individualism).
- All macro influences on macro outcomes are mediated through micro-mechanisms.
- Intra- as well as inter-level causation; however, there is no macro-level causality (i.e., Arrow 4-explanation is ruled out).
- Time-dimensioning (the nodes in the diagram may be interpreted as referring to  $t_0$ ,  $t_1$ , etc.).
- Importance of behaviors/actions.
- Explanation involves more than one level, so relations between levels must be key.
- Such relations are causal (rather than merely constitutive), and involve upward as well as downward causality.

This is a set of mild constraints on theorizing and explanation. But, note, importantly, that microfoundations place

zero restrictions on how behaviors are modeled (in particular, microfoundations do not logically imply any particular commitment to rational choice method) and similarly is entirely agnostic about how inter-levels are modeled.

That the microfoundations project is not hugely controversial doesn't mean it isn't needed. In fact, the spate of work that has appeared over the last decade, mainly of a theoretical nature, suggests that the microfoundations project was a needed one (see Felin, Foss & Ployhart, 2015). It is clearly the case that microfoundations “work” in the theoretical dimension. In terms of theory-building, microfoundations are thus demonstrably doable. However, a key issue concerns the *empirical* dimension of microfoundational research.

### 3. THE EMPIRICAL SIDE OF THE MICROFOUNDATIONS PROJECT

Remarkably little microfoundational empirical work exists (Felin, Foss, Heimeriks & Madsen, 2012). However, it can safely be assumed that the microfoundations project will ultimately only be viable if it can produce new empirical insight. And yet, the project faces distinct empirical challenges.

#### 3.1. Large N Research

The dominant empirical approach in management research is statistical methods in search of co-variation (and ideally causal inference), based on large N datasets. It is clear that successful microfoundational research involves data sampling at at least two levels. This is cumbersome, time-consuming and often quite costly. A deeper problem is that the relevant dataset

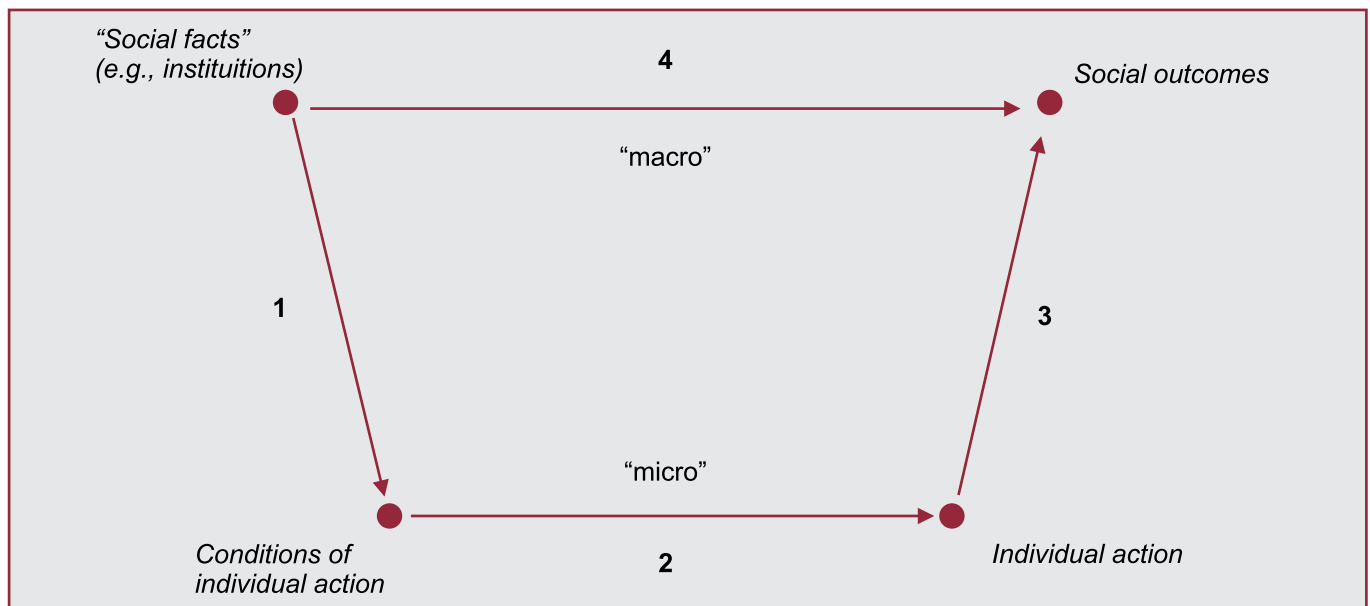


Figure 1: A General Model of Social Science Explanation

must have sufficient variance at both micro and macro-levels. While matched datasets can be constructed, micro level data are usually not randomly drawn from a larger population. Rather, they follow from macro level observations (Felin, Foss & Ployhart, 2015). This wouldn't have been a problem, if people selected randomly into firms, but obviously they do not—which causes problems of representativeness and unbiasedness of the data that are sampled at the micro level sample (for more detail, see Abell, Foss & Lyngsie, 2016).

A simple way of relating micro level factors to macro-level observations, and the one that is usually used, is to aggregate the micro-level based on averaging. However, obviously, averaging also means suppressing a lot of the action at the micro level. Of course, additional statistical moments may be invoked, diversity indices may be constructed, etc., but still many micro-mechanisms will remain unobserved. In sum, therefore, there are strong concerns about the extent to which microfoundational research can be furthered in the empirical dimension by means of traditional large-N research.

### 3.2. Other empirical methods for microfoundational research

*Case studies.* A possible alternative (and not just complement) to large N methods are “case studies,” or, small N research. As compared to standard large N research, such methods have the advantage that they typically allow for getting more “into” the causal micro-mechanisms that drive observed events, either through interviews or direct observation. They thus allow for the construct of event histories, making mechanisms become much less unobserved (as compared to standard large-N research).

The usual challenge associated with such research is that of generalizability, and therefore they are usually seen as mainly part of exploratory research. Abell (2011) develops the notion of singular causality at the micro level, that is, causal relations supported by singular causal claims (e.g., “A did this because of that”), and suggests that the generalizability issue may be formulated in terms of how generalizable a given singular causal connection is. He argues that a concept of singular causality can allow research to accumulate in a research community that may reveal the extent to which singular causal claims can be generalized.

Abell (2011) and Abell, Foss and Lyngsie (2016) link singular causality to so-called “Bayesian narratives.”

Narratives are built from action/decision driven narrative paths. These are accounts of how the relevant part of the social world is changed from an initial state to a final state along chronologies of intervening states. The probity of each causal link is assessed using Bayesian methods which estimate the odds for and against a link on the basis of the evidence collected. Case studies constructed in this way can provide information for the construction of agent based simulation models of various micro mechanisms.

*Agent-based models.* Agent-based models study the emergent (macro) outcomes of the dynamics of simultaneously interacting rule-based micro agent, typically in order to account for (“grow”) a particular observed macro phenomenon (e.g., Epstein, 2007) (i.e., Arrow 3 in Figure 1, and possibly also Arrows 2 and 3). Thus, simulations are often pieces of “conjectural history”: They show how it *could* have happened. Case studies can provide important information that assists in building a simulation model, so as to make the simulation somewhat less conjectural. Such information may concern how agents react to institutions, who interacts with who (and how they are influenced), and what are the rules, strategies, information, etc. that form the basis for decisions and behavior.

## 4. CONCLUSIONS

The microfoundations project has so far been a distinct success. It has moved beyond its initial somewhat preachy tone and has made the transition to actual theory-building. However, much more empirical work is clearly required (Felin et al., 2012). The challenge is that the study of microfoundations often is difficult to align with management research's dominant large N research methodology. This calls for other ways of making microfoundations come alive in the empirical dimension. While they are less known in management research, such approaches do exist, such as rigorous ways of dealing with small-N research in the form of analytical narratives as well as simulation approaches. Experiments may also be used to throw light over selected aspects of micro-mechanisms. In short, if microfoundations become viable in the empirical dimension, this may have the unintended outcome that research methodologies that are alternative to the dominant large-N approach may become more prevalent. ♦

## REFERENCES

Abell, P. (2011). Singular mechanisms and Bayesian narratives. In Demeulenaere, P., ed. *Analytical Sociology and Social Mechanisms*. Cambridge: Cambridge University Press.

Abell, P., Felin, T., & Foss, N. (2008). Building microfoundations for the routines, capabilities, and performance links. *Managerial and Decision Economics*, 29, 489-502.

Abell, P., Foss, N.J., & Lyngsie, J. (2016). Empirical challenges of microfoundational research. *Unpublished paper*.

Aguinis, H., Boyd, B.K., Pierce, C.A., & Short, J.C. (2011). Walking new avenues in management research methods and theories: Bridging micro and macro domains. *Journal of Management*, 37.

REFERENCES

- Barney, J.B., & Felin, T. (2013). What are microfoundations? *Academy of Management Perspectives*, 27, 138-155.
- Coff, R., & Kryscynski, D. (2011). Drilling for micro-foundations of human capital-based competitive advantages. *Journal of Management*, 37, 1429-1443.
- Coleman, J. 1990. *Foundations of social theory*. Boston: Harvard University Press.
- Dansereau, F., Yammarino, F. J., & Kohles, J. C. 1999. Multiple levels of analysis from a longitudinal perspective: Some implications for theory building. *Academy of Management Review*, 24(2): 346-357.
- Epstein, J. M. (2007). *Generative Social Science: Studies in Agent-Based Computational Modeling*. Princeton: Princeton University Press.
- Felin, T., & Foss, N. (2005). Strategic organization: A field in search of micro-foundations. *Strategic Organization*, 3, 441-455.
- Felin, T., Foss, N., Heimeriks, K., & Madsen, T. (2012). Microfoundations of routines and capabilities: Individuals, processes, and structure. *Journal of Management Studies*, 49, 1351-1374.
- Gavetti, G. (2005). Cognition and hierarchy: Rethinking the microfoundations of capabilities' development. *Organization Science*, 16, 599-617.
- Kozlowski, S., & Klein, K. J. (2000). A multilevel approach to theory and research in organizations: Contextual, temporal, and emergence processes. In K. J. Klein & S. W. Kozlowski (Eds.), *Multilevel theory, research and methods in organizations: Foundations, extensions, and new directions* (pp. 3-90). San Francisco: Jossey-Bass.
- Molloy, J. C., Ployhart, R. E., & Wright, P. M. (2011). The myth of "the" micro-macro divide: Bridging system-level and disciplinary divides. *Journal of Management*, 37, 581-609.

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