

Philosophy of Social Science: Reductionism

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Outline

- 1 Explaining Revolutions
- 2 Social Theory and Social Ontology
- 3 Agents and Social Explanations
- 4 Evolutionary Explanations

Naturalism

- Individual persons with their beliefs, values, emotional responses, choices, and actions;
- Fire departments, university administrations, churches, laws, customs, and cultures.
- Are there really two kinds or levels of phenomena? Can the social level be reduced to the individual level?
- Is something lost when we treat a church as nothing more than the set of its members?

Explaining Revolutions

- Oppressive regimes often manage to keep people under their control in spite of the most appalling conditions.
- When people struggle under oppressive regimes, why don't they just rise up against the unjust colonial official or dictator?
- De Tocqueville found that, surprisingly, the French Revolution occurred after a period of unprecedented prosperity.

The “J-Curve” Theory of Revolutions

“Revolutions are most likely to occur when a prolonged period of objective economic and social development is followed by a short period of sharp reversal. The all-important effect on the minds of people in a particular society is to produce, during the former period, an expectation of continued ability to satisfy needs-which continue to rise-and during the latter, a mental state of anxiety and frustration when manifest reality breaks away from anticipated reality. The actual state of socioeconomic development is less significant than the expectation that past progress, now blocked, can and must continue in the future . . . Political stability and instability are ultimately dependent of a state of mind, a mood, in a society.” - James Davies 1962

“Free Riding” as a Prisoner’s Dilemma

		Jones	
		Cooperate	Defect
Smith	Cooperate	2, 2	0, 3
	Defect	3, 0	1, 1

Contemporary Introduction, Figure 5.5

Assurance Game

		Player 2	
		Cooperate	Defect
Player 1	Cooperate	3, 3	0, 1
	Defect	1, 0	2, 2

Contemporary Introduction, Figure 6.1

The Problem of Revolutions

- Strong norms of solidarity, such as bonds of ethnicity or feelings of nationalism, might explain how some revolutions overcome the free rider problem.
- When the revolution is larger, however, a new kind of defection arises.
- Why, a potential revolutionary might ask, should I choose to value nationalism, when so many others are already risking their lives for the Fatherland?
- The individual is asking whether to cooperate with or defect from the norms of solidarity.

Adding a Middle Level of Aggregation

“Investigations of crowd actions in the revolutions of 19th century Europe show that those who manned the barricades were not random assortments of individuals, but groups of individuals recruited and organized along neighborhood lines . . . The same appears to be true of workers and peasants in the Russian revolution, where local communities provided the framework for organizing and taking revolutionary action.” - Goldstone 1994

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The Individualism–Holism Debate

“The laws of the phenomena of society are, and can be, nothing but the laws of the actions and passions of human beings united together in the social state. Men, however, in a state of society, are still men; their actions and passions are obedient to the laws of individual human nature. Men are not, when brought together, converted into another kind of substance, with different properties; as hydrogen and oxygen are different from water, or as hydrogen, oxygen, carbon, and azote, are different from nerves, muscles, and tendons. Human beings in society have no properties but those which are derived from, and may be resolved into, the laws of the nature of individual man.” - John Stuart Mill 1872

The Individualism–Holism Debate

“in the nature of society itself that we must seek the explanation of social life. We can conceive that, since it transcends infinitely the individual both in time and space, it is capable of imposing upon him the ways of acting and thinking that it has consecrated by its authority. This pressure, which is the distinctive sign of *social facts*, is that which all exert upon each individual.” - Durkheim 1895

The Individualism–Holism Debate

- **Theoretical:** individualists hold that the theories of the social sciences can be derived from theories of psychology, while holists hold that social scientific theories are logically independent of lower-level theories.
- **Ontological:** individualists hold that only human agents and their properties exist, while holists hold that social entities and properties also exist.
- **Explanatory:** individualists hold that explanations in the social sciences must make reference to individual actions, while holists also accept social-level explanations.

Definition and Theoretical Reduction

- Reductionism: “Expectation” in social-level theory might be an average of individual expectations.
- Mill demanded that social-level theory be derived from individual-level theory.
- How to define “revolution”?
- The problem of the remainder and the problem of multiple realizability.

The Problem of the Remainder

- Maurice Mandelbaum's classic essay "Societal Facts" (1955).
- Groups like "trade union" and "church" do not decompose directly into individuals.
- If trade unions and churches are to make decisions as Goldstone's theory requires, they must have an internal structure, such as leader or shop steward, decision-making processes within the group in terms of norms or rules.

The Problem of Multiple Realizability

- Multiple realizability is the fact that many social-level terms apply to an open-ended variety of individual arrangements.
- For example, a revolution can be constituted by many different arrangements of individual actions: the Russian Revolution involved one set of individuals with their various interests and situations, while the French Revolution involved another.
- Revolutions, churches, labor unions, ethnic groups, and so on are all types that can be exemplified by many possible token aggregates of actions and attitudes.

The Burden of Definition

- Since priests are individual people, why isn't "being a priest" something that can appear in an individualist theory?
- It would be impossible to explain individual action without relational terms like "mother of" or "lives in the same household as."
- Game theory, for instance, appeals to only the player's utility functions, beliefs, game payoff s, and the game rules.
- Social roles like "shop steward" have no place in this theory except as part of the description of a person's beliefs or utilities.

Supervenience and Non-Reductive Individualism

- If the theories are irreducibly different, one might conclude, they must be about different things. Hence, each theory has its own ontology.
- One might accept the multiple realizability argument and still contend that each revolution, church, or trade union is made up of a particular constellation of agents and actions.
- The decision of a trade union to join a general strike and the beliefs, attitudes, and actions of the union members are therefore just two descriptions of one event.

Supervenience and Non-Reductive Individualism

- Roughly, properties of type A supervene on properties of type B if and only if any change in A properties or any difference between A properties requires a change or difference in B properties.
- Supervenience is an ontological relationship of dependence between properties.
- The combination of supervenience and multiple realizability permits a sophisticated holist position which admits that there are no social objects, but insists that there are non-reducible social properties.
- Examples: cuckoo clock; convening a strike

Methodological Localism

- Non-reductive individualism, like other forms of ontological holism, permits social scientists to make causal generalizations at the social level.
- How could higher and lower level properties be causally related?
- Example: the change in GNP causes individuals to act in revolutionary ways.
- “downward causation”: changes in social level properties cause changes in individual behavior. But how?

Methodological Localism

- Durkheim mentions a “pressure” exerted by social facts on individuals.
- Chances are, you feel guilty after driving through a stop sign on a deserted street late at night.
- Methodological localist: social properties form both the framework for individual decisions and the character of the agents.
- Individuals learn to perceive the social properties of their environment, including norms, social roles, institutions, and so on. They respond to these features of their environment, and through their action, new social properties emerge.

Methodological Localism

“There is no action at a distance in social life; instead, individuals have the values that they have, the styles of reasoning, the funds of factual and causal beliefs, etc., as a result of the structured experiences of development they have undergone as children and adults. On this perspective, large social facts and structures do indeed exist; but their causal properties are entirely defined by the current states of psychology, norm, and action of the individuals who currently exist.” - Little 2007

Methodological Localism

- There is no causal relationship between social-level properties. All of the causes occur at the individual level.
- Structures and agents create each other, and an important project for social scientists is to determine how this interaction works in local contexts.
- Mechanistic explanation is particularly important for the social sciences.

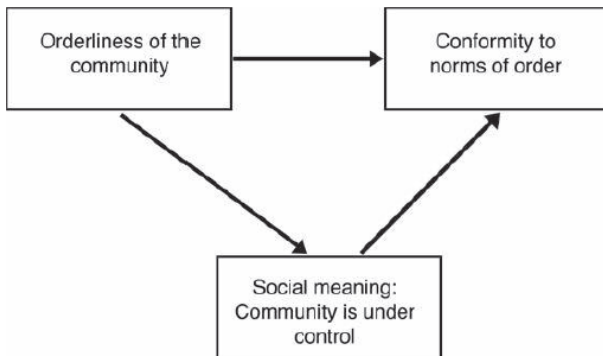
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Methodological Individualism

- Sir Karl Popper and Friedrich Hayek, political concerns: communism and fascism vs. democracy
- Broken windows theory: Failing to address disorderly conditions in certain areas has been hypothesized to spark a wave of serious crime within those needy neighborhoods or communities.
- Orderliness in a community communicates a message of control
- Tidy streets and well-behaved citizens show that social norms are being upheld in the community. Th is message deters disorderly behavior, and thereby reinforces the norms.

Broken Windows Theory



Contemporary Introduction, Figure 6.2

Methodological Individualism

“In principle, explanations in the social sciences should refer only to individuals and their actions. In practice, social scientists often refer to supraindividual entities such as families, firms, or nations, either as a harmless shorthand or as a second-best approach forced upon them by lack of data or of fine-grained theories.” - Elster 2007

Methodological Individualism

- **Strong methodological individualism:** Finished or rock bottom explanations in the social sciences must always refer only to individuals, their actions, and properties

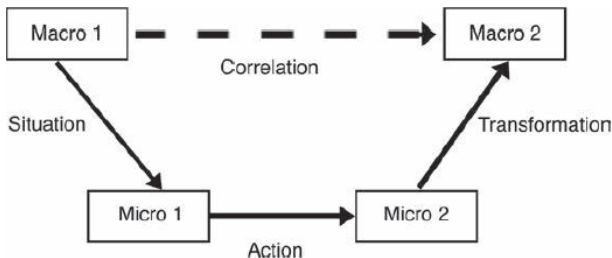
Methodological Individualism

“No assumption is made that the explanation of systematic behavior consists of nothing more than the individual actions and orientations, taken in aggregate. The interaction among individuals is seen to result in emergent phenomena at the system level, that is, phenomena that were neither intended nor predicted by the individuals. Furthermore, there is no implication that for a given purpose an explanation must be taken all the way to the individual level to be satisfactory . . . This criterion will ordinarily require an explanation that goes below the level of the system as a whole, but not necessarily one grounded in individual actions and orientations.” - Coleman 1990

Methodological Individualism

- **Moderate methodological individualism:** Explanations in the social sciences must make some reference to individuals.
- **Explanatory holism:** Explanations in the social sciences need make no reference to individuals; they may appeal only to social-level entities or properties.

Microfoundations



Contemporary Introduction, Figure 6.3

Agency and Mechanistic Explanation

- Micro-economics, rational choice theory in political science → analytical sociology and cognitive psychology in anthropology.
- Mechanism: “entities and activities organized such that they are productive of regular changes from start or set-up to finish” - Machamer, Darden, and Craver 2000,
- Agency: a privileged level of social scientific analysis?

Objections to Treating Agency as a Privileged Level

- First, there may be some kinds of action that cannot be understood as products of individual intentions.
- An individual cannot dance a waltz, win the World Cup, land on the moon, or invade Poland.
- If the explanation of joint action requires joint or collective intentions, then the basic elements of mechanistic explanation should include social groups as units of analysis.

Objections to Treating Agency as a Privileged Level

- Second, there are mechanisms to explain both individual action and social events in terms of sub-personal cognitive processes.
- This means that we must look to the cognitive sciences for our micro-level processes.
- Mechanistic explanation in the social sciences should directly link social macro phenomena with sub-personal micro phenomena, or is it?
- Interpretivism + sub-personal mechanisms?

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Unifying Social Sciences and Biology

“Reductionism does not mean that the explanatory regularities of social science (i.e., the principles of natural selection) be derivable from those of physical science. That is perhaps a project for biologists or philosophers of biology. Nor does reductionism here mean genetic reductionism. No one, least of all biologists, supposes that they provide the underlying mechanisms for human affairs or the evidence that can choose between narratives about them will always be genetic. Reductionism here is a thesis about how to test the links between the particular initial conditions social science sites [sic] to explain and its explanantia. Reductionism requires us to seek mechanisms, not necessarily genetic mechanisms. For each of the real patterns—transitory or persistent—uncovered in the human sciences, there must be a set of underlying mechanisms put in place by natural selection.” - Rosenberg 2005

Functions in Evolutionary Perspective

- To say that something has a function or is a functional kind is to describe the entity in terms of what it is supposed to do.
- Chicago has a police force in order to keep civil order.
- What a function is supposed to do and what it does in fact do may diverge.
- Durkheim, Kroeber, and Radcliffe-Brown were sufficiently impressed with the importance of functional explanation that they thought of societies as analogous to organisms.

Functions in Evolutionary Perspective

- A curious feature of functions is that the existence or characteristics of an entity are explained in terms of its effects, rather than its causes.
- Many have thought that this made functions both metaphysically and epistemologically distinct from ordinary causes.
- The prevalence of functions in the social world has therefore been taken as a reason for thinking that the social sciences must be distinct from the natural sciences.
- If functions are metaphysically distinct from ordinary, efficient causes, and if they cannot be reduced to efficient causes, then the social sciences do not reduce to psychology, biology, or any other natural science.

Three common Objections to Functional Explanation

- 1 First, since the social entity must exist in order to have any effects, functional explanations appear to require a mysterious backwards causality; the effects somehow bring the cause into existence.
- 2 Second, functions are just too easy to find. An institution or social practice will have many, many effects. Chicago police department annoys motorists who want to speed.
- 3 Societies are disanalogous to organisms in at least two crucial ways: no genes for a society; societies are not bounded in space and time in the way organisms are.

Three Criteria of Functional Explanations

Harold Kincaid, 1996:

- ① A causes B
- ② A persists because it causes B
- ③ A is causally prior to B

Evolutionary Functions



Contemporary Introduction, Figure 6.4

Replies to Three Objections to Functional Explanation

- 1 First, on a contemporary analysis like Kincaid's, functions are a particular arrangement of ordinary, efficient causes. They are not an additional mysterious kind of causality.
- 2 Second, Kincaid's analysis is able to distinguish the functions of a trait from its irrelevant effects.
- 3 Third, in evolutionary game theory, strategies are transmitted, not genes. Cultures do not have clear boundaries, but it were strategies, ideas, and behaviors that are being selected, not whole cultures.

Reference

- Mark Risjord (2014) *Philosophy of Social Science: A Contemporary Introduction*, Routledge.