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## Explaining and Understanding by Answering ‘Why’ and ‘How’ Questions: A Programmatic Introduction to the Special Issue *Social Mechanisms*\*

### 1. The Social Mechanisms Approach in Social Science Theory and Research

The last decade has seen a growing interest in the concept of social mechanisms in the social sciences and the philosophy of social sciences. The social mechanism debate focuses on the question of which methodological and theoretical principles define a satisfactory way of doing social sciences (Demeulenaere 2011; Becker 2016). The social mechanism approach follows the idea that social sciences should not only describe and classify social phenomena, but should also attempt to provide causal explanations. Although alternative definitions and concepts of social mechanisms can be found in social sciences literature, there is a principle on which most advocates of the social mechanism approach agree: social phenomena should be explained by opening up the black box of (social science) explanation and making explicit the causal “cogs and wheels” (Elster 1989) through which these social phenomena are brought into existence. Social scientists committed to the mechanism approach (aim to) explain *why* social phenomena exist by explaining *how* they come into existence. From a social mechanism perspective, “causality lies in the production” (Machamer 2004, 35),

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and social mechanisms identify the causal sequences of the production steps. In this programmatic introduction, we will begin by providing a review of the mechanism approach, introducing its core ideas and the positions of its central adherents and critics, and assessing its overall usefulness.

The social mechanism approach follows the idea that the primary aim of social sciences is to understand social phenomena, i.e., in the domain of mechanism-based explanations, to specify how “X leads to Y through the steps A, B, C” (George/Bennett 2005, 141). From this perspective, understanding a social phenomenon includes the ability to make various correct inferences about the phenomenon. The essential criterion for understanding a phenomenon is the knowledge-based competence to “make inferences to counterfactual situations—the ability to answer contrastive *what-if-things-had-been-different-questions*” (Ylikoski 2011, 157, emphasis in original). For example, how would the outcome have differed if the causal factor A, as Hedström and Ylikoski put it, had been “subject to a surgical intervention that would not have affected any other parts of the causal structure” (Hedström/Ylikoski 2010, 54)? A knowledge-based understanding of social phenomena enables reasoned predictions about the (probable) effect of interventions and therefore provides practical knowledge for interventions in the social world (cf. Ylikoski, 2011).<sup>1</sup>

The interest in mechanism-based explanations is motivated by methodological critics of the deductive-nomological model of explanation (henceforth, the D-N model) and of a broad range of quantitative survey. The latter has either traditionally focused on correlational analysis or has neglected to include the explicit specification of social mechanisms when applying more advanced multivariate techniques. Both the D-N model and quantitative survey research without theory are considered as inadequate when it comes to a satisfactory understanding of *how* and *why* particular inputs generate the output in question. In view of the D-N model, an explanation demands that the explanandum be logically deduced from an initial condition by virtue of a covering law (if X, then Y). The deficit of the D-N model is that it allows for explanatory fallacies. There are statements that indeed formally fulfill the criteria of the D-N model yet are of no explanatory value. The obligatory example for this shortcoming is the following statement (see Hedström 2005, 16 adopted from Salmon 1971): No one who regularly takes birth control pills becomes pregnant; Peter regularly takes birth control pills; ergo, Peter does not become pregnant. This statement, although in line with the reasoning of the D-N model, obviously refers to an irrelevant explanatory factor.

Quantitative survey researchers have been criticized for their occasionally overhasty interpretation of statistically significant relations as causal effects (Freedman 1987; Hedström/Swedberg 1996; Hedström 2005, chs. 2 and 5). Although quantitative survey research provides valuable insights into regularities

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<sup>1</sup> The concept of understanding must be distinguished from the “sense of understanding” (Ylikoski 2011). The latter refers to the *aha effect*, which results from the mental experience of suddenly grasping the reasons behind a phenomenon, which is often a satisfying experience. However, this sense of understanding is a fallible indicator of understanding; while the sense of understanding is sometimes false, at other times, one understands a phenomenon without having this specific feeling (Ylikoski 2011, 157).

between variables, its advocates often remain silent on the underlying generative steps through which they are connected. A significant positive relation between socioeconomic status and health tells us that people with a lower socioeconomic status have poorer health; however, this statistical insight does not tell us *why* this is the case. Therefore, correlational analyses do not explain but rather *require* explanation through references to the actions and interactions that make up these associations (Mayntz 2004; Hedström 2005, 11ff.). The social mechanism approach addresses the explanatory gaps of the D-N model and correlational analyses. It also suggests closing them by ‘unpacking the black box’ through a disclosure of the sequences of activities that link initial conditions and the outcome to be explained.

The basic idea to ‘explain a social outcome by revealing the sequences of activities which brought it into existence’ has a long tradition in social sciences (see Manzo 2010, 133ff.). In social theory, the first steps toward thinking in terms of social mechanisms can already be found in the works of de Tocqueville (see Elster 2009; Edling/Hedström 2009), Weber (Cherkaoui 2005), and Durkheim (Cherkaoui 2005). The introduction of the term ‘mechanism’ and the development of a “programmatically mechanism-based movement” (Manzo 2010, 133) began after World War II, and it was considerably stimulated by the seminal works of Merton (1968[1949]), Schelling (1971), Boudon (1979), Elster (1989), Coleman (1990), and Little (1991). In the 1990s, the mechanism debate in social sciences (or at least in sociology) was deepened and intensified by the analytical sociology (henceforth, AS) approach. AS put the mechanism idea at the core of its theoretical and methodological program like no other social scientific approach before it. This program is laid out in Hedström’s (2005) highly influential book *Dissecting the Social* and *The Oxford Handbook of Analytical Sociology*, edited by Hedström and Bearman (2009). The exponents of AS see their approach not as a new paradigm but as a sociological “meta-theory” and “reform movement” (Hedström/Ylikoski 2014, 60), which provides no substantial theory other than a “‘syntax’ for explanation” (Manzo 2010, 162), which enables the production of explanatory sociological theories.

Nevertheless, it must be emphasized that AS only represents one variant of the social mechanism approach within the social sciences, and some of its theoretical and methodological core assumptions, such as the desire-belief-opportunity model of action (henceforth, the DBO model) or the restriction of empirical tests of social mechanisms toward agent-based modeling, are quite controversial.<sup>2</sup> Alternative social scientific approaches of mechanism-based explanations vary, particularly with respect to their action-theoretical premises. For example, the approach of explanatory sociology (Schmid 2011; Maurer in this volume) pursues the program of mechanism-based explanations from the perspective of Rational Choice Theory (henceforth, RCT). A contrary idea of mechanism-based

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<sup>2</sup> Yet, even among exponents of the AS approach, the DBO model of action is not without controversy. Edling and Rydgren (2014) criticized the model for its restricted potential for capturing culture and identity as determinants of individual action. However, to the best of our knowledge, no alternative action-theoretical model has been proposed within the AS approach until now.

explanations is advocated by the pragmatist theory of social mechanisms (Gross 2009). The pragmatist research program, which is concerned with social mechanisms, aims to uncover how social outcomes are brought about by habits of cognition and action that evolved as a response to practical problems. The concept of social mechanisms and mechanism-based explanations is thus not linked to a specific action-theoretical approach but is compatible to diverse and diverging theoretical perspectives. A more detailed discussion of action-theoretical questions is presented in *section 4*. At this point, we would like to stress that, regardless of different action-theoretical positions, structural-individualism is the dominant methodological program within the social mechanism approach (Wippler 1978; Udehn 2002). Most social scientists, when thinking in terms of social mechanisms, follow the conviction that, while structures are a crucial part of the explanation of social facts, they have no causal power for themselves; they operate through the actions of individuals.

The general notion of the mechanism perspective “to explain *why* by explaining *how*” (Bechtel/Abrahamsen 2005, 422, emphasis in original) has been quite popular amongst social scientists since the mechanism debate began in the 1990s.<sup>3</sup> Kalter and Kroneberg (2014, 92f.) stated that the term ‘mechanism’ is increasingly used in social sciences literature, and Ylikoski (2012, 21) even spoke of a “mechanistic turn”. From our perspective, the social mechanism approach has the potential to provide an integrative research perspective for a highly fragmented discipline like the social sciences (cf. Hedström/Ylikoski, 2010, 62; Graeff in this volume). The approach offers both a language and an explanatory heuristic that are compatible to different research methods, theoretical approaches, and subfields of social sciences.

However, we believe that the integrative potential has yet to be fully realized, and the current social mechanism debate suffers from stagnation rather than contributing to increasing social scientific knowledge. Programmatic and theoretical contributions that aim to clarify the mechanism concept often suffer from high abstraction and are therefore sterile (cf. Greshoff 2015). While the core ideas of the social mechanism approach are repeatedly presented and sometimes theoretically varied, the ways in which social mechanisms are assumed to operate are rarely illustrated in detail through references to substantive examples (cf. Greshoff 2015, 49). Additionally, a gap exists between programmatic discussions and applied social research. Systematic applications of the mechanism perspective in the analysis of existing social phenomena are still rare. Meanwhile, many authors complain about an increasing “mechanism talk” (Norkus 2005; Kalter/Kroneberg 2014), i.e., the inflationary use of the term ‘mechanism’ in social sciences literature without detailed explication of the verbally referred to social mechanisms. For instance, mechanisms of learning, trust, reputation, or conflict remain mere ‘mechanism talk’ as long as they are unspecified regarding how they work and bring about the outcome in question. A social mechanism essentially describes a causal process, and the aspiration of the social mechanism

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<sup>3</sup> With their use of the formula “to explain *why* by explaining *how*”, Bechtel and Abrahamsen (2005, 422, emphasis in original) refer to mechanism-based explanations in biology; however, the formula corresponds to mechanism-based thinking in social sciences.

approach is to explicate the sequences of this process. As Mayntz emphasizes, there is nothing to be said against labeling a causal process by a single term (like learning mechanism), but “a mechanism is only *identified* when the process linking an outcome and specific initial conditions is spelled out” (Mayntz 2004, 241, emphasis in original). This is not always the case when social scientists refer to the concept ‘mechanism’. Pajunen (2008, 1449), points out that, within organizational studies, researchers often underlie the need for mechanism-based explanations; however, in most cases, the named mechanisms remain vague or even contradictory. Kalter and Kroneberg (2014, 100) also conclude that a close look at how the term ‘mechanism’ is employed in social science literature discloses crucial deviations from the core ideas of mechanism-based explanations.

To overcome the stagnation of the social mechanism debate, theoretical and empirical applications are needed in which both the mechanism idea is taken seriously and the value of this approach is demonstrated on the basis of concrete social phenomena (cf. Greshoff 2015). This special issue on *Social Mechanisms* is a collection of contributions to this task. In the remainder of this introduction we will clarify the concept of social mechanisms (*section 2*), suggest a distinction between different types of mechanisms (*section 3*), discuss the role of action-theories for mechanism-based explanations (*section 4*), identify challenges regarding the idea of social mechanisms as explanatory tools (*section 5*), and give an overview of the volume (*section 6*).

## 2. What Are Social Mechanisms?

The social mechanism approach aims to provide an explanatory understanding of social phenomena by revealing the generative processes by which they are brought about. From this perspective, it is not enough to state that X leads to Y; a satisfactory explanation demands explication of the sequences and steps through which X and Y are causally linked, i.e., *why* and *how* X leads to Y. Although there is a shared understanding that social mechanisms refer to sequences of events through which social phenomena are brought about, there is no consensus about the right definition of the term ‘social mechanism’. In the philosophy of science as well as in social sciences literature, a variety of alternatives are suggested. By 2001, Mahoney (579f.) had listed 24 definitions. Even within the same volume, for instance *Analytical Sociology and Social Mechanisms* (edited by Demeulenaere 2011), several definitions and concepts of social mechanisms can be found (cf. Leuridan 2011).<sup>4</sup> Instead of discussing different variants, it seems to be more useful to ask for a common understanding of social mechanisms shared by the majority of authors. From a careful survey of the seminal contributions to the mechanism debate, we can extract the following crucial features of social mechanisms:<sup>5</sup> *Social mechanisms are abstract and general models of spatially, temporally, and functionally organized entities and*

<sup>4</sup> For another overview of different definitions see Hedström/Ylikoski 2010, 51.

<sup>5</sup> See Hedström/Ylikoski 2010; Ylikoski 2012; Glennan 2008; Gross 2009; Little 2011; Mayntz 2004.

*activities that explain why and how social phenomena are generated by preceding causal factors.* This core understanding comprises four characteristics of social mechanisms, which demand a closer look.

1. Social mechanisms are *generative*: The identification of social mechanisms starts from an initial setting and ends with an outcome to be explained. The mechanism is located between these conditions and describes the generative sequences that link the initial setting with the outcome.<sup>6</sup> The scope of sequences that are designated by a mechanism may vary greatly; they may encompass only a few cognitive-affective processes or extend over longer chains of interaction sequences.
2. Social mechanisms are made up of *organized entities and activities*: Mechanisms consist of parts; these parts are entities of properties and activities (e.g., individuals with preferences, heuristics, and/or behavioral dispositions). Mechanisms are not only defined by their parts but also by how the “spatial, temporal, and functional organization of the parts” (Glennan 2008, 422) brings about the outcome of interest.<sup>7</sup>
3. Social mechanisms are *abstract*: Social mechanisms aim at grasping the essential generative forces by disregarding all causally insignificant elements. The abstract composition of the mechanisms’ organization of entities and activities that make up a mechanism should be filled with more specific descriptions through the transfer of specific cases. The abstractedness of the elaboration of social mechanisms may vary.
4. Social mechanisms are *general*: To speak of a mechanism, its basic causal structure must be found in other cases. The term ‘mechanism’ therefore “implies a scope that is greater than a single case” (Gerring 2010, 1502). Mechanisms refer to causally linked sequences that are more or less expected if specific initial conditions are given. The degree of generality may vary and should be determined empirically.<sup>8</sup>

The idea of social mechanisms as abstract and general models of organized entities and activities through which social phenomena are generated raises the need for examples that demonstrate what social mechanisms are and how they work. In social sciences literature, there is a diverse range of different social mechanisms related to different social phenomena. A familiar first example for a mechanism of preference formation is the *sour grapes mechanism* (Elster 1983), which describes a process of preference-formation through adaptation to perceived opportunities by simultaneously devaluing goods that appear unrealizable. The entities of this mechanism are individual actors and their preferences and belief systems; the generativity the mechanism refers to is a modification of preferences and beliefs after an evaluation of opportunities; the causal struc-

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<sup>6</sup> The initial setting and outcome can also be linked by several mechanisms.

<sup>7</sup> The temporal feature of mechanism-based explanations is essential because it refers to their causal demand. Diachronic causal relations, as described by mechanism-based explanations (e.g., ‘How did the window break?’) must be distinguished from synchronic constitutional relations (e.g., ‘Why is glass fragile?’; also see Ylikoski 2012).

<sup>8</sup> Some authors, such as Machamer (2004, 37) and Greshoff (2015, 56), have advocated a different position and argued that ‘generality’ should not be treated as a definitional but rather an empirical dimension of mechanisms.

ture of an adaptive preference formation is abstract and therefore transferable to a significant number of cases in which it potentially explains the preference formation.

The second example of a social mechanism is *rational imitation* (Hedström 1998), which is when an actor acts rationally on the basis of his/her belief about a successful action strategy and his/her actions have been influenced by observing the successful behavior of others. The entities of this mechanism are individual actors, their belief systems, and the actions of others as signals. Rational imitation brings about a specific type of social behavior: the imitation of others' action strategies as a means for better realization of one's own preferences; the causal structure is abstract and transferable to a wide variety of cases and is also a potential candidate for the explanation not only of individuals' actions but those of organizations.

The third example is the mechanism of *relative risk aversion* (e.g., Tversky/Kahneman 1981; Kahneman/Tversky 1984). The relative risk aversion mechanism describes the empirical observable phenomenon of individuals tending to be risk averse when it comes to gains but risk affine when it comes to losses.<sup>9</sup> The entities of this mechanism include individuals and their risk preferences; relative risk aversion evokes a specific kind of behavior: loss avoidance. The mechanism of relative risk aversion is general because it not only explains why people sign insurance contracts (Kahneman/Tversky 1984) but also constitutes the crucial element of the rational-choice approach to explain social inequalities in educational transitions (Breen/Goldthorpe 1997; Breen/Yaish 2006; Stocké 2007; Becker/Hecken 2009).<sup>10</sup>

The fourth example of a mechanism is the *threshold model* of collective behavior (Granovetter 1978). This mechanism refers to a situation in which an individual's decision to participate in collective action or not depends, at least in part, on how many other actors are already involved. The individuals of a population might differ regarding their personal threshold values, i.e., in the number of people who participated prior to them. Against the backdrop of varying thresholds in a population, collective action evolves as the result of several successive action sequences, whereby the results of the first sequence are the initial condition of the second and so forth. The entities of the threshold mechanism are individuals who have potentially varying participation preferences (individual thresholds); the generativity of the mechanism is composed of the intertwined organization of sequential actions. The essential causal struc-

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<sup>9</sup> When asked to decide between two treatments against a deadly disease, of which treatment *A* saves the lives of 400 out of 600 people and treatment *B* creates a 2/3 probability that all 600 people are saved, the majority of respondents would opt for treatment *A*, which provides fixed gains. However, this pattern changes if the same task is rephrased in terms of losses: The majority of respondents would prefer treatment *B\**, with which there is a 1/3 probability that 600 people will die rather than treatment *A\**, with which there is a sure loss of 200 people's lives (Kahneman/Tversky 1984).

<sup>10</sup> Notably, the type of rational action theory involved here is wider because actors' relative risk aversion would violate the assumption of preference consistency in standard rational choice theory (cf. Manzo 2013, 363f. for an overview).

ture of the threshold mechanism of collective behavior is abstract and can be transferred to a wide variety of collective actions.

### 3. Types of Mechanisms

The examples above show that social mechanisms differ regarding the scope and complexity of the sequences of activity in which they cover. For this reason, it is extremely helpful to distinguish between different types of mechanisms. Hedström and Swedberg (1996, 296; 1998, 23) suggest to use Coleman’s well-known three-step macro-micro-macro schema, which offers a template for structural individualistic explanations, as a starting point (cf. *figure 1*). Analogous to this schema, the action-formation and transformational mechanisms can be distinguished as follows: (1) *situational mechanisms* cover the macro-to-micro transitions and specify how external social phenomena (e.g., power relations, norms, ideologies, and events) affect internal states of individuals (e.g., preferences, belief systems, and subjective definitions of a situation); (2) *action-formation mechanisms* are micro-level-mechanisms that describe how a specific combination of desires, beliefs, and (perceived) opportunities generate specific actions; (3) *transformational mechanisms* cover micro-to-macro transitions and describe how actors generate intended or unintended social outcomes through their actions and interactions.

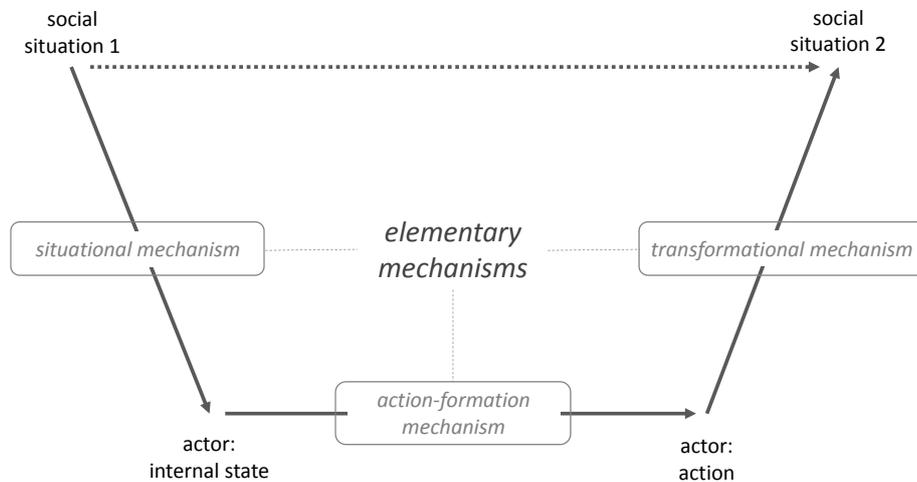


Figure 1: Three types of elementary mechanisms (derived from: Hedström/Swedberg 1998, 23).

Although this distinction analogous to the macro-micro-macro schema has been widely applied, its status within the social mechanism approach is not entirely clear.<sup>11</sup> This distinction was neither taken up in Hedström’s *Dissecting the*

<sup>11</sup> An example of this schema’s application is Hechter and Horne’s (2009) reconstruction of

*Social* (2005) nor in the *Oxford Handbook of Analytical Sociology*, edited by Hedström and Bearman (2009), which are both highly influential contributions to the social mechanism debate and fundamental works of AS. Alternatively, Hedström (2005, 145–6), in *Dissecting the Social*, distinguishes between *elementary mechanisms*, stating that, as with action-formation mechanisms, they focus on intra-individual processes, which bring about individual action, and *molecular mechanisms*, which include inter-individual structures of social interaction. Both types of mechanisms have the same basic structure and can be described in terms of specific entities including properties and the way in which they are linked together.

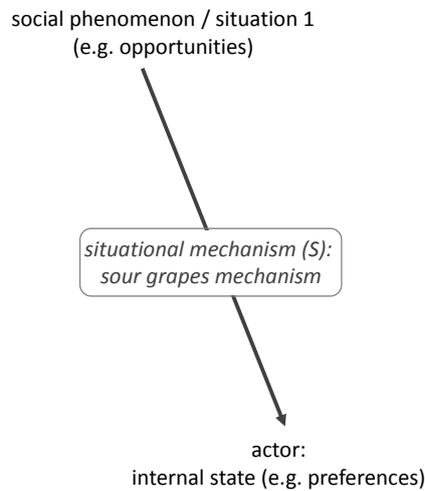


Figure 2: The sour grapes mechanism as an example of an elementary situational mechanism (type: S).

It is useful to combine both approaches for distinguishing several types of mechanisms. We regard every mechanism of the macro-micro-macro schema which stands on its own as an elementary mechanism and every concatenation of elementary mechanisms as a molecular mechanism. Situational and action-formation mechanisms are by definition elementary mechanisms, because both only comprise one step of the macro-micro-macro schema. Against this backdrop, the aforementioned *sour grapes mechanism* (cf. *figure 2*) can be classified as an elementary situational mechanism because the causal story of the mechanism is limited to the linkage of a social phenomenon (opportunities) with an internal state (preferences). The mechanism of rational imitation (cf. *figure 3*), by contrast, is a molecular mechanism that comprises both a situational and an action-formation mechanism. The (elementary) situational mechanism describes the process of a belief-formation, whereby beliefs about successful action strate-

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several theories of social order. They used the distinction between situational, action-formation and transformational mechanism as a heuristic for the exposition of the crucial causal thesis of various theories.

gies are modified by the observation and evaluation of the actions of others. The (elementary) action-formation mechanism is a rational choice: the actor chooses the optimal course of action with respect to stated interests and beliefs about opportunities and their effects.

When it comes to transformational mechanisms it is more complicated to decide the status of this class of social mechanisms. There are elementary as well as molecular transformational mechanisms. Elementary transformational mechanisms explain an outcome at an aggregate level without referring to situational and/or action-formation mechanisms. Examples are institutions like electoral laws which aggregate single votes into the distribution of seats in the parliament. However, most transformational mechanisms comprise successive sequences of the macro-micro-macro schema and are therefore molecular. For example, if the challenge is to understand why a homogenization of action patterns within a particular population evolved over time, a transformational mechanism is needed which can explain how a number of actors came to a reciprocal convergence of their actions. The mechanism of rational contagion (cf. *figure 3*), e.g., sequentially extends the mechanism of rational imitation: the more people rationally imitate the behavior of others, the more attractive imitation becomes for the ‘not yet imitating individuals’ because they can reasonably interpret the behavior of the majority as a promising action strategy. The transformational mechanism of rational contagion concatenates several macro-micro-macro sequences of rational imitation and therefore is a molecular transformational mechanism.

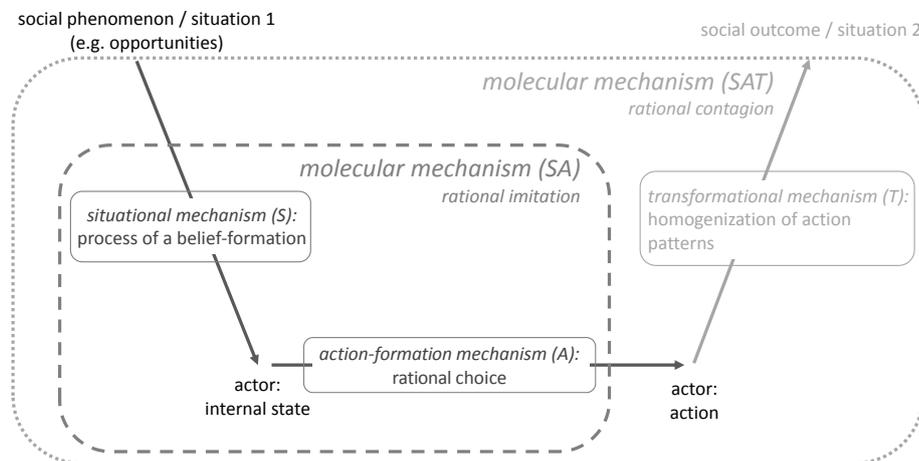


Figure 3: Rational imitation as an example of a molecular mechanism (type: SA) and rational contagion as an example of a molecular mechanism (type: SAT).

#### 4. Social Mechanism and Action Theories

Because the social mechanism approach generally follows the methodological ideas of structural individualism, it requires an action theory as a microfoundation. Neither the methodological principles of structural individualism nor the core idea of social mechanisms predetermine a specific action theoretical model.<sup>12</sup> In the past decade, there has been an intense debate about how to conceptualize human action for social scientific explanations. In particular, theorists inspired by RCT have suggested a number of elaborated action theoretical models. The point of departure of these models is the empirical evidence that the restrictive premises of standard RCT regarding preferences, beliefs, and cognitive abilities are false and therefore not an adequate microfoundation for the social sciences.<sup>13</sup> However, instead of rejecting this approach completely, theorists have developed wider versions of RCT, which relax some assumptions of the *homo oeconomicus* model (cf. Opp 1999; Kalter/Kroneberg 2012).<sup>14</sup> There are several versions of wide RCT approaches, examples of which include the theory of cognitive rationality (Boudon 1996), the theory of program-based behavior (Vanberg 2002), the theory of social rationality (Lindenberg 2013), and the model of frame selection (Esser 2009; Kroneberg 2014). These theories commonly reject the restrictive rationality assumptions of the *homo oeconomicus* model without giving up RCT's core idea that human behavior, either in the form of singular acts of decision or of dispositional behavior, is rationally adapted, i.e., responsive to incentives and the interest of an actor (cf. Vanberg 1993).

AS, which is the dominant approach within the social mechanism debate, moves away from action theoretical debates and expresses skepticism toward the enterprise of developing a sociological action theory (Hedström 2005; Hedström/Ylikoski 2010; 2014). Hedström and Ylikoski (2014, 68) state that the endeavor to build a genuine sociological action theory was a failure because it did not contribute to the understanding of social processes in a significant way: "Such efforts have produced many concepts but no mechanisms, many approaches but no arrivals." (68) Hedström and Ylikoski acknowledge the fundamental role of knowledge regarding human behavior for mechanism-based explanations. In opposition to most advocates of RCT within sociology, they argue that "sociology does not need a foundational theory of action of its own" (67). Instead of subscribing to one coherent action theory, analytical sociologists rather suggest the use of various insights into human behavior from empirical sociological research and from other disciplines such as psychology and cognitive science.

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<sup>12</sup> Not all authors share the position that the methodological approach of structural individualism does not predetermine a specific action theory. In this volume, Maurer links structural individualism to RCT and distinguishes between the social mechanism approach of analytical sociology and structural individualism as two distinct methodological positions.

<sup>13</sup> For an overview, see Elster 2009, especially chapters 12 and 20.

<sup>14</sup> In these wide versions of RCT, preferences are not limited to pure egoistic or even material goals; they can comprise such diverse motivations as altruism and the wish to act according to one's identity or internalized norms. Concerning rationality, actors are not assumed to be fully informed about their environment but are assumed to hold subjective beliefs based on incomplete and biased information (cf. Opp 1999).

However, the action theoretical agnosticism of AS in turn demands a minimal theoretical framework, which provides a coherent vocabulary for making use of the diverse knowledge about human behavior for analyzing social mechanisms. Hedström (2005) formulated a DBO model of action, which conceptualizes human action in terms of actors' *desires*, *beliefs*, and *opportunities*. The DBO model is characterized by its theoretical underdetermination and only makes the very general presupposition that actors act intentionally and reasonably in light of their desires, beliefs, and opportunities (Hedström 2005, 38ff.). The baseline of the DBO model is the notion that actors choose an action from a set of known alternatives, which they subjectively believe will bring about the desired outcome. Any action or choice is assumed to be caused by a specific linkage of the three elements, and different types of linkages represent distinct action-formation mechanisms. From the DBO point of view, rational choice, in terms of the homo oeconomicus model, is only one action-formation mechanism beside others such as cognitive dissonance reduction or wishful thinking. The explanatory value of different action-formation mechanisms is seen as an empirical question that cannot be predetermined by an action-theory. Instead of continual development of comprehensive action theoretical models, AS suggests that one should concentrate on composing a toolkit of social mechanisms (see below), which is based on different action-formation mechanisms that do not need to be related to one another within a coherent action-theory (Kalter/Kroneberg 2014, 97).

A shift from developing consistent and well-elaborated sociological action theories to setting up a toolkit with diverse, action-formation mechanisms is appealing at first sight. Nonetheless, we think that AS's suggestion to reject sociological action theories—and especially the statement that action theories only offer concepts but no mechanisms—is hasty and careless. AS's negative attitude toward action theories is primarily due to the deficiencies of standard RCT; wide versions of RCT or other action theoretical approaches are rarely discussed within analytical sociology.<sup>15</sup> The critique of standard RCT is not new and, as already mentioned, is the initial point for wide versions of RCT or kindred approaches such as Collins's (2004) theory of interaction rituals. The broad ignorance of the diverse, well-elaborated action theoretical approaches within sociology is astonishing because the DBO model itself is theoretically underdetermined and in need of completion. Taken by itself, the DBO model is of little explanatory value; no falsifiable hypothesis can be derived from its core assumption. The model is, as Manzo (2010, 157) phrased it, “only the starting point for analysis of the micro component” of social processes. To develop a testable hypothesis within the DBO framework, auxiliary assumptions must be introduced, i.e., assumptions about the linkage between variables of the situation

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<sup>15</sup> An exception is Manzo's (2013) discussion of RCT. Manzo argues that the neo-classical standard version of RCT, although confronted with several theoretical weaknesses, is conceptually and methodologically superior to wide versions of RCT, but its applicability is limited to particular types of choices. As potential alternatives to wide versions of RCT, he discusses four theoretical action approaches: Boudon's (1996) theory of ordinary rationality, the DBO framework by Hedström (2005), Kahneman's *Thinking, Fast and Slow* (2011), and Gigerenzer's notion of heuristics (Gigerenzer/Brighton 2009; Gigerenzer/Gaissmaier 2011).

(opportunities) with variables of the actor (desires, beliefs) that underlie social mechanisms (cf. Diekmann 2010, 194–5).

The question is then how to arrive at these auxiliary assumptions such as reasoned hypothesis concerning the preferences, beliefs and decision modes which are relevant in a particular situation. AS remains silent on this topic and offers no specific methodology that goes beyond the request that the DBO model be enriched with assumptions that are both psychologically and sociologically plausible as well as empirically justified in light of the analyzed phenomena. Because of this theoretical and methodological shortcoming, the DBO model is not a serious alternative to existing action theories in sociology. Nevertheless, analytical sociology makes a relevant point when criticizing sociology for too long having focused on debating action theories' details in place of revealing social mechanisms. Instead of rejecting action theories, an intensive debate between action theories and the social mechanism approach is needed. Existing action theories offer a huge reservoir for specifying empirically testable situational and action-formation mechanisms. At this point, we exemplarily refer to two micro theories that we consider to have potential for inspiring mechanism-based social research.

The first is Esser's (2009b) and Kroneberg's (2014) model of frame selection (MFS). The MFS is an expanded version of RCT that explicitly allows for non-intentional behavior such as habits or internalized norms. MFS incorporates the insights from psychological dual-process theories and distinguishes between the reflective-calculating mode (rc-mode) and the automatic-spontaneous mode (as-mode) of action. Furthermore, the MFS determines the conditions under which actors are expected to act according to the rc- and as-mode, respectively. Thus, the MFS provides precise and empirically testable situational and action-formation mechanisms. A second approach, which is compatible to mechanism-based thinking and research, is Collins's (2004) theory of interaction rituals (TIR). The core of the TIR is a well-elaborated mechanism-like model of interaction processes. The interaction model allows for hypotheses about the social (re)production of collectively shared symbols, solidarity, and moral feelings as an outcome of recurring interaction-sequences. From a mechanism perspective, one does not need to share Collins's idea—that the interaction model is the core of a general social theory—but this model can be used for mechanism-based analyses of a huge variance of interaction-based group processes, from daily encounters among neighbors to political mass movements.<sup>16</sup>

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<sup>16</sup> How Collins's TIR can be used for mechanism-orientated explanation was demonstrated by Baker (2010). He uses the model of interaction rituals to shed light on the classical, yet not well understood, finding of rational choice theorists that "strict churches are strong" (Iannaccone 1994). By means of empirical analysis, Iannaccone shows that churches with strict behavioral norms are successful in overcoming the free ride problem and producing internal solidarity. However, his argumentation remains blurred regarding *how* strictness produces internal solidarity. Baker's quantitative study of worship rituals demonstrates that strictness fosters successful interaction rituals with collectively shared moral feelings and a binding toward group norms as an outcome.

## 5. Social Mechanisms as Explanatory Tools

The long-term vision of the social mechanism approach is to establish a repertoire of well-elaborated social mechanisms, which function as a theoretical toolkit for empirical research and theory building. Because causal relations between variables cannot be derived from empirical associations among them, the toolkit offers empirically testable hypotheses about the relations (cf. Little 2011, 275). It is to be expected that, in many cases, several social mechanisms from the toolkit are plausible explanations of the phenomena of interest. For the sake of illustration, let us assume that we wanted to explain the diffusion of a particular mode of behavior within a population between  $t_1$  and  $t_2$ . There are at least two mechanisms that offer a plausible hypothesis. According to the mechanism of rational imitation (Hedström 1998), diffusion results from imitative behavior as a mean of arriving at better decisions; according to the mechanism of dissonance reduction (Festinger 1957), the diffusion would appear as a subintentional adaptation of behavior for avoiding psychological stress, which results from deviation.<sup>17</sup> Because it is not possible to decide on theoretical grounds which of these two (if any) mechanisms actually produced the outcome, empirical evidence is needed to support or disprove the causal story they offer. Only an empirical check of the assumptions made by the social mechanisms considered prevents speculative mechanism-based storytelling (cf. Hedström/Ylikoski 2010, 53).

A toolkit equipped with well-elaborated mechanisms is not only useful for empirical research but also for adding precision and depth to the generative processes of existing theoretical models. For example, the model of social production functions makes an argument concerning the macro-micro-transition (cf. Lindenberg 2001). The model assumes that individuals' preferences are dominantly shaped by cultural and material restrictions for realizing the universal goals of physical and social well-being. However, the model of social production functions remains silent on the point of *how*, i.e., through which steps cultural and material restrictions shape individual preferences. Consequently, the model of social production functions offers no satisfactory answer on the question of *why* we can—at least partly—empirically observe a systematic relationship between material and cultural restrictions and individual preference-formation.<sup>18</sup> Potential mechanisms that could complete the model of social production functions are social learning (Bandura/Walters 1963; cf. Friedrichs in this volume) or, again, rational imitation (Hedström 1998).

The systematic application of social mechanisms in empirical research and/or theory building is still in its early stages. Nevertheless, there are excellent examples of the application of well-elaborated mechanisms for explanatory purposes. One research strand that draws on general mechanisms is the RCT-based

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<sup>17</sup> The example of rational imitation and dissonance reduction as two mechanisms, which are candidates for the explanation of an observed outcome, was inspired by Hedström 1998.

<sup>18</sup> For an empirical application of the model of social production functions, see Nauck and Klaus's (2007) international comparative study of fertility rates. The study confirmed the core hypothesis of the model, which stated that the fertility rate systematically varies with the social-structurally determined value of children for producing parents' physical and social well-being.

approach toward social inequality in educational transitions (Erikson/Jonsson 1996; Breen/Goldthorpe 1997; Esser 1999a). The Breen-Goldthorpe (1997) model explicitly refers to the mechanism of relative risk aversion (Tversky/Kahneman 1981; Kahneman/Tversky 1984) to explain that lower-class parents more frequently abstain from higher educational tracks: a guaranteed certificate at a lower educational track outweighs the risk of failing in a higher educational track. Due to the above-mentioned differences in resources and beliefs, this calculus does not equally hold for higher-class parents.<sup>19</sup>

Setting up a toolkit of well-elaborated social mechanisms is a highly ambitious aspiration of the social mechanism approach, which rests on the presupposition that generalizable properties can be abstracted from specific social processes. The social mechanism approach underlies the ontological assumption that there is a generative grammar of the social, and that at least some social phenomena, which vary in their phenotypical appearance, are brought into existence by the same constellation of entities and their activities. The major challenge related to setting up the toolkit is the identification of social mechanisms “specific enough to have explanatory value for particular observed outcomes or relationships, but at the same time general enough to apply in different empirical fields” (Mayntz 2004, 254). A realization of the toolkit vision demands that scholars from diverse terrains of social sciences attempt to distill general and transferable mechanism models from their research. Although the mechanism idea is quite popular among social scientists, we think that inadequate effort has been devoted to this goal. However, there are exceptions that demonstrate an instructive manner for pushing the social mechanism program forward. This volume presents several methodical approaches that aim to empirically discover and test social mechanisms, e.g., quantitative survey analyses for testing the variability of lower level regression slopes in multilevel analyses and their dependence on higher level (such as contextual) parameters (Becker et al. in this volume). To demonstrate the wide-ranging applicability of the concept of social mechanisms, the two approaches presented below, in contrast, illustrate pathways for the discovery of social mechanisms beyond survey, experimental, or ABM methodologies.

One example is the historical-sociological work of McAdam, Tilly, and Tarrow on “contentious politics” (McAdam et al. 2001). In their comprehensive study, McAdam and colleagues analyzed heterogeneous forms of political contentions such as revolutions, ethnic mobilizations, wars, and strikes. To make explanatory sense of their data, they searched for common social mechanisms that worked in similar ways across the different cases. By analyzing, reviewing and correlating the French Revolution, the American civil rights movement, and the student rebellions in Italy during the 1960s, they demonstrated that these events were moved and transformed by roughly the same social mechanisms. The commonalities between these cases only become visible when the historical details are abstracted away in favor of focusing on the driving forces of the episodes

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<sup>19</sup> The rational-choice approach to social inequalities in educational transitions constitutes not only a good example of a research strand that draws on a general mechanism, it is also an excellent illustration of how to pursue a mechanism-based research agenda with quantitative methods (for an overview, see Breen/Jonsson 2005).

of contentious politics (McAdam et al. 2001, 32–3).<sup>20</sup> Although McAdam et al. have been criticized for not defining and documenting the mechanisms carefully enough, their research is an instructive example of the disaggregation of different kinds of macro-events in the search for general social mechanisms.<sup>21</sup>

Another example of this search is Ostrom’s (1990) research on institutions’ solving of common-pool resource problems.<sup>22</sup> From comparative case studies of successful and unsuccessful appropriations of common-pool resources in varying historical, social, and cultural settings, Ostrom distilled eight institutional design principles that increase the probability of a successful management of resources.<sup>23</sup> These institutions work because they help overcome the two crucial problems of common-pool resources: the problem of a credible commitment toward the rules in the face of temptation and the problem of installing an effective monitoring system under the conditions of a second order collective good dilemma. Although Ostrom neither explicitly refers to a specific concept of social mechanisms nor to the mechanism debate in general, her research widely follows the principles of the social mechanism approach. For most design principles, Ostrom specifies *how* these institutions modify the preferences, beliefs, and opportunities of the actors and trigger social dynamics of a sustainable appropriation. Ostrom’s research aptly shows that there is mechanism-based thinking in social sciences beyond the mechanism debate.<sup>24</sup>

The setting up of a well-elaborated toolkit of mechanisms demands the discovery and theoretical elaboration of (new) social mechanisms. There is neither an established praxis nor a methodical instruction for how to proceed in this process. Nevertheless, we believe that four crucial steps can be derived from the four characteristics of mechanisms (cf. *figure 4*). Because social mechanisms are generative, the first step is the identification of the phenomena which a mechanism is supposed to bring about. Social mechanisms produce an outcome through an organized constellation of entities and activities; therefore, the second step is the identification of these entities and their action/interaction. Because so-

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<sup>20</sup> The mechanisms are, among others, “creation of new actors and identities through the very process of contention; brokerage by activists who connected previously insulated local clumps of aggrieved people; competition among contenders that led to factional divisions and re-alignments” (McAdam et al. 2001, 32). Furthermore, McAdam et al. emphasized that “these mechanisms concatenated into more complex processes such as radicalization and polarization of conflict; formation of new balances of power; and re-alignments of the polity along new lines” (33).

<sup>21</sup> For a critical appraisal of the work of McAdam et al. from a mechanism perspective, see Little 2010; for a severe criticism of the explanatory power of their approach from the perspective of RCT and the D-N model of explanation, see Opp 2009, ch. 10.

<sup>22</sup> Common-pool resources are defined as natural or human-made resource systems, from which potential beneficiaries principally either cannot, or can only at high costs, be excluded (Ostrom 1990, 30).

<sup>23</sup> These design principles include: (1) clearly defined boundaries, (2) congruence between rules and local conditions, (3) collective-choice arrangements, (4) monitoring, (5) graduated sanctions, (6) conflict-resolution mechanisms, (7) minimal recognition of rights to organize, and (8) nested enterprises (Ostrom 1990, ch. 3).

<sup>24</sup> This example is inspired by Baurmann and Friedrichs’s paper “The Methodology of Elinor Ostrom”, presented on the *AnaGramm* workshop *Social Mechanisms: Methodological Challenges, Empirical Applications and Modeling Techniques* (November 2014).

cial mechanisms are abstract, the third step is the derivation of the significant causal factors. Finally, because social mechanisms are general, the fourth step is to determine if the causal structure of the social mechanism can also be found in other cases.

- (1) Social mechanisms are *generative*.  
⇒ Identification of the phenomena that a mechanism is supposed to bring about
- (2) Social mechanisms are made up of *organized entities and activities*.  
⇒ Identification of these entities and their action/interaction
- (3) Social mechanisms are *abstract*.  
⇒ Derivation of the significant causal factors
- (4) Social mechanisms are *general*.  
⇒ Test to determine if the causal structure can also be found in other cases

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⇒ Pooling and systematization of social mechanisms in a ‘toolkit’

Figure 4: Discovery and theoretical elaboration of (new) social mechanisms: four characteristics of social mechanisms and four derived crucial steps.

The process of identifying social mechanisms can involve inductive reasoning from empirical observations, derivations from other mechanisms or theories, and the interplay between these strategies. The discovery of a social mechanism usually proceeds from a first rough sketch toward an improved and more precise elaboration as the knowledge about the described generative sequences increases in detail through repeated applications on different empirical cases. Social mechanisms already present in the toolkit should therefore not be considered as the ultimate but rather as the preliminary models, which might be revised as social scientific knowledge expands. Notably, the practical value of a social mechanism as a research tool varies with its level of elaboration. A mechanism model is of great use if it is abstract enough to be transferable to a wide range of social settings yet precise enough to allow for an empirical examination.

An example of the discovery of social mechanisms is Pajunen’s case study of the organizational decline of the Finnish conglomerate Tampella (Pajunen 2008).<sup>25</sup> There are no well-elaborated “mechanisms of decline” in organizational studies; therefore, this study has the character of a “discovery process” (Pajunen 2008, 1455). Through referencing former studies and empirical findings of the case, Pajunen identifies four mechanisms of the organizational decline of Tampella: commitment escalation, maladjustment, confidence erosion, and fragmentation. Pajunen’s case study fulfills the requirements of a mechanism-based explanation; the mechanisms’ workings are spelled out in detail, with reference to the activities and interactions of their relevant entities along with how the four mechanisms’ concatenation produces the outcome. The discovered mechanisms provide a solid explanation of the case of Tampella; however, whether or

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<sup>25</sup> For another example, see Birkelund in this volume.

not they are generalizable and, if they are, to what extent, can only be answered through further research.

The discovery of new social mechanisms and the pooling of social mechanisms in a toolkit aim to develop the explanatory potential of the social sciences as a whole beyond specific research fields. To achieve this objective, the social mechanisms of the toolkit must be not only well elaborated but also clearly denoted linguistically. When a common language is used for denoting the same generative processes, cross-sectional adaptations of research insight will become more likely, and the degree of shared social scientific knowledge will continuously improve in a collective scientific endeavor.

## 6. An Overview of the Issue

The aim of this special issue is to provide a selection of articles that, foremost, utilize the theoretical concept of social mechanisms in the context of specific research domains of the social sciences. Additionally, the aim of the articles is to answer research questions via many distinct methods to provide various linkages with mechanism-based explanations and thereby reflect different methodical positions. The volume comprises three sections: I) Explanatory and Analytical: Understanding the Contexts, Core, and Collective Outcomes of Action; II) Bridging the Gap with Quantitative Survey Research; III) Experiments, Agent-Based Modeling, and Mixed Methods.

In *Part I*, three authors discuss the theoretical approach of social mechanisms and relate it to other frames of explanation, specific fields of research, and related methodological debates. In doing so, they link their research to existing debates on social mechanisms and also show new perspectives to answer the ‘why and how’ questions, which guide the goals of explanation and understanding.

*Andrea Maurer* portrays “Social Mechanisms as Special Cases of Explanatory Sociology”. Maurer compares the aims and formal characteristics of structural individualistic explanations and analytical sociology, which she defines as two distinct research strategies that have shaped sociological thinking in the past three decades. Maurer presents a convergence of the two approaches for the case of opportunity-mediated mechanisms. Using the example of competition in the works of Norbert Elias and Heinrich Popitz, she captures the typical ‘why and how’ questions of the social mechanism approach to understand the processes of forming power and inequality, and an unequal distribution of opportunities, such as those of scarce social or political resources, as a macro level outcome. From Elias’s and Popitz’s intuitive understandings of mechanisms, Maurer sets out to critically comment on Peter Hedström’s approach by contrasting with James Coleman’s and Siegwart Lindenberg’s “multi-level model of explanation”. Her article additionally offers a formal structure of mechanism-based explanations and a proposal for an expansion of the social mechanism approach. Maurer pleads for theory-driven systematization of mechanism types based on social constellations in terms of interests and opportunities. As with all contributions to this volume, her proposal is not only theoretical but includes a specification regard-

ing phenomena of interest: conflict structures, competition mechanisms, and distributional effects. Maurer compares the mixed motives of competition under relative advantages with competition under antagonistic interests and identifies how the competition mechanism acts differently, according to the initial constellation. By discussing the implications of working either with the formal structure of structural individualism or within the logic of a mechanism-based explanation, she sensitizes the readers for the consequences of these meta-theoretical decisions, and she advocates the effort toward improving explanatory theories with the help of social mechanisms to provide better points of departure for empirical research.

*Peter Graeff's* contribution is tied to a field of applied research and introduces “Social Mechanisms of Corruption” as an example of a research field that spans several disciplines but lacks a common explanatory framework. Starting from a core model of corruption and referring to bribing behavior, Graeff demonstrates that the social mechanism approach offers an integrative framework for different disciplinary perspectives of corruption. Graeff relies on analytical sociology to compare counteracting mechanisms from existing sociological and economic corruption research. More concretely, he combines economic contracts, principal agent theory, situational conditions of corruption opportunities, and social relations of the agent and client under the analytical roof of mechanism-based explanation. He stresses the test of explicitly defined counteracting mechanisms as a major advantage because it allows the augmentation of analysis of a social phenomenon by regarding different causes with the same outcome. Although empirical applications are rare, Graeff considers analytical sociology and mechanism-based explanations as a valuable theoretical framework for bridging disciplinary boundaries. Graeff also points out that mechanisms in existing research are often not labeled in this manner. In our view, this aspect identifies a perspective and a task for systematization and theory development across disciplinary boundaries along the lines Maurer has proposed in her contribution.

*Jürgen Friedrichs's* article “Neighbourhood Effects: Lost in Transition?” takes a different theoretical point of departure, which has been developed previously and parallels the mechanism debate—namely, a long running research tradition on context effects and, more specifically, the example of neighborhood effects in urban sociology. Against the backdrop of Gross's definition of mechanisms as a “causal relationship linking a condition X to an outcome Y”, Friedrichs conceptualizes mechanisms as specifications of context effects. His proposal thus relies on the explanatory power of effects but aims at enriching the narratives provided by this approach. His macro-micro-macro model of individuals in neighborhoods is supplemented by considering a meso level of institutions. This allows the bridging of the macro and micro in a more refined manner. Friedrichs's focus is on “linking” as opposed to the mere “impact” of an effect, i.e., the explicit specification of mechanisms is important. He illustrates this by disentangling and systematizing different neighborhood effects and illustrating related social mechanisms step by step. For the neighborhood effects under study, both the observed violation of norms, i.e., deviant behavior and the subjectively assumed adherence to norms among the residents, are important. Friedrichs provides a

rich illustration of the ways in which mechanisms work by referring to social or cognitive learning theory, stressing the processual character and the aspect of gradual change, and providing more specifications to arrive at mechanisms of social learning. His study illustrates both how a process may be dissected into its constituent parts and why the answers to ‘why and how’ questions demand this detailed procedure and an understanding of social interaction and networks. Thus, in addition to the contextual effects, it is the social embeddedness of actors in a more general sense that we identify as an important contribution which Friedrichs also accentuates in his discussion of neighborhood effects and related mechanisms. In more basic terms, “specifying assumptions” of the mechanisms is identified as a prerequisite for better operationalization, and this implies the advancement of micro-level research.

In *Part II*, the special issue assembles empirical contributions, which share the choice of quantitative statistical methods used in survey research to analyze social mechanisms. This part offers a distinctively different perspective as compared to other volumes on social mechanisms because this choice of methods is not largely advocated by proponents of the social mechanisms approach; however, it provides many linkages between theoretical explanations and existing fields of empirical research via rich and realistic data sets. The aim of the selected articles is to provide impulses for bridging the gap or the gulf (Hedström 2005) between social mechanisms and survey research.

*Stefanie Eifler’s* contribution to “Social Mechanisms in Norm-relevant Situations: Explanations for Theft by Finding in High-cost and Low-cost Situations” links to both Graeff’s and Friedrichs’s papers via a focus on analysis of criminal action in the presence of opportunities, i.e., situational and context-bound conditions. Eifler provides a theoretical and empirical analysis of action-formation mechanisms in situations where norms are important, such as unplanned thefts, by finding them in everyday situations. Eifler’s study illustrates how a theoretical specification of two mechanisms—action according to moral principles and the principle of deterrence—can be linked to an empirical survey-based research design, and how the application of multivariate data analysis provides answers to the ‘why and how’ questions. In line with Maurer’s and Graeff’s proposals, Eifler compares competing theoretical claims (high/low cost hypotheses and situational action theory) and translates them into mechanism-based explanations by detailing how the two mechanisms theoretically work. These theoretical considerations are related to empirical research hypotheses, which are tested in a cross-sectional mail survey using a factorial survey or vignette design to analyze the causal influences of situational characteristics on presumable actions. The selected two-factor between-subjects design shows how theoretical assumptions on social mechanisms can be tested with techniques of statistical survey analysis including multi-group comparisons and patterns of interaction. The study also sheds light on possible theoretical advancements based on the empirical results, showing that, in both high- and low-cost situations, the perception of situations as opportunities depends on the acting person’s adherence to moral principles. Additionally, the empirical interaction between the expected costs of negative consequences and the adherence to moral convictions in high-cost

situations further adds to theoretical refinements in social mechanisms. That demands a re-translation of the results of empirical studies, such as Eifler's, into the theoretical language of social mechanisms.

While *Johannes Kopp and Nico Richter*, along with Eifler, share the application of statistical survey methods, they focus on a different topic. In their article "Social Mechanisms and Empirical Research in the Field of Sociology of the Family: The Case of Separation and Divorce", they provide further evidence of the general applicability of the social mechanisms approach and the possibility of linking it with large-scale survey data. They show how macro-structural traits are mechanistically connected with individual properties and how they lead to a stable or fragile partnership. The authors stress that a significant amount of theoretical and empirical work exists and the underlying idea of social mechanisms is employed, but the term 'social mechanism' is rarely used. Kopp and Richter illustrate mechanism-based thinking by means of the exchange approach and new home economics, and they state that there is no contradiction between the research agendas of family sociology and mechanism-based explanations. The authors argue that the main challenge is "to make research more concrete" and to derive concrete mechanistic explanation from general theoretical ideas. They do this by focusing on social mechanisms and the stability of close relationships. The chosen strategies are to avoid all-encompassing models, look at a more detailed specification of a few mechanisms in the "matching process", and avoid the use of complex autotelic data structures and statistical procedures. The model shows that the presented mechanisms are processes that are difficult to directly operationalize (with the employed multivariate discrete time event history analysis), i.e., the results allow inference of the mechanisms at work, provide an analytically derived explanation and use theoretical considerations as proxies for the underlying mechanisms. Given the shortcomings of measures and information in large-scale surveys, the authors advise to use specific studies focusing on exactly those mechanisms that shall be studied.

*Dominik Becker, Tilo Beckers, Simon Tobias Franzmann, and Jörg Hagenah* engage in "Contextualizing Cognitive Consonance by a Social Mechanisms Explanation" and add to this part's aim by showing that situational and action formation mechanisms can be analyzed with advanced quantitative methods, specifically with a multi-level moderator model. The authors thereby not only provide additional evidence of the necessary specification of context effects but also a stronger focus on the identification of different social mechanisms. They observe the psychological mechanism of selective exposure in the readership of quality newspaper usage and how it is in consonance with one's leftist vs. rightist party identification. Additionally, Becker and colleagues amend this psychological mechanism of genuine social mechanisms in both the cross-sectional and longitudinal perspectives and provide tools of analysis for time-variant social mechanisms. They build an integrated macro-micro-macro of political cleavage, which is linked to an amended version of Shively's model of party identification, i.e., they combine theoretical impulses from specific research fields (cognitive consonance and party identification) and relate them to the abstract and analytical language of mechanism-based explanations to arrive at a formal model of

selective exposure to newspapers. The contribution serves as another example of how social mechanisms can be integrated in a survey research framework of analysis and explores by which methods and result patterns social mechanisms can be detected. This is illustrated by hypothetical interaction and predicted probability plots. They show that well-established techniques of multivariate statistical data analysis can be employed to analyze social mechanisms, e.g., by emphasizing that period and cohort effects are caused by two different types of mechanisms. These types may be identified statistically by cross-classified random effects multilevel models, which belong to a class of techniques using “realistic empirical data to test the existence, stability, and volatility of social mechanisms”.

The contributions of Part II exemplify that the overall task of bridging the gap or gulf between theory and survey research must be approached from both sides. The necessary dissemination of mechanism-based theorizing and research may then improve innovation and progress for the social sciences as a whole.

In *Part III*, the special issue looks beyond the opportunities and restrictions of survey-based mechanism research to present different methodological strategies including field and laboratory experiments and agent-based models. Two more contributions advocate the use of mixed-methods designs to enrich mechanism-based explanation and understanding, and to systematize the differences and similarities in causal identification and causal heterogeneity in a range of methods of analysis for social mechanisms.

*Marc Keuschnigg and Tobias Wohlbring* investigate “The Use of Field Experiments to Study Mechanisms of Discrimination”. They discuss social mechanisms of discrimination and review existing field experimental designs for their identification. Preference-based and statistical discrimination are identified as two separate social mechanisms to explain differential treatment based on ascriptive characteristics of individuals. First, the authors provide an overview of available methods for the study of these social mechanisms: a) observational survey designs (and their weaknesses such as social desirability and ex-post rationalizations of reported behavior), b) indirect identification strategies using observational data such as the residual approach (with a lack of explication of the theoretical assumptions about the causal relationships between the covariates in the model), and c) laboratory experiments as one option of an interventionist approach (with the weakness of an inability to construct a perfect counterfactual and limited external validity). Then the authors turn to d) unobtrusive field experiments, with correspondence letters as a type of “audit design” to represent a relevant complement (although this technique should be expected to over-estimate discriminatory behavior and therefore demand the use of low-threshold response variables). Keuschnigg and Wohlbring advocate the rapidly growing field of research “which actively intervenes in market activities by varying costs and information”. Thus, they discuss contextual or situational triggers that are important for the activation of different social mechanisms. They discuss two exemplary studies by showing the potentials and limitations in detail and making suggestions for improvements in research design. The authors provide a concise overview of available (experimental) techniques for the study of

social mechanisms. On a substantive level, they conclude that “both preference-based and statistical discrimination can be intertwined, exacerbating empirical identification of separate pathways of discrimination”.

*Gunn Elisabeth Birkelund's* article in a similar field of research discusses situations characterized by the social mechanism of “rational laziness”. In her contribution “Rational Laziness—When Time Is Limited, Supply Abundant, and Decisions Have to Be Made”, she extends the model of rational action by noting that humans often rely on automatic and non-cognitive mental capacities. Linking to the idea of context effects and situational triggers, Birkelund tests both if and how far the choice of rational-calculating or automatic-spontaneous mental decisions is contingent on the social location of actors within an opportunity structure. Her multi-method case study research concerns employers' hiring processes: their “activation of these action generating mechanisms are expected to be influenced by their opportunities in the labor market”. Birkelund dissects the different stages of the hiring process into its constituent parts and theoretically relates her research to James Coleman's tradition as well as more recent theoretical developments by Hartmut Esser and Clemens Kroneberg. She ideal-typically bridges the research domain of ethnic labor market discrimination and mechanism-based explanation with a research design that provides rich field information, which goes beyond large-scale survey data. The design allows us to better understand employers' reactions to first- and second-generation immigrants and the significance of their foreign names based on rational theories of taste-based and statistical discrimination, and is supplemented by non-cognitive perspectives of psychological automatic categorizations. The latter implies stereotyping and attributing group characteristics to individuals in groups, resulting in the model of bounded rationality and satisficing by Herbert Simon. The mechanism of rational laziness is a prime example of contextualized decision-making: “With many applicants, the employer might screen the applications on the basis of his/her automatic and non-cognitive in-/out-group classifications. With few applicants, the employer would process all applications.” Birkelund's rich empirical evidence (a field experiment with an Implicit Association Test, an explorative study of names, a randomized field experiment, and follow up interviews) is used to test the detailed mechanism-based assumptions. Two important findings are that “employers' unwillingness to distinguish between first- and second-generation immigrants is related to their out-group definition, based on the job applicants' names” and that discrimination is more common in unskilled than skilled work; both may aggregate to a discouraged worker effect. By studying situational and action-formation mechanisms and outlining possible more complex and dynamic transformative mechanisms, Birkelund's study shows how a concatenation of mechanisms works (Gambetta 1998). This points to a general problem in different subfields of sociology and the social sciences—the implicit use of a concept that is not spelled out in detail and thereby lacks the possibility of being translated back into theoretical explanations.

*Simon Tobias Franzmann and Johannes Schmitt* study “How the Mechanism of Dynamic Representation Affects Policy Change and Stability”. The authors observe contradictory results concerning policy stability: stasis or a blockade for no apparent reason as opposed to situations of policy change, where one would expect blockades due to veto points or countervailing majorities. Similar to the contributions in Part II, such as those of Becker and colleagues or Eifler, the authors relate field specific theories to a general mechanism-based explanation: they combine established models of veto player theory with the findings of political sociology and party competition and derive specific social mechanisms. In contrast to other contributions, Franzmann and Schmitt utilize Agent-Based Modeling (ABM) as the dominant method. Similar to Birkelund’s contribution, the authors analyze the entire process. In their research, they combine the situational logic of veto player theory by Tsebelis with the action-formation mechanisms of relative gain and dynamic representation. Franzmann and Schmitt’s aim is to show how the transformational mechanism of influence leads to the model-based observed outcomes in multi-party democracies. The ABM allows the authors to combine formerly separated branches of argumentation into a single framework, to vary the presence of all explanatory parameters in the simulation runs, and to examine counterfactual dependencies against specific simulation results’ conditions. By unfolding the general sequence of action in modeling terms and specifying the model’s properties, i.e., parties’ decision-making and voters’ evaluation under the impact of different input parameters and runs, they are able to quantify the impact of different situational and action-formation mechanisms and to explain policy change and stability. To inspect four-way interactions on the macro-level, the authors use the consistency measurement offered by Qualitative Comparative Analysis (QCA) in an additional logistic regression model based on a step-by-step deductive logic. They are able to derive clear-cut conclusions: (1) “The more voters who hold the opposition responsible for government action, the more likely policy change is”; and (2) “The more parties rely on vote-seeking considerations (but not exclusively on them), the more the probability for policy change rises”. Thus, “the democratic mechanism of dynamic representation can work against deadlocks and blockades” and “parties behaving responsively do not automatically guarantee perfect responsivity on the party system level”.

All three papers discussed either propose making use of a different combination of techniques of analysis to study social mechanisms, or comparing the advantages and limitations of different approaches. While some authors suggest, as we would like to say, intertwining techniques, i.e., combining the process of dissecting social mechanisms with a specific problem and mechanism tailored methods of analysis, *Jörg Stolz* proposes a distinct methodological strategy for “Opening the Black Box” and shows “How the Study of Social Mechanisms Can Benefit from the Use of Explanatory Mixed Methods”. He doubts that representative surveys, experiments, or agent-based models can aptly find and test the actual mechanisms that have produced the explanandum and claims that the postulated mechanisms remain speculative, i.e., they are a narrative adopted for explanation. Stolz adds that these techniques do not “give access to some

of the central elements of the causal mechanisms and the relevant subjective and objective contextual parameters”, and specifically complex cultural meanings remain hidden with the fast changing reality of actual social mechanisms. Stolz proposes “explanatory mixed methods” as a special type of mixed methods research. He proposes five rules: (1) realist philosophical assumptions and the “one logic of explanatory inference”, (2) the formulation of the explanatory research question, (3) validity issues in the research design phase, (4) data collection on mechanisms and contexts, and (5) the reconstruction of mechanisms and contexts using abductive/detective triangulation. The author derives these proposals from the axiomatic assumption of the social world and related social mechanisms as being less stable than those in the physical and biological world and thus they demand powerful methods to meet this volatility. Stolz discusses the added value and the rationale of mixed methods, highlights them as a “way to strengthen the validity of our results, and especially our inferences about causal mechanisms and contextual parameters”, and derives a model of triangulation in the framework of “one logic of inference”. After providing a dozen specific and informative quality rules for explanatory mixed methods, he illustrates the approach with three research examples. The rules and examples provide a set box of how-to knowledge to research social mechanisms in light of explanatory mixed methods.

*Dominik Becker's* article closes the special issue by giving “A Methodological Outlook on Causal Identification and Empirical Methods for the Analysis of Social Mechanisms”. Similar to Stolz, Becker reviews experimental, quantitative, and simulation methods and adds Qualitative Comparative Analysis (QCA) to this list. He stresses the common methodological perspective when employing a social mechanisms approach and uses the question of causal identification as a yardstick for this explanatory program. Other than Stolz, who takes the weaknesses of the different techniques as a justification for developing a new explanatory mixed methods program, Becker investigates in which way the different methods tackle the answers to the ‘why and how’ questions and more specifically how they address causal heterogeneity in the input-mechanism-output (IMO) relations in question. While Stolz addresses qualitative methods in the sense of understanding micro-methodology by addressing the issue of subjectivity as well as the complexity of differences and changes, Becker discusses the logical approach of Qualitative Comparative Analysis as one strategy of addressing macro-social and large-scale differences and changes. Stolz’s proposal and Becker’s outlook show that the social sciences as a whole, but also sociology itself, are confronting a broad range of research questions, which demand tailored techniques of analysis. Answers to many research questions would profit from more elaborate research designs, which combine explanatory mixed methods of different origins. As Becker notes, in addition to causal heterogeneity, the problem of multiple realizability and combinations of realist counterfactual conditions are methodological problems that demand further attention. As with all research traditions, mechanism-based research would also profit from very clear research questions and competitive answers from different methodological viewpoints with cross-comparisons of results, chains of mixing methods, and, at best,

tailored, intertwining techniques, which would allow for a rule-bound translation of results. Apart from these methodological considerations and the theoretical work on social mechanisms, systematization and classification are still a huge research desideratum, which demands the collective efforts of the social sciences. The most important prerequisites for the success of this project are the informed use of the concept of social mechanisms and the development of research designs that address the ‘why and how’ questions, which dissect the social processes and the roles social mechanisms play in unfolding these processes. Only then is it possible to make mechanisms work as a shared concept for the progress of sociology and the social sciences. This special issue is intended to contribute to this overall endeavor.

## Bibliography

- Baker, J. O. (2010), Social Sources of the Spirit: Connecting Rational Choice and Interactive Ritual Theories in the Study of Religion, in: *Sociology of Religion* 71, 432–456
- Bandura, A./R. H. Walters (1963), *Social Learning and Personality Development*, New York
- Becker, D. (2016), Mechanismen, soziale, in: Kopp J./A. Steinbach (eds.), *Grundbegriffe der Soziologie*, 11. Aufl., Wiesbaden, 217–223
- Becker, R./A. E. Hecken (2009), Higher Education or Vocational Training? An Empirical Test of the Rational Action Model of Educational Choices Suggested by Breen and Goldthorpe and Esser, in: *Acta Sociologica* 52, 25–45
- Bechtel, W./A. Abrahamsen (2005), Explanation: A Mechanist Alternative, in: *Studies in History and Philosophy of Biological and Biomedical Sciences* 36, 421–441
- Boudon, R. (1979), Generating Models as Research Strategy, in: Merton, R. K./J. S. Coleman/P. H. Rossi (eds.), *Qualitative and Quantitative Social Research*, New York, 51–64
- (1996), The ‘Cognitivist Model’: A Generalized ‘Rational-Choice Model’, in: *Rationality and Society* 8, 123–150, URL: <http://doi.org/10.1177/104346396008002001>
- /J. H. Goldthorpe (1997), Explaining Educational Differentials: Towards a Formal Rational Action Theory, in: *Rationality and Society* 9, 275–305
- /J. O. Jonsson (2005), Inequality of Opportunity in Comparative Perspective: Recent Research on Educational Attainment and Social Mobility, in: *Annual Review of Sociology* 31, 223–43
- Breen, R./M. Yaish (2006), Testing the Breen-Goldthorpe Model of Educational Decision Making, in: Morgan, S. L./D. B. Grusky/G. S. Fields (eds.), *Mobility and Inequality*, Stanford, 232–58
- Coleman, J. S. (1990), *Foundations of Social Theory*, Cambridge
- Collins, R. (2004), *Interaction Ritual Chains*, Princeton
- Cherkaoui, M. (2005), *Invisible Codes. Essays on Generative Mechanisms*, Oxford
- Demeulenaere, P. (2011), Introduction, in: Demeulenaere, P. (ed.), *Analytic Sociology and Social Mechanisms*, Cambridge, 1–30
- Diekmann, A. (2010), Analytische Soziologie und Rational Choice, in: Kron, T./T. Grund (eds.), *Die Analytische Soziologie in der Diskussion*, Wiesbaden, 193–202
- Edling, C./P. Hedström (2009), Tocqueville and Analytical Sociology, in: Cherkaoui, M./P. Hamilton (eds.), *Raymond Boudon: A Life in Sociology. Essays in Honour of Raymond Boudon*, Vol. 1, Oxford, 153–172

- /J. Rydgren (2014), Analytical Sociology: Bringing Culture and Identity Back, in: *Sociologica* 2
- Elster, J. (1983), *Sour Grapes. Studies in the Subversion of Rationality*, Cambridge
- (1989), *Nuts and Bolts for the Social Sciences*, Cambridge
- (2009), *Explaining Social Behavior. More Nuts and Bolts for the Social Sciences*, Cambridge
- Erikson, R. S./J. O. Jonsson (1996), Explaining Class Inequality in Education: The Swedish Test Case, in: Erikson, R. S./J. O. Jonsson (eds.), *Can Education Be Equalized? The Swedish Case in Comparative Perspective*, Boulder, 1–63
- Esser, H. (1999a), *Soziologie. Spezielle Grundlagen. Bd. 1: Situationslogik und Handeln*, Frankfurt–New York
- (2009), Rationality and Commitment. The Model of Frame Selection and the Explanation of Normative Action, in: Cherkaoui, M./P. Hamilton (eds.), *Raymond Boudon: A Life in Sociology. Essays in Honour of Raymond Boudon*, Vol. 2, Oxford, 207–230
- Festinger, L. (1957), *A Theory of Cognitive Dissonance*, Stanford
- Freedman, D. A. (1987), As Others See Us: A Case Study in Pathanalysis, in: *Journal of Educational and Behavioral Statistics* 12, 101–128
- Gambetta, D. (1998), Concatenations of Mechanisms, in: Hedström, P./R. Swedberg (eds.), *Social Mechanisms. An Analytical Approach to Social Theory*, Cambridge, 102–124
- Gerring, J. (2010), Causal Mechanisms: Yes, But... , in: *Comparative Political Studies* 43, 1499–1526
- Gigerenzer, G./H. Brighton (2009), Homo Heuristicus: Why Biased Minds Make Better Inferences, in: *Topics in Cognitive Science* 1, 107–143
- /W. Gaissmaier (2011), Heuristic Decision Making, in: *Annual Review of Psychology* 62, 451–482
- Glennan, S. (2008), Mechanisms, in: Curd, M./S. Psillos (eds.), *The Routledge Companion to Philosophy of Science*, 420–428
- Granovetter, M. (1978), Threshold Models of Collective Behavior, in: *American Journal of Sociology* 83, 1420–1443
- Greshoff, R. (2015), Worum geht es in der Mechanismendiskussion in den Sozialwissenschaften und welcher Konzepte bedarf es, um sozial-mechanismische Erklärungen zu realisieren?, in: Endrek, M./K. Lichtblau/S. Moebius (eds.), *Zyklus 1. Jahrbuch für Theorie und Geschichte der Soziologie*, 47–91
- Gross, N. (2009), A Pragmatist Theory of Social Mechanisms, in: *American Sociological Review* 74, 358–379
- George, A. L./A. Bennet (2005), *Case Studies and Theory Development in the Social Sciences*, Cambridge–London
- Hechter, M./C. Horne (2009) (eds.), *Theories of Social Order*, Stanford
- (1998), Rational Imitation, in: Hedström, P./R. Swedberg (eds.), *Social Mechanisms. An Analytical Approach to Social Theory*, Cambridge, 306–327
- Hedström, P. (2005), *Dissecting the Social. On the Principles of Analytical Sociology*, Cambridge
- Hedström, P./P. Bearman (2009), What Is Analytical Sociology All About? An Introductory Essay, in: Hedström, P./P. Bearman (eds.), *The Oxford Handbook of Analytical Sociology*, Oxford, 3–24
- /— (1996), Social Mechanisms, in: *Acta Sociologica* 39, 281–308

- /— (1998), Social Mechanisms: An Introductory Essay, in: Hedström, P./R. Swedberg (eds.), *Social Mechanisms. An Analytical Approach to Social Theory*, Cambridge, 1–31
- /P. Ylikoski (2010), Causal Mechanisms in the Social Sciences, in: *Annual Review of Sociology* 36, 49–67
- /— (2014), Analytical Sociology and Rational-choice Theory, in: Manzo, G. (ed.), *Analytical Sociology. Actions and Networks*, West Sussex, 57–70
- Iannaccone, L. R. (1994), Why Strict Churches Are Strong, in: *American Journal of Sociology* 99, 1180–1211
- Kalter, F./C. Kroneberg (2014), Between Mechanism Talk and Mechanism Cult: New Emphases in Explanatory Sociology and Empirical Research, in: Friedrichs, J./A. Nonnenmacher (eds.), *Kölner Zeitschrift für Soziologie und Sozialpsychologie, Special Issue 54: Social Contexts and Social Mechanisms*, 91–115
- Kahneman, D. (2011), *Thinking, Fast and Slow*, London
- /A. Tversky (1984), Choices, Values, and Frames, in: *American Psychologist* 39, 341–350
- Kroneberg, C./F. Kalter (2012), Rational Choice Theory and Empirical Research: Methodological and Theoretical Contributions in Europe, in: *Annual Sociological Review* 38, 73–92
- (2014), Frames, Scripts, and Variable Rationality: An Integrative Theory of Action, in: Manzo, G. (ed.), *Analytical Sociology. Actions and Networks*, West Sussex, 97–123
- Leuridan, B. (2011), What Are Mechanisms in Social Science?, in: *Metascience* 21, 395–398
- Lindenberg, S. (2001), Social Rationality versus Rational Egoism, in: Turner, J. H. (ed.), *Handbook of Sociological Theory*, New York, 635–668
- (2013), Social Rationality, Self-Regulation, and Well-Being: The Regulatory Significance of Needs, Goals, and the Self, in: Wittek, R./T. A. B. Snijders/V. Nee (eds.), *Handbook of Rational Choice Social Research*, Stanford, 72–112
- Little, D. (1991), *Varieties of Social Explanation: An Introduction to the Philosophy of Social Science*, Boulder
- (2010), *Mechanisms of Contention Reconsidered*, URL: <http://understanding-society.blogspot.de/2010/08/mechanisms-of-contention-reconsidered.html>
- (2011), Causal Mechanisms in the Social Realm, in: McKay Illary, P./F. Russo/J. Williamson (eds.), *Causality in the Sciences*, Oxford, 273–295
- Machamer, P. (2004), Activities and Causation: The Metaphysics and Epistemology of Mechanisms, in: *International Studies in the Philosophy of Science* 18, 27–39
- Mahoney, J. (2001), Beyond Correlational Analysis: Recent Innovations in Theory and Method, in: *Sociological Forum* 16, 575–593
- Manzo, G. (2010), Analytical Sociology and Its Critics, in: *European Journal of Sociology* 51, 129–170
- (2013), Is Rational Choice Still a Rational Choice of Theory? A Response to Opp, in: *Social Science Information* 53, 361–382
- Mayntz, R. (2004), Mechanisms in the Analysis of Social Macro-Phenomena, in: *Philosophy of the Social Sciences* 34, 237–259
- McAdam, D./S. Tarrow/C. Tilly (2001), *Dynamics of Contention*, Cambridge
- Merton, R. K. (1968[1949]), *Social Structure and Social Theory*, New York
- Nauck, B./D. Klaus (2007), The Varying Value of Children. Empirical Results from Eleven Societies in Asia, Africa and Europe, in: *Current Sociology* 55, 487–503

- Norkus, Z. (2005), Mechanisms as Miracle Makers? The Rise and Inconsistencies of the 'Mechanism Approach' in Social Science and History, in: *History and Theory* 44, 348–372
- Opp, K.-D. (1999), Contending Conceptions of the Theory of Rational Action, in: *Journal of Theoretical Politics* 11, 171–202
- (2009), *Theories of Political Protest and Social Movements. A Multidisciplinary Introduction, Critique, and Synthesis*, London–New York
- Ostrom, E. (1990), *Governing the Commons. The Evolution of Institutions for Collective Action*, Cambridge
- Pajunen, K. (2008), The Nature of Organizational Mechanisms, *Organization Studies* 29, 1449–1468
- Salmon, W. C. (1971), *Statistical Explanation and Statistical Relevance*, Pittsburgh
- Schelling, T. C. (1971), Dynamic Models of Segregation, in: *Journal of Mathematical Sociology* 1, 143–186
- Schmid, M. (2011), The Logic of Mechanismic Explanations in the Social Sciences, in: Demeulenaere, P. (ed.), *Analytical Sociology and Social Mechanisms*, Cambridge, 136–153
- Stocké, V. (2007), Explaining Educational Decision and Effects of Families' Social Class Position: An Empirical Test of the Breen-Goldthorpe Model of Educational Attainment, in: *European Sociological Review* 23, 505–519
- Tsebelis, G. (2002), *Veto Players. How Political Institutions Work*, Princeton
- Tversky, A./D. Kahneman (1981), The Framing of Decisions and the Psychology of Choice, in: *Science* 211, 453–458
- Udehn, L. (2002), The Changing Face of Methodological Individualism, in: *Annual Review of Sociology* 28, 479–507
- Vanberg, V. (1993), Rational Choice vs. Adaptive Rule-following: On the Behavioral Foundations of the Social Sciences, in: *Jahrbuch für Neue Politische Ökonomie* 12, 93–120
- (2002), Rational Choice vs. Program-based Behavior. Alternative Theoretical Approaches and Their Relevance for the Study of Institutions, in: *Rationality and Society* 14, 7–54
- Wippler, R. (1978), The Structural-Individualistic Approach in Dutch Sociology, in: *The Netherlands Journal of Sociology* 14, 135–155
- Ylikoski, P. (2011), Social Mechanisms and Explanatory Relevance, in: Demeulenaere, P. (ed.), *Analytical Sociology and Social Mechanisms*, Cambridge, 154–172
- (2012), Micro, Macro, and Mechanisms, in: Kincaid, H. (ed.), *The Oxford Handbook of Philosophy of the Social Sciences*, Oxford, 21–45