

## 1. Empirical testing and further development of sociological middle-range theories

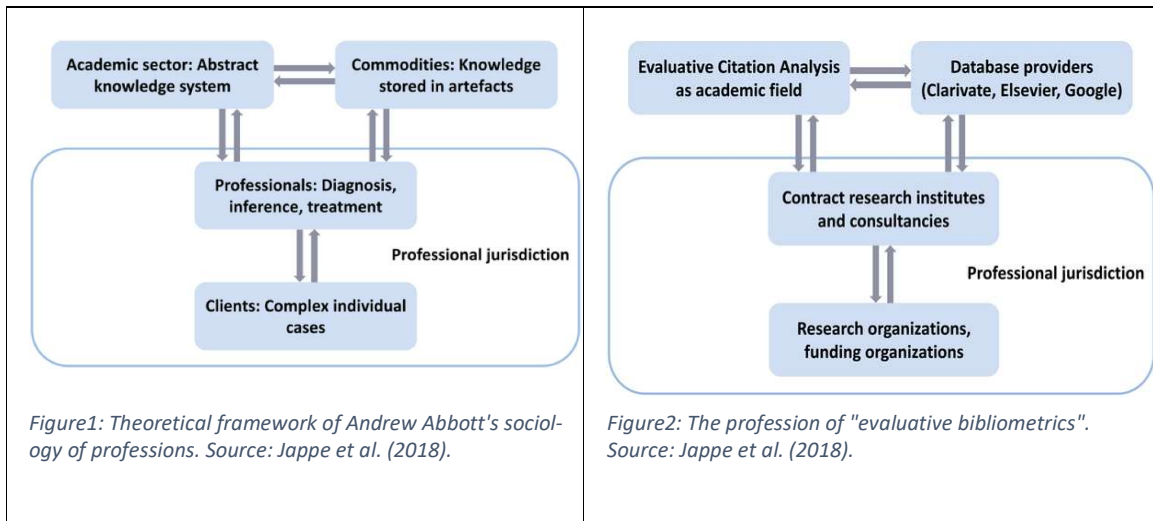
There has been a debate in sociological research about the relationship between theory and empirical research. On the one hand, this debate concerns the question of what is meant by "theory" or "good theory" (Abend 2008) and what significance empirical studies should have in the further development and testing of theories (Besbris & Khan 2017). On the other hand, it is about quality assurance in sociological research (Otte et al. 2023). This debate is also being conducted in the field of quantitative empirical science research with a focus on "middle-range theories." Such middle-range theories, as defined by sociologist Robert K. Merton, are a prerequisite for gradual, cumulative advancement of knowledge in empirical-analytical sociological research. In this regard, Heinze & Jappe (2020) argue that there are middle-range theories that have not yet been subjected to empirical testing. Instead of formulating new theories, the authors recommend examining existing theories more closely empirically using concrete examples, thereby consolidating and further developing them. The following section explains which medium-range sociological theories are being empirically tested in Prof. Heinze's research group or used for the analytical structuring of empirical questions. This includes PhD dissertation projects from the DFG-funded Research Training Group "Transformations of Science and Technology since 1800: Topics, Processes, Institutions" (RTG 2696).

### 1.1 Theory and sociology of professions

A prominent sociological middle-range theory is the theory of professions by Abbott (1988, 1991). To date, there have been few analyses in which this theory has been empirically tested. New expert groups and expert organizations that attempt to establish a new jurisdiction for a complex social problem in various social arenas (e. g., public opinion, politics) are particularly suitable for this purpose. In a research project (BMBF-01PY13013, duration: 2014-2018) and a doctoral dissertation linked to this project (completed in 2018), *evaluative bibliometrics* was examined in detail (Petersohn 2016; Jappe et al. 2018; Petersohn & Heinze 2018; Cox et al. 2019; Jappe 2019; Heinze & Jappe 2020; Jappe & Heinze 2020). This is a relatively young professional field that provides a basis for decision-making in science management and science and technology policy. Abbott's theoretical framework (Fig. 1) allows us to analyze the competition for professional interpretive authority and the rivalry between different groups of experts (Fig. 2). A historical-sociological reconstruction of *evaluative bibliometrics* in the Netherlands (Petersohn & Heinze 2018) and a comparison between the Netherlands and Italy (Jappe & Heinze 2023) reveal clear differences in the design of national research evaluation systems.

Another application of the theory of professions of Abbott (1988, 1991) was investigated in the DFG-funded Research Training Group 2696 "Transformations in Science and Technology since 1800: Topics, Processes, Institutions" in a dissertation project completed in 2025 by Dierkes (2025). She shows that simulation-based training in so-called skills labs has gradually but fundamentally transformed medical education at German universities since the 1980s. She argues that simulation-based training represents a professionalization of medical education and a modernization of the knowledge infrastructure in the healthcare system. Dierkes discusses the social arenas in which debates within medicine take place and argues that the new group of experts has a *subordinate* jurisdiction in the hierarchical medical education

system at German universities. Using the analytical categories of Abbott's profession theory – in conjunction with concepts of *historical institutionalism* (cf. 1.3) – this transformation process can be understood and its dynamics explained.



### Publication of Prof. Heinze's research group

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