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Mechanics, Micro, and Macroscale

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An explanation based on mechanisms

Introduction

Using a mechanical explanation, this chapter looks at social science micro-macro interactions. Historically, micro-macro problems have been linked to methodological individualism (Udéhn 2001, Zahle 2006). I'm not interested in reviving this notoriously useless argument. A few assumptions may be let go in order to avoid the debate's dead end in this chapter's main topic. Once assumptions regarding explanation are removed, the whole argumentation landscape transforms in favor of individualism in technique. Rather than relying on blanket norms, social scientists are increasingly using causal processes to explain phenomena (Hedström and Ylikoski, 2010). Bioscience and psychology have adopted a similar mechanistic approach, which is interesting (Wright and Bechtel 2007). They've just recently been brought together in a meaningful manner. To address some of the issues raised by social scientists' supporters of mechanisms, biological philosophers will employ their ideas. According to my viewpoint, cell biology and neuroscience research methods and ideas may be effectively applied to social science. They might both strengthen the case for mechanism-based explanations in the social sciences and bring the philosophical arguments about social science closer to the practice of social science. The flow of the chapter is shown in the graphic below. First, I'll take a look at some recent work on mechanism-based explanations as a starting point. Despite the fact that it entails a more fundamental understanding of explanatory relevance and causation, I argue that a mechanistic account of explanation may assist us think about micro-macro links in the social sciences. Propose my own alternative to a conventional philosophical statement of the micro-mega dilemma in section twosecondparagraph, .'s which does not presume that there is a single or full micro level. Even if microfoundations are needed in the social sciences, it's critical to distinguish between causal and constitutive explanations. In the last section, we question the widely held belief that the social sciences place a high value on deliberate explanations. This notion is referred to as "intentional fundamentalism" by me.

Many social scientists (Harré 1970, Elster 1989, 2007), philosophers of biology (Hedström and Swedberg 1998, Hedström 2005), and others have separately established the concept of mechanismbased explanation (see, for example, Hedström and Ylikoski 2010). (Bechtel 2006, 2008; Craver 2007; Darden 2006; Wimsatt 2007). It has been utilized mostly as a methodological critique in the social sciences, whereas in the philosophy of biology the objective has been to develop an acceptable description of biological explanation. Despite their distinct origins and motives, both traditions seem to be based on the same scientific explanations. When it comes to explanation, for example, both Hedström and Craver are dissatisfied with the covering law account (Hedström 2005). The correct definition of what constitutes a causal mechanism is still up for debate. Even though some theorists find this bothersome, I don't see it as a significant issue at this point. It seems unlikely that a single definition of a mechanism would be sufficient to capture all of the most important instances of mechanisms in diverse fields of study. According to Kuorikoski (2009a) and Bechtel (2006), certain fields of study, such as cell biology and the neurosciences, research highly integrated systems, while others, such as evolutionary biology and the social sciences, study more scattered phenomena (Kuorikoski 2009). Instead than engaging in linguistic sophistry, a philosophical account should illustrate how these exemplars connect to broader conceptions about explanation, evidence, and causality. But it is feasible to describe some broad properties of mechanisms. An effect or phenomena is an indicator of the kind of effect or phenomenon that a mechanism produces. Second, a mechanism is a concept whose causality cannot be disentangled from its cause. An effect of interest is produced by entities involved in a causal process. In addition, a mechanism has a defined structure. Entities and their qualities, behaviors, and relationships are made apparent by an explanation that is based on mechanisms to open the black box. Because of the emphasis on mechanisms, we may now ask a number of more specific questions regarding the causal process, rather than just one big one: What are the relevant attributes of the participating entities? What are the geographical and temporal arrangements of

these entities' interactions? In what ways may the result be changed or prevented? Finally, there is a hierarchical structure to the processes that are involved. However, it is assumed that there are lower-level processes that explain the existence of certain entities with particular traits and actions. To put it another way, the explanations offered by a particular area are always incomplete. For a specific mechanism, the basic position of some things, qualities, and actions is relative, since they are viable objects of mechanistic explanation in another sector. When it comes to basic (physical) processes, however, this chain of explanations terminates somewhere—there are no mechanismbased explanations. A broader collection of notions about scientific knowledge is related with the concept of mechanism than is often acknowledged in discussions of mechanisms-based explanation. As an example, there are several theories on how to prove causality, as well as heuristics for finding causes, how to offer explanations, and how to organize scientific knowledge (Ylikoski 2011). There's no denying that the approach's attraction is at least in part due to the lack of clearly expressed beliefs. Statements regarding mechanisms' explanatory function are commonly conflated with assertions about their relevance to the justification of causal claims, as I shall demonstrate later in this chapter (see also Kincaid, this volume). It is not required to assume that a theory of mechanism is the final answer to all difficulties in the theory of explanation, even though I believe that the following concepts are major advancements in comprehending explanatory reasoning in science. According to the mechanistic theory, explanation, causality, and generalisation are all presupposed in order to understand processes. Mechanism is not a mystery to be solved in a vacuum. As I've previously suggested (Hedström and Ylikoski 2010; Ylikoski 2011), we may go a long way toward fixing these issues by combining mechanistic concepts with James Woodward's theory of explanation (2002, 2003). While the relationship between mechanisms and generalizations does not need to be discussed in depth at this time, some remarks on the topic of explanatory relevance are necessary since they will be used in subsequent arguments. Selective description of the causal process characterizes a mechanism-based explanation. Abstraction removes the extraneous details to focus on the important aspects of the process rather than providing a full analysis of every detail. For an entity to be considered relevant, its qualities and interactions must be capable of affecting the desired result in some way. An entity or change in its qualities or activities may be omitted if it does not have any bearing on the underlying impact to be discussed. In the context of mechanism-based explanations, this counterfactual criteria of relevance suggests that counterfactual thinking about prospective alterations and their implications is required (Ylikoski 2011). Understanding these causal counterfactuals as assertions about the outcomes of ideal causal actions is a logical step (Woodward 2003, 2008). What would have occurred if the cause had been surgically intervened, but nothing else in the causal configuration was affected? This is known as the causal counterfactual. A major feature of the interventionist explanation of causality is that it may be used in any setting where the concept of intervention makes sense. Cell biology and sociology are examples of particular disciplines that may benefit from this theory of causality, unlike other theories of causation, such as different process theories.

Explanation by Mechanisms and Reductionism

The mechanical approach to explanation reorients the concerns of reductionism and reductive explanation in a unique way. If you consider of a mechanism's actions as a collection of its components and activities, you'll see that the mechanistic approach is fundamentally reductionist. In this respect, the reductive research method has arguably been the single most successful research technique in modern science's history of. Mechanism-based explanations, on the other hand, are plainly nonreductionist in another sense: Despite the fact that they focus on the micro level, they do not take the place of or explain away from the more in-depth facts and explanations. There are processes in place that connect different levels rather than just reducing them (Darden 2006; Craver 2007; Wright and Bechtel 2007; Richardson 2007; McCauley 2007; Wimsatt 2007). The conventional philosophical theories of intertheoretical reduction, which see reduction as the derivation of one theory from another, diverge fundamentally from the mechanical concept of reductive explanation (Richardson 2007; McCauley 2007). There is no strong idealized vision of a discipline-wide theory that encompasses all information about its level in the mechanical account of reductive explanations. Reduction, on the other hand, isn't seen as a logical link between these notions (or their corrected versions). As a result, reductive mechanistic theories are created piecemeal and focused on a specific aim. All mechanistic explanations are presumed to be mutually consistent, but there is no overarching attempt to synthesize them into one grand theory that would include all the phenomena that the scientific field analyzes. In addition, the processes are

intrinsically multilayered, in contrast to standard perspectives that conceptualize reduction as eradication or replacement. The mechanism itself and its activities are researched at a higher level, while the components and their operations are examined at a lower one. The interfield theory characterizes several mechanistic explanations in this way (Darden 2006). As a result, it is impossible to describe mechanical explanations as deductive links between distinct theories. Taking a mechanical viewpoint also suggests reconsidering levels. Entities are layered into layers across phenomena according to the conventional layer-cake notion, and each scientific field is separated from each other by the level of the phenomena that they are researching (see Oppenheim and Putnam 1958). If you consider in terms of mechanical theory, this kind of thinking is unnecessary and deceptive since it implies that the levels are both complete as well as same regardless of their investigation environment (Craver 2007). Metaphysical views of degrees of organization or existence do not fit the actual scientific disciplines. So even if the metaphysical description of levels is riddled with difficulties, there doesn't seem any compelling reason to adopt this metaphysical limitation for an account of scientific explanation. The mechanistic explanation relies heavily on the concept of levels of mechanism, but it does so without many of the standard assumptions associated with levels. As a result of this, mechanism levels are perspectival in that they are influenced by what they are being used to explain. The micro-level processes, entities, and interactions that are used to explain macro-level facts are only micro-level because they are necessary for the complete explanation of the macro fact, not because they belong to a specified micro level. Everything that is required to describe the macro fact is considered to be on the same level as the macro fact itself. But there is no assurance that these components would be at the same level in all conceivable explanatory situations. The micro-level entities and processes that account for these components do not seem to be from the same level. There is a distinct hierarchy of mechanisms for every set of mechanisms, although these levels are only global in scope. In the conventional layer-cake model, it is expected that a hierarchical structure of mechanism levels would provide the well defined and complete levels of nature (Craver 2007). Reductive explanations and the significance of microfoundations in the social sciences might be reexamined in light of these new perspectives. While it may seem counterintuitive at first, abandoning the deductive theory-reduction paradigm may have a significant impact on the methodological individualism argument, for example. For example, since the explanation of macro facts is no longer understood as a logical derivation, it is unnecessary to supply individualistically appropriate redefinitions of macro-social conceptions. There is no purpose in searching for any bridge rules between theories. Anti-reductionist arguments concerning multiple realization lose much of their importance because of this change. According to mechanistic explanation, many realizations are only an intriguing empirical finding that does not pose a problem for macro qualities being explained in terms of micro attributes and connections. It is possible for the scientific community to learn to live with various realizations in the same way that it has learnt to live with alternative causes in the past. People who believe in mechanisms in the social sciences are aware of these effects. Some examples include abandoning the concept of reductive explanations and instead stressing the relevance of microfoundations (Elster 1989; Little 1991). Nevertheless, I don't believe philosophers of social sciences have considered all the consequences of the mechanistic approach. When it comes to methodological individualism, for example, the mechanical approach is typically connected with it (Elster 1989). Micro-macro relationships are also still largely debated in terms of premechanistic explanations for reductionism (Sawyer 2005; Zahle 2006). There are several crucial assumptions in the conventional dispute over methodological individualism that should be abandoned in this chapter, which aims to sketch out what a consistently mechanical approach might look like to thinking micro-macro interactions. There are a few, one of which is the idea that each person has a special, all-encompassing place in society. An individual level that is consistent and well-defined serves as the foundation for reducing all nonindividual social concepts to the level of the person. This is known as comprehensiveness. According to this concept, the micro level, such as purposeful rational action, is assumed to remain constant in all social explanations. Last but not least, the word privileged refers to the assumption that explanations formulated in terms of this particular level have certain unique explanatory features that distinguish them from explanations made at other levels. Here, I'll argue that if we can let go of these three presuppositions, we can approach social science's micro-macro difficulties with greater clarity.

Macroeconomics in a new light

One of the anti-individualists' favorite methods of argumentation is to draw on philosophical notions. They take their cues from nonreductive materialists and use the mind-brain relationship as an analogy to support their claims. The attraction of these

arguments is understandable since they are not especially mind-specific—it is a common habit to speak just about M- and P-predicates. For those who believe in derivational reduction, concepts such as supervenience and multiple realization provide a compelling argument against reductionism. The traditional view of reduction does not completely collapse under multiple realizations (Kim 1998) and there are reasons to suspect that the concept of supervenience is less illuminating than commonly assumed (Horgan 1993; Kim 1993), but we can set these issues aside because their relevance presupposes a premechanistic account of reductive explanation. My emphasis here is on the mind-brain comparison, which I believe to be inaccurate. An comparison between the mind and brain is unsuitable because it mischaracterizes the nature of the social scientific micro-macro issue. Mental conceptions are fundamental to psychological theories, although it is not clear how these views connect to current neurosciences' interpretations of the brain's operation. The problem is to connect two levels of description that are essentially talking about the same subject matter. Generally speaking, the (nondualist) antireductionist approach does not question the causal sufficiency of neural-level facts. In social science micro-macro arguments, the framework is quite different. There is no issue in the social sciences of bridging individual-level understanding of social processes (the counterpart to idealized knowledge of the brain) to a more social or comprehensive account (that would be analogue to the idealized psychological theories employing the mental vocabulary). Anti-individualists have a tendency to question the adequacy of individual facts in terms of causality. Some argue that the individualists are either unable to account for all social facts, or that they are cheating by admitting facts that do not fit the definition of an individualistic truth. As a result, the main difficulty is not how to reconcile two different (and perhaps conflicting) levels of description, but rather how to perceive how local facts about people and their social interactions relate to broad facts about groups, organizations, and societies as a whole, Rather than being a mind-brain relationship, it's more like the relationship between a full brain and its individual sections. The organ-society comparison has a lot of flaws, therefore I don't see the point in developing it any further to demonstrate how misguided the mindbrain parallel is. It is preferable to ignore all of the clever comparisons and instead focus on the micromacro issue from the perspective of social scientists. The notion that macro social facts are often supraindividual serves as a great starting point. However, they are not linked to individuals but to groups and communities. Macro social qualities, interactions, and occurrences are normally not about people, however there may be certain features that apply to both individuals and collectives. The part-to-whole link is another prominent characteristic of many social micro-macro relationships. Micro-society is built out of its constituent elements in one way or another, and this is a fact. Constitutive connection is often more complex than simple mereological aggregates or basic materials. To begin, many social wholes are made up of a variety of disparate components, including individuals, their ideas, and the physical objects they create. Second, the relationships among the constituent parts play a vital role in all fascinating instances of social wholes. Furthermore, the relationships between social wholes and the social whole's surroundings might also be critical. This isn't as significant as the fact that seeing the micro/macro link as an issue of size is made feasible by the part/whole relationship: The distinction between micro and macro refers to social phenomena that occur on a small scale and those that occur on a huge one. I do not believe that the micromacro distinction can simply be defined as a matter of scale. The varied nature of macro social facts makes it difficult to specify the extra needs for their distinguishing characteristics when comparing them on a micro-to-macro scale. As a matter of fact, I would like to say that it is a useful method to think about interconnectedness between the micro and macro levels and an antidote to the temptation to draw similarities in the philosophy of mind. As a matter of size, the micro-macro problem might be seen as lacking a single micro level. A continuum of varied sizes may be found between "little" and "big," although the distinction between the two is a categorical one. Individuals, families, businesses, or organizations may all be micro entities, depending on the application. The way social scientists think is in agreement with this flexibility. They don't presume that micro always refers to a single group of entities, as some have done in the past. Because of this, a property's macro or micro nature may be inferred from how it is compared to another. When seen from the perspective of the social networks within a society, a friendship connection is a macro characteristic from a psychological standpoint, yet it is a micro attribute. As opposed to being predetermined, the distinction between micro and macro is contingent on the explanatory goals of the observer. For example, the micro-macro difference is constructed quite differently in international politics and organizational sociology. While in the first case, governments and other organizations are typically seen as persons, they are instead viewed as the macro reality to be explained. When it comes to economics, enterprises and households are considered micro-level entities, but for disciplines

like industrial organization and family sociology, they are macro-level. According to a mechanistic interpretation of science, this degree of adaptability should come as no surprise. In the biological sciences, levels are also influenced by epistemic considerations. They are not the only ones who do not think in terms of complete or distinct micro levels. Mechanisms are found at varying degrees of abstraction depending on the nature of the questions they are being asked to answer. Mechanistic theories don't care about this since they assume that any micro-level explanation can always be applied to a macro-level explanation for a new set of questions. In order to describe social macro characteristics, it is preferable to use instances rather than a general description, since they do not form a single entity.

No attempt has been made to include all possible aspects of sociology or the social sciences as a whole in this list of typical macro social features. Despite my four categories, there are many aspects of macro social reality that go outside of them. As a result, I hope that the four examples may be utilized to demonstrate the scale perspective's usefulness. **A population's statistical characteristics**

A fundamental topic for sociology is the numerous statistical features of populations. Among them are distributions and frequencies. Sociologists are interested in both distributions of traits to different sorts of persons and distributions of individuals with particular attributes to social positions and physical places. For example, whether they are investigating the ethnic segregation of cities, comparing cultures in terms of inequality, or characterizing the social stratification of a society, they are striving to account for distributions. Another significant characteristic of distributions are frequencies. Sociologists are interested in typical, unusual, dominating, or marginal behaviors, beliefs, or attitudes within a defined group. Similarly, they are interested in ratios of qualities such as unemployment or imprisonment among the population. So, whether sociologists are investigating changes in racial biases over time, comparing the degree of conformism across communities or following the changes in the level of union memberships, they are interested in explaining frequencies. All these statistical macro social features are inferred (or approximated) from data on the individuals of a population. There is no other method to access them. However, it does not make any sense to attach these qualities to individual units. Another essential feature about these macro social facts is that the units of these statistics do not have to be people; they might as well be families or companies. It is evident that statistical macro characteristics are in no way reliant on the members' ideas and attitudes towards them. The individuals of the population might have erroneous, or even irrational, opinions about distributions and frequencies that define their own culture. While the statistical features of populations normally only serve as explananda in the social sciences, they do have certain real and nonreducible explanatory purposes. Examples of frequency-dependent causation include (but are not limited to) situations in which a person's ability to do harm is directly proportional to how common that ability is amongst the general population. The correlations between numerous factors (such as money, education, taste, and location) play a significant part in explaining individual variations in behavior and attitudes in many other social scientific explanations. Other methods of thinking about levels do not seem as natural in any of these examples as cases of bigger scale facts impacting lower scale happenings.

Social network topologies in a given population

Relationships and exchanges between people are also of interest to sociologists. These relationships form social networks throughout the population when taken collectively. To put it another way, a social network is a representation of the relationships that exist among the people that make up a certain group. Sociologists examine social networks when looking at how information spreads through an organization, when comparing groups based on their degree of network clustering, or when investigating the brokering potential of a person occupying a structural hole. Social network analysis is becoming more popular in the social sciences as the value of social networks is acknowledged. Centralization, cohesiveness, density, and structural cohesion are only few of the noteworthy (formal) features that may be found in social networks (Scott 2000). The qualities of a social network are paradigmatic macro features, but the social network itself is derived through individual interactions. To apply these characteristics to individual network nodes is completely irrational. The network analysis units, like statistical features, may be changed as needed. People aren't required to be the network's nodes (the people that make up the population). It's also possible for them to be groups, families, organizations, or even countries. Sociology's explananda and explanantia are derived from the features of social networks. Consider the concept of a structural hole (Burt 1992), which is used to explain the inequalities in agents' access to knowledge and their capacity to affect social processes. It is reasonable to conceive of the social network as a large-scale social phenomena that influences local interactions between people in these

theories. It's far more difficult to consider things from a societal or individual perspective. It would be a stretch to term social networks individual qualities, as they are attributes of the population. However, if these are macro-level features, what would be the individual-level properties that serve as the foundation for these traits? Individual connections, one may think, but that's only a general way to describe networks. Not having to worry about these kinds of questions makes life a lot easier. Networks are more than the sum of their parts since they are larger and comprised of more local connections, and they might have features that do not exist in the parts.

A property owned by the community

As a result of common assets Social scientific concepts that are relevant to a given community, but not to individuals, are what I'm referring to Culture, conventions, and social standards are a few examples of these ideas. Examples of this include the fact that cultural differences are more often seen between groups rather than individuals. Individuals can't be held responsible for social norms and conventions since they're the product of their communities, not themselves. It is true that these concepts lack clear definitions and their explanatory applications might be difficult to understand, yet their importance is undeniable in the social sciences. Despite the fact that collective assets are ascribed to groups, they are purely based on information about specific people. The underlying assumption here is that a group's members share a common set of values, norms, expectations, and preferences. Because of this, it is important that the members of the group share these distinctive traits in a way that is not just coincidental. These traits are shared as a result of continued engagement. When new members join a group, they pick up on the expectations and habits of the group as a whole, so the group as a whole follows through with its established practices. Facts concerning the common origins of ideas, beliefs, and customs, as well as the ongoing contact between members, underlie a culture's (relative) unity. Furthermore, a culture's coherence depends on the frequency with which members engage with one another and the rarity with which members contact with outsiders, rather than on any kind of higher-level impact on people. Cultures, traditions, and social norms can never be accurately described without using idealization and abstraction, since no two people in the same group can ever have precisely the same set of beliefs, tastes, or daily habits. Given what we know about human cognition and communication, it would be nothing short of a miracle (Sperber 1996). Socialization procedures can't guarantee that all members of a group are exactly same. These idealized descriptions, however, are nonetheless important in their own right. They highlight characteristics of the group that stand out when compared to those of another group. As I've described them, communal properties are linked to a social group whose members have regular contact; nevertheless, the lines between these groups are porous. A variety of scales—for example, a hamlet, a local region or even a nation—can be described using this method. Because of this, it is inevitable that larger-scale explanations will be more abstract and less detailed. Nonpersonal units have the same flexibility as statistical and network qualities, which may also be ascribed to communal properties. These social norms, for example, may be described in terms of their effect on relationships between organizations. Individual property is already an idealized abstraction, hence there is no need to describe community property as an independent reality level. To be fair, they only express more general truths than descriptions of the specific attitudes, habits, and preferences that compose them. When considering the explanatory use of shared properties, the scale viewpoint makes sense. Using social norms as an example, we're referring to larger-scale facts about the group members that are causally important to the micro-level conduct of an individual. To grasp what is occurring, there is no need to create a distinct sphere of standards. Individuals' perceptions of proper conduct are shaped by the expectations and reactions of their peers.

Businesses and their properties

States, corporations, political parties, religious congregations, and athletic leagues are only a few examples of the many types of social institutions that exist. Organizations, on the other hand, typically have a clearly defined community that serves as the foundation for shared assets. At the very least, operational members are required to meet a set of standards before they can join. As well as the rights and obligations of its members, the organization also has regulations defining the roles of its officials. It is possible for organizations to maintain a feeling of stability and continuity, even when its members and functionaries change, thanks to these (written or unwritten) principles. Because many organizations exist (and are defined by) other organizations, it is critical to consider context while trying to make sense of organizations. It is possible for organizations to own a wide range of assets that are not owned by their members. Some organizations are even considered as legal entities because they have aims that are distinct from those of their individual members. A number of people have come to accept

the reality of organizations as distinct ontological categories. In my perspective, there are no hard and fast rules when it comes to ontological accounting since organizations are human creations that are made up of people and their interpretations of the laws. All actions taken on behalf of the organization are carried out by its members. Whether or whether a controversial statement was made as an individual or as a representative of an institution has a significant societal impact. However, this information pertains to the social standing accorded to the activity, not the two distinct entities responsible for its instigation. When a person has a direct or indirect causal relationship with a company, she is also interacting with other people (although this interaction is increasingly mediated via material artifacts such as ATM machines). There is no downward causal impact from a higher echelons of society. Everything takes place on the same level; it's only that the specifics of the local situation are influenced by the deliberate attitudes and relationships of a broader group of individuals. In the same way, no matter how far up in the organizational structure a member may be, the organization's effect on its members is mediated via other members. There is no need to treat the rules as a distinct ontological category since they are external to any one person. These findings show that the layer-cake model of the social world fails to provide much insight into organizations as well. As a member of an organization, you have access to a wide range of tangible resources, and you are able to influence those resources via your behavior and mental representations. It's fantastic to go back to the meat and potatoes of social science once again. How can large-scale collective businesses, like organizations, succeed (or fail) to accomplish particular goals? These questions are addressed in these studies. In what ways do these collaborative actions have unforeseen consequences? How are the individual members affected by their participation in such collective enterprises? Although organizations and their properties are often mentioned in the explanatory responses to these questions, it is quite acceptable to think of them as big scale objects impacting smaller scale things or other large scalethings. A flat view of society, in which the distinction between micro and macro is only one of size rather than various levels, may be inferred from these big social facts. Distributions, frequencies, interactions and relations on a wide scale have an irreducible explanatory contribution, but the mindbrain link is unique. Therefore, the metaphor of layers that underpins the layer cake model fails to assist social scientists understand the challenges they face in addressing macro facts. A variety of positive outcomes will follow if you decide to give it up. Firstly, there are certain benefits in terms of philosophy. As I shall show in the next section, the issue of causal exclusion that comes from the picture of causally conflicting levels is eliminated once we give up the image of levels. This means that there is no difficulty with downward causation, since there are only causal impacts from large-scale things to small-scale things and descriptions of large-scale things at different abstraction levels. The more practical difficulty of explanatory selection replaces the original challenge: How can we make the strongest arguments regarding counterfactual reliance using this definition? It is no longer necessary to search for a definition of individualism that can be used to support or refute arguments in favor of methodological individualism. Real social scientific explanations, on the other hand, allow us to look at how large-scale objects impact smaller ones and what sorts of causal processes mediate these effects. There are also benefits to this new way of thinking when it comes to inter-discipline connections. Differences in magnitude and relevance of large-scale linkages and interactions justify the division of labor between psychology and the social sciences, not independent and autonomous levels of reality. There will never be a day when social sciences can be reduced to only psychology. Scale-based thinking, on the other hand, reduces the inflated expectations of disciplinary autonomy. A totally psychology-free social science becomes less enticing when social scientists are denied their own independent degree of truth. For social explanation, it should be a question of whether or not the specifics of human cognition matter. In certain circumstances, it may make sense to add sub-personal processes into the explanatory theory's mechanisms. Finally, I'll discuss this option.

Microfoundations, causation, and constitution

There has been a lack of use of a well-known philosophy of biology notion in the philosophy of social sciences discussion regarding mechanisms. 1 Causation versus constitution is the difference between the two. As previously stated (Salmon 1984; see Cummins 1983), the distinction between constitutive and causal explanations has only lately been a subject of serious investigation (Craver 2007). It's easy to mix up the concepts of causality and constitution since they both include relationships of dependency (or determination). However, there are important ontological distinctions to be made between the two. It's about changes in attributes that causality is all about; it's a link between occurrences. We speak about causal processes because causality takes time. Finally, the asymmetry of manipulation

characterizes causation: The effect may be controlled but not the other way around (Woodward 2003). Constitution, on the other hand, links everything together. The system's qualities are derived from the properties of its pieces (and their relationships) (sometimes also the relations to the environment are important). The sum of its components and the connections between them form the whole. When it comes to the process of constitution, we don't speak about the time it takes. In addition, constitution's relata aren't "independent existences" (as Hume called them). In light of this fact, we are unable to describe the constitutionrelationship using manipulation asymmetry. It is glass' fragility, for example, that results from its molecular structure: Having a certain molecular structure does not make a substance fragile; rather, it is the specific molecular structure that causes the substance to be fragile. Another kind of asymmetry, on the other hand, is the asymmetry of existence. While individual pieces may survive without the system, the system as a whole cannot exist without its individual components (although the system can exist independently of particular parts). Both causality and constitution exhibit an intriguing regress. We speak about causal chains while discussing causality. Based on the theory that every occurrence has a corresponding cause, this is the basis for this. We suppose that all components of a constitution may be further deconstructed into their pieces and their organization. These might be referred to as constitution chains. An even trickier question is: Is it possible to have a first cause that is not itself caused? A similar issue may be raised in regards to the fundamental building pieces of reality, but they are unimportant in our discussion. In the social sciences, there is no chance of finding anything like this. In the social sciences, however, these regress qualities provide chains of explanations that are relevant. Having an explanation for every social scientific explanatory element does not mean that their explanatory value relies on our understanding that explanation, which is critical to grasp in this context. It is not necessary to have an explanation for the explanans facts in both cases of causality and constitution for an explanation to imply that they are true. In the following part, I'll return to this topic. It's all about tracing the chain of causality. In terms of explanation, the fundamental concepts of constitution and causality are remarkably similar, despite their differences in metaphysics. A network of counterfactual dependencies may be found in both theories. Causation teaches us how the preceding events and the way they were organized (in terms of both chronology and place) led to the occurrence under discussion. A constitutive explanation, on the other hand, explains how the qualities of the components and their structure result in the attributes of the system. Difference-makers are being sought in both situations. Explanatory selection is based on the counterfactual criteria. Why x is different from what we want to know is best explained in contrastive words (x is different from what we want to know) (Woodward 2003; Ylikoski 2007; Northcott this volume). Differential features of components in the case of causality and of constitution are what distinguishes the two (or in their organization). Because of the counterfactual reliance in both circumstances, it is worthwhile to raise a supplementary question: It is logical that both theories are referred regarded as "mechanical explanations" in philosophical disputes about biology since the sources of the responses to these issues are the same. Both examples, despite their fundamental metaphysical distinctions, may be explained using the same basic theories of explanation. It's not only the rules of explanatory relevance that are the same; the questions themselves are, too. This may easily lead to misunderstandings. For example, you can ask,

"What makes this glass so brittle?" It's not clear what to make of the question: "How did the glass get fragile?" or "What makes the glass fragile?" are two possible interpretations. The first is an issue of cause, whereas the second is a question of effect. As a result of this query, we will learn about the glass's causal history, which will help us understand why it is fragile rather than strong. There will be no reference to prior events in the response to the constitutive question. The molecular structure of the delicate item will be described in depth. So, despite the similarity in appearance, the request for explanatory information differs greatly from the explanation-seeking queries. To avoid misunderstanding, it is important to grasp the distinction between causality and constitution. This is also true in social science philosophy. Explaining how a regime came to be stable vs explaining what keeps it stable, for example, are two whole different things. Because they address distinct explananda, even if certain data stated in both explanations may be the same, Rather than focusing on the process through which causal ability was developed, one approach considers it in terms of the actual existence of causal capacity. A social scientist is likely to be interested in both subjects, but she should not mix them together. One may ask why-and-how inquiries about any social macro property, regardless of whether it is constitutive or causal in nature. Though the issues of what constitutes a statistic aren't too difficult for some of them.) The first kind of query seeks to determine how the micro-level entities, actions, and relations shape the macro features. Macro-level facts are being studied to see how the micro details

influence the macro-level facts. If any micro facts had been modified in some manner, how would the macro facts have been different? When it comes to interventions, these questions may be categorized: What impact would it have on the big picture if any of the smaller details were altered? You'll see that, although intervention is a sense of causation (because everything changes over time), interest is a notion of reliance. An explanation for the disparity between two groups' abilities to solve problems is a good example of a constitutive explanation. Members' intellect or social skills may be the most important factor in determining the group's success or failure. It is possible that the most important aspects are the group's informal social norms, or its formal structure. Of course, there may be a mix of these elements that provides the answer. There are a lot of ways to think about constitutive explanations, and this example serves as a good starting point. In the constitutive explanation, we find out what gives the total

(population/group/organization/society) these traits, and this answer is located in the causal powers of the parts and their organization. In constitutive explanations, the explanantia are always on the micro scale. It is not logical to refer to the attributes of the whole in an explanation that seeks to explain what makes up the entire. As a result, reductionists like the methodological individualists have been on the correct road all along. Macro characteristics, on the other hand, are not diminished in any way by an explanation: the wholes are just as real. Therefore, methodological individualists who claim that a micro explanation somehow removes macro features are either metaphysically misguided or simply picking their words improperly. The idea that macro can be reduced to micro is as absurd as the idea that consequences can be reduced to their underlying causes. The origin, permanence, and change of macro social features are the focus of the causal issues. Counterfactual dependencies are being traced in these explanations. Who knows how things would have turned out if any of the reasons had been different. What type of impact would a change in certain prior facts have on the current situation? Causation can never be explained without mentioning the explanantia, which are always prior occurrences. Confusion between constitution and causality might arise in this situation. Individualists like to make the assertion that the causes must be at the micro level if we are looking at basic causal claims regarding causal dependency. Causation does not imply, however, that the genuine causal activity is always to be discovered at the micro level. Causation. Every time there's a reason at the macro level, there are also micro-level facts that make up the whole. No a priori justification exists for prioritizing micro-level causes over macro-level causes in the selection of explanatory variables (Woodward 2003, 2008). It is necessary that the macro variable and the explanandum have an adequate counterfactual dependency. However, understanding the underlying processes may be necessary in many circumstances to support a claim of causal reliance. But this insight about the basis of a causal claim must not be confused with the claim itself. Furthermore, even while referencing microlevel processes is necessary when describing mechanisms, this does not indicate that macro-level facts will lose their explanatory significance. They'll still have a role to play as potential game changers and valid explanations. It is important to keep in mind, however, that even if the knowledge about the key mechanistic features greatly enhances the explanation, it does not diminish its causal significance. It is a question of explananda that determines the micro or macro level of explanatory relevance in the counterfactual theory of causal relevancy. This does not imply that the most invariant counterfactual dependency (with regard to the contrastively stated explanandum) is always found at the micro level.... In the same manner, one must reject the widely held belief that the levels of explanation should always correspond, such that macro would explain macro and micro would explain micro. The circumstances of the case and the specifics of the desired explanandum, not general philosophical reasons, always define the concerns of explanatory relevance (how the explanatory variables are picked, at what degree of abstraction they are articulated, etc.).

Micro foundations and their correct function

This specific historical hypothesis's rationale In light of the mechanistic need for microfoundations, is the aforementioned claim concerning the validity of macro-level causal facts consistent or not? As a proponent of mechanism-based thinking, I believe it is a natural fit. A widespread misconception about mechanistic microfoundations is that they are meant to provide us with a deeper understanding of the explanatory dependency that underlies the causal relationship between macro variables. This is not at all the case. Macro-level causal linkages are not questioned by supporters of mechanisms-based explanations. The focus should be on microfoundations rather than macrofoundations in order to have a better grasp of these interrelations. The importance of microfoundations can't be overstated. Causing macro characteristics to exist is always associated with mechanisms. In order to understand why a specific reliance exists, it is

important to know how macro variables are linked (Ylikoski 2011). It also incorporates the macro-level generalization's causal information into other explanatory pieces of knowledge (Ylikoski and Kuorikoski 2010). When it comes to explanatory social science, this is a kind of knowledge that we should pay attention to. However, the added theoretical knowledge is not the only benefit of this research. In many cases, it also provides information on the circumstances under which the aforementioned causal dependency will be valid. This information has three facets. An explanandum variable may take any value within a certain range without the dependency dissolving. As a second point, it is known that the reliance is sensitive to background circumstances. It's feasible that other approaches might have comparable results. Macrolevel explanatory generalizations might be problematic if you don't know about these concerns. If you don't know the underlying mechanics, extrapolating to other situations will be very tough (Ylikoski 2011; see also Cartwright, this volume, Kincaid, this volume). Explanatory generalizations may benefit from a better grasp of the underlying processes as well as a more secure comprehension of the explanatory assertion. The explanandum could be more exact or the explanatory generalization might be reformulated to allow for a wider range of values for the explanandum variables or background circumstances with the assistance of a mechanistic understanding (Ylikoski 2011). Considerations such as these support the premise that microfoundations are essential for adequate explanation. The explanatory value of macro facts, on the other hand, remains unaffected. They, on the other hand, place them in the proper perspective by acting as a link between large-scale micro facts and the causal interactions and decision-making processes of individuals. His widely misinterpreted graph, I believe, is an effort by James Coleman (1990) to get across this concept. [Figure 2.1: Macro-Micro Linkages (insert here)] For example, the arrows in the figure 2.1 are referred to as situational mechanisms, action-formation mechanisms, and transformational mechanisms in accordance with Hedström and Swedberg (1998). (arrow 3). Social structures constrain people's actions and cultural environments shape their desires and beliefs, while action-formation mechanisms describe how people choose their preferred courses of action among the feasible alternatives. Finally, transformational mechanisms describe how individual actions result in various intended and unintended social outcomes. Non-mechanistic explanations that stay at the macro level are crucial to Coleman. This does not exclude him from acknowledging the causal significance of macro social realities. That wasn't really his point; rather, it was to make it clear that a proper sociological understanding necessitates a knowledge of both the situational mechanisms that influence the local decision-making processes of individual agents, as well as the mechanisms by which individual actions generate and influence macro social facts (the transformational mechanisms). Instead of descriptions that somehow reduce the macro facts to the individual level facts, he was arguing for systems that connect them. We can only have a complete theoretical understanding of social phenomena if we have identified the underlying processes. It is via Coleman's scathing critique of Weber's (partial) account for the birth of contemporary capitalism in Western Europe that these facts are revealed. It was general knowledge in late nineteenth-century Germany that Protestantism, entrepreneurism, and the emergence of capitalism were intimately linked. Weber wanted to know what changes in individual agents' beliefs, wants, and community activities the rise of Protestantism brought about in order to justify this explanatory proposition. In Coleman's view, this issue lacks both causal and constitutive aspects. The second topic posed by Weber, however, is the subject of Coleman's investigation. What role did the alterations in individual lifestyles have in shaping economic activity and institutions, and how did they contribute to the emergence of capitalism as we know it? Coleman argued that Weber was unclear regarding the last link in the causal chain. He was unable to provide a coherent explanation of how the Protestant morality was influenced by the advent of contemporary capitalism. In other words, Weber was unable to illustrate how the micro-level modifications (the Protestant living practices) brought about a large macro-level effect (the early forms of modern capitalism). The validity of
Weber's assertion that history is a product of a causal relationship is undermined by the absence of the key mechanism. The distinction between mechanisms' justification and explanatory functions is critical here. Coleman's research explains why Weber's causal claim is legitimately challenged. Historical causal claims rely heavily on knowledge of the processes of action, therefore pointing out that there are gaps in this chain is a challenge to the validity of these statements. The critique of a single causal claim does not mean that Coleman thinks macrolevel data nonexplanatory or causally ineffective. He's just being a bit of a jerk.

Fundamentalism with a purpose

Methodological individualism may be justified using intentional explanations. On my part, this is a deliberate act of fanaticism. What matters most in the

social world is what people do, according to purposeful fundamentalism. Individual action-level explanations, they reason, are sufficient, if not crucial. This is the case. Unlike explanations that draw on supra-individual social structures or traits, intentional explanations don't need providing microfoundations. They provide just the most elementary of explanations for their behavior. Purposeful activity, according to intended fundamentalism, is the greatest way to understand human behavior. It's not uncommon for the rational choice theory to be associated with militant fundamentalism, despite the fact that it may take many different forms. It is unnecessary to ask additional questions when an event in society is explained by its underlying causes, according to French social critic Raymond Boudon (1998). Since there is no "black box" to open before the explanation is accepted, an intentional explanation does not have the same problem as a supraindividual explanation: "There's no arguing with this explanation" (Boudon 1998, 172). This will be the conclusion of the story if we use a rational choice explanation, which is both economical and generalizable. (Diego Gambetta, 1998, 104; Gambetta, 1998, 104) 2 The intentional fundamentalism of this section aims to show that causal mechanism and purposeful fundamentalism are irreconcilable. Note that rational choice theorists often endorse deliberate fundamentalism, and many people believe that rational choice explanations are the greatest examples in social science of mechanical explanations. Rethinking the link between rational choice theory and mechanismbased research is necessary if my argument is valid.." One of the most common rationales for methodological individualism is demonstrated to be less convincing by this research.

Regression as a theory

Explanatory regress for methodological individualism should be our first stop in understanding deliberate fundamentalism. Most typically, methodological individualists argue that nonindividualist explanations are either inadequate or nonexistent as explanations. Individualistic explanations may only be substituted with explanations based on macro social realities at the most. Supraindividual explanations are at best drawn from a properly explanatory tale, according to this approach. Arguments like this one are known as a "regress of explanations." Explanations at the macro level are unacceptable unless they are founded at the lower level. The following is the basic principle:

In order for an explanation to be legitimate, it must explain or explain itself.

Finally, someone has to bear the burden of providing an explanation. As a rule of thumb, [P] suggests that an explanatory regress may be stopped at the most basic level. For the intentional fundamentalist, the buck must stop at the level of (self-interested) rational purposeful action since this is counterintuitive. Because of this, the lines from Boudon quoted above assume this level as naturally intelligible. The quest for microfoundations should end at the level of the person because of the intrinsic intelligibility of purposeful activity. Using the explanatory regress argument against antiindividuals who can't make the same claim about privileged position is safe for the methodological individualist, since the unique status of deliberate explanation doesn't undermine the validity of his preferred explanatory variables. For a variety of reasons, the fundamentalist case for individuality fails. In the first place, since the premise [P] is invalid. If the explanans themselves are explained, then the relationship between the explanans and the explanandum is irrelevant. However, an explanation of an object or phenomenon in terms of another object or phenomenon does not entail that that object or phenomenon itself be explained. Even if a reason for Y were to exist, the validity of the explanatory link between Y and X would not be affected. Because these problems are separate, the regress has not begun. What's the point of believing in [P]? Among the possibilities is this: The belief in [P] is the result of a simple conflation of why-questions aimed at justifying one's actions and queries aimed at explaining them. It's reasonable to inquire about the validity of the arguments used to support one's convictions. It's also logical to ponder whether or not one's explanation is supported by evidence. A belief in Y is not the same as an explanation of why this is so.

Reasons given voluntarily and without regard to their significance

Because purposeful explanations lack the specific features expected by the regress argument, the argument fails. If, as many proponents of rational choice sociology do, one accepts the mechanical theory of explanation, then such a distinction is absurd. Rather of being in line with causally focused social science, the idea that human reasoning should be treated as if it were a black box dates back to nineteenth-century hermeneutic romanticism. Even if there is a basic level of explanation, the chain of mechanical explanations does not stop at the level of

individual rationality. There is nothing in the concept of mechanical explanation that indicates that these micro-level processes would always constitute facts concerning the deliberate activities of persons. Supra-individual entities or characteristics may surely be referenced in mechanisms (Mayntz 2004). Many filtering mechanisms that are similar to natural selection can only be understood as a population-wide process, and when the units that are chosen are organizations (for example, corporations), it is easy to think of the mechanism as supra-individual. If you're want to understand how anything works, you'll need to go beyond the level of conscious thought. Implicit biases (see Kelly and Mallon in this book) are one example of human information processing facts that may be significant to understanding purposeful behavior. Intentional activity does not need abandoning mechanical reasoning. The implicit reality of mechanical thought is another reason to question purposeful fundamentalism. Mechanists see explanation as factual. Only by accurately representing the real causal structure that generates the observable events can an explanation be considered complete. In other words, if the explanation relates to the objectives and preferences or beliefs of the agents, the actors must have these mental states. Because it doesn't capture the key components of the causal process, mere as-if storytelling is not sufficient for a mechanical explanation. Many rational choice theorists have an instrumentalist stance, which is at odds with this realist viewpoint. A person's ability to justify any conduct does not entail that the rationalizations are also the proper causal explanations for that acts. Because of this, there is not a good basis to treat purposeful descriptions of our actions as better explanations. It is vital to realize that my argument is restricted in scope. Intentional explanations are and will continue to be an important element of the social science explanation toolkit, and that is something I do not dispute. As far as I'm concerned, I think deliberate explanations are valid causal explanations. Furthermore, in most mechanismbased theories of social phenomena, the deliberate attitudes of people play a significant role. The only thing I'm disputing is the idea that purposeful or rational explanations of human behaviour have exceptional explanatory power. The prominence accorded to specific explanatory components in the mechanistic view of explanation is not based on their value. My rejection of intentional fundamentalism should not be construed as a general assault on rational choice theory, which I do support. Most of the time, a simplified form of intentional psychology is both better and all you need in social science. For example, it is natural that social scientists want to keep the psychological assumptions of their models as basic as possible while trying to grasp social complexity. If the idealizations do not lead to a significant misunderstanding of the causal process, they are perfectly acceptable.. However, the practical need of these idealizations does not justify the acceptance of purposeful fundamentalism in the first place. The idea that the social sciences and the sciences of cognition should have a distinct division of labor is not supported by my reasoning. The division of labor's borders aren't set in stone because of the adaptability of mechanical levels. All gaps across levels of analysis3 are to be filled by mechanistic interfield theories, which are inherent in the concept of mechanistic explanation. Instead of trying to exclude psychology from studying their subjects, social scientists need to figure out how to integrate social and cognitive systems that have been studied separately. Recent efforts to merge neuroscience and economics have shown that this is not as simple as it seems (Kuorikoski and Ylikoski 2010). 2

Conclusions

Here, I have tried to explain how the mechanismbased theory of explanation will affect the usual methodological individualism discussion. I have suggested, drawing on philosophers who have examined the mechanical explanation in biology, that the individualism debates' premise of a singular, privileged, and all-encompassing individual level should be abandoned. Instead of relying on philosophical metaphors to explain micro-macro relationships, I believe that we should pay more attention to how genuine macro social facts are incorporated into theories and explanations in social scientific research. It's more about connecting largescale social facts to small-scale social interactions than it is about finding a mechanism to identify the interrelationships across different levels of reality.

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