Philosophy of Social Science: Naturalism

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Last Time:

3 key issues in the philosophy of social science:

1. Normativity
2. Naturalism
3. Reductionism

Outline

1. Theories, Interpretations, and Concepts
2. Interpretive Methodology
3. Action and Agency

Naturalism

"Naturalism" is the name for a variety of views holding that the social sciences should be like the natural sciences in some important way.

- Natural Sciences: postulating laws, imagining mechanisms too small to view with the unaided eye, and ever more precise measurement.
- There seems to be something about humans that makes them impossible to measure, predict, or explain.
- Are there laws that will explain love? Can democracy be measured?

Concepts and Theories

- "atom" or "gene"
- "inflation" and "culture"
- Concepts change in the light of new evidence only insofar as they are parts of theories.

Naturalism and Interpretivism

- Naturalists have traditionally used a conception of theories that draws on empiricism.
  - On this view, both social and natural sciences postulate laws in order to systematize observations and provide the basis for explanation.
- The alternative to an empiricist view of theory is often called interpretivism.
  - Proponents of this view have argued that searching for laws and causal explanations misses the unique character of the social world.

Aggression, Violence, and Video Games

Do violent video games cause aggressive behavior?

- Social learning theories: children learn how to respond to social situations by observing and modeling the behavior of others.
- Genetic theories: some individuals are prone to interpret situations as threatening and are more likely to respond violently.
- A third factor: the innate disposition

The Problem of Measurements

How to find a way of identifying aggression in an experimental setting?

- A questionnaire after game-play, asking subjects to report their feelings or thoughts.
- Identify aggressive thoughts by asking the subjects to complete open-ended stories.
- Play a computer game, the winner gets to set the volume and duration of a noise blast heard by the loser.

The Buss-Perry Aggression Questionnaire

- Buss and Perry, 1992
- 29 statements
- Scale of 1 to 7
- 4 factors: physical aggression, verbal aggression, anger, and hostility

The Buss-Perry Aggression Questionnaire

The verbal aggression factor (Buss and Perry 1992, 454):

- I tell my friends openly when I disagree with them.
- I often find myself disagreeing with people.
- When people annoy me, I may tell them what I think of them.
- I can't help getting into arguments when people disagree with me.
- My friends say that I'm somewhat argumentative.

Problems of Construct Measurements

- Is it really possible to measure things like “aggression”?
- what is the concept we are trying to capture, and how would we know that we have it right?
- Does it matter if the teen gamers think about aggression differently than the social scientists who study them?
- How can a questionnaire be evidence for a causal association?
- Can a causal law linking video games with aggression really explain why Fred punched his little brother?

The Empiricist View

- Both social learning theories and genetic theories postulate that aggression arises from an enduring feature of a person: an "aggressive personality"
- It is a theoretical entity or posit. Not directly observable.
- The empiricist view of theory has been commonly expressed by social scientists in their writing about theories and theory construction.

The Empiricist View

- A theory is a structure of general statements that explains some phenomena and permits predictions about them.
- These statements are often called "laws" or "nomological generalizations"
- The statements of the theory are deductively related and form a logically unified structure.
- The generalizations of a good, scientific theory should be precise enough to permit the deduction of testable hypotheses.
- The theory can be epistemologically justified by comparing these consequences of the theory with observation.

The Empiricist View

- The concepts of a theory are expressed by the substantive words that appear in the theory's general statements.
- In precisely quantified theories, the concepts are often associated with the variables of the laws.
- $F = ma$
- It relates force, mass, and acceleration (Concepts)

The Empiricist View

- What are often called "theoretical concepts" are those that are relatively remote from observation appear in the theory's general statements.
- On the empiricist view, the statements of the theory give content to the theoretical concepts.
- In Newton's theory, the theoretical concept of mass is the quantity that is equal to force divided by acceleration.

The Empiricist View

- "Aggressive personality" is a theoretical concept. It is not directly observable.
- Both social learning and behavioral-genetic theories are systems of generalizations about how aspects of personality are developed, maintained, and expressed.
- Through this system of law-like generalizations, they give content to concepts like "aggressive personality"

The Empiricist View

To test the theory, the investigators derive hypotheses that satisfy two criteria:

- The hypothesis should be logically entailed by the theory;
- It should include concepts that are amenable to direct or indirect observation.

Construct Validity

- Why should we think that these patterns of survey response represent anything?
- Why should we think that a higher score on the physical aggression factor of the Buss-Perry Aggression Questionnaire means that the person is physically aggressive?

Construct Validity

- A realist position about construct validity holds that a valid construct is one that measures what it purports to measure.
- An instrumentalist view of construct validity holds that a valid construct is one that simplifies and systematizes our past observations and permits accurate predictions of the future.
- Cronbach and Meehl, 1959
- Instrumentalism: observed facts are the only thing we have.
- Realism: 1) Measurements require commitment of existence; 2) Measurement instruments and measured object must be causally related.

Interpretivism

- Context matters: "That is an incoherent statement!"
- The whole empiricist apparatus of law-like generalization and hypotheses testing is blind to the subjective character of social reality.

Ideal Types and Verstehen

- Max Weber, "Ideal Type", 1904
- Concepts of the social sciences need to capture the meanings and motivations that are significant for the subjects.
- Theoretical concepts needs to identify the typical feelings, beliefs, and social meanings that stand behind the behavior. Behavioral survey is not enough.
- Aggressive behavior can be defined in terms of the "intent to cause harm"(Anderson and Bushman, 2002)

Ideal Types and Verstehen

- Laws should not be a necessary basis for social scientific understanding
- The expression of laws in the social sciences already required well-developed ideal type concepts.
- Weber: ideal types are idealizations; they are tools for the identification of central aspects of a phenomenon
- An ideal type predicts actions, historical changes, or social developments on the basis of the particular motivations it identifies.

Ideal Types and Verstehen

- Focus: subjective character of the social world
- Ideal types treat the subjectivity of the agents as a construction of the social scientist.
- Schutz, 1954: "common-sense thinking" - expectations, regulations, roles, and institutions that make up our social reality.
- Verstehen is "the particular experiential form in which commonsense thinking takes cognizance of the social cultural world."

Ideal Types and Verstehen

"Each term in a scientific model of human action must be constructed in such a way that ... the typical construct would be understandable for the actor himself as well as his fellow-men in terms of common-sense interpretation of everyday life." - Schutz 1953

Hermeneutics and Meaning

What is the relationship between the subjects' language and the specialized language of the scientist?

- Empiricist approaches: theory and observation
- At the outset of social research, we do not know the subjects' motivations, feelings, meanings, and so on. Inquiry must therefore begin with a neutral description of behaviors.
- Charles Taylor, 1971: rule-constituted activity vs. rule-governed activity, translation
- A neutral language restricted to the motions of bodies, answers on a survey, or even descriptions of the beliefs and attitudes of the agents would be unable to capture rule-constituted activities.

Thick Descriptions

- Geertz, 1973b: the epistemology of ethnography
- To describe a person as simply walking would be a thin description. Thin descriptions have minimal relationships to other descriptions.
- A thicker description of the same event would be that "the person is walking to Bowden Hall", or that "she was walking to class."
- These are thick descriptions because they show how the action is related to other aspects of the person's life and social environment.

Thick Descriptions

- Thick descriptions of actions or social events have, in virtue of their meaning, specific relationships to other actions, events, motivations, possibilities for response, outcomes, strategies, and so on.
- The conceptual relationships expressed by thick description are already embedded in the language, symbolic system, and actions of the subjects. Common-sense Thinking.
- Geertz treats the meaning of a word as its conditions for use in a community.
- Because meaningfulness depends on patterns found across the whole community, thick description captures what the members of the community have in common—their culture.

Thick Descriptions

- Culture is an "acted document"!
- Schutz's common-sense thinking becomes nothing more or less than the totality of actions, utterances, and social events that make up the culture.
- The goal of interpretive social science is to thickly describe the culture, and thereby express in the interpreter's language the relationships that make the subjects' social world meaningful.
- Problems: different groups; political act; artificial creation of the anthropologist

Realism and Social Concepts

- Interpretivists often defend a form of anti-realism known as social constructivism.
- Social constructivists argue that social factors play an ineliminable role in the constitution of scientific concepts and theories.
- What is taken as a "scientific fact" is the result of a process of negotiation that is thoroughly imbued with political, moral, and economic interests.

Natural Kinds vs. Nominal Kinds

- Objects denoted by a natural kind term share a cluster of properties. The cluster is not an accidental co-occurrence.
- Tiger; Gold; German Beer
- Social Kinds: social events (the Bolshevik Revolution), institutions (Apple Corporation), roles and statuses (married, police officer), race, gender...
- Natural kinds enter into robust, causal generalizations. What about social kinds? post code vs. marriage

Social Kinds

Michael Root (2000) argued that real social kinds have three features:

- Local deployment: The concept is used by people in a community to make distinctions among themselves.
- Those classified take up the classification and it forms part of their self-conception or identity.
- Norms: There are norms that prescribe differential treatment based on the classification.

Outline

1. Theories, Interpretations, and Concepts
2. **Interpretive Methodology**
3. Action and Agency

Interpretive Methodology

- How interpreters acquire knowledge of others' experiences, meanings, and values?
- What is the evidence for an interpretation?
- What makes one interpretation better than another?
- What are the constraints on interpretation

Qualitative Methods

- Interviews, participant observation, and focus groups
- Life histories, production and analysis of video or audio recordings, discourse analysis of conversations, photography and the analysis of visual images
- Their goal is to uncover the meaning, experience, and values implicit in the society or culture.

Interviews

The epistemic advantage of an interview is supposed to be that it provides:
"access to the participants' understanding of the world and their experiences. Qualitative interviews give participants the opportunity to describe experiences in detail and to give their perspectives and interpretations of these experiences. The interviewer has the opportunity to discuss and explore with the participants and to probe more deeply into their accounts." - Tylor, 2005

Extrapolation

"Formal quantitative understandings of generalizability are generally unhelpful and not applicable for qualitative research. This is because statistical generalizations require random representational samples using data that is isolated from any particular context or situation. In contrast, qualitative research engages in-depth studies that generally produce historically and culturally situated knowledge. As such, this knowledge can never seamlessly generalize to predict future practice." - Tracy, 2010

Interpreter's Authority

- If I want to know what someone is thinking, I should ask them.
- But ... the interpreter is constructing the very object that is to be interpreted.
- The interpreter may create a sense of place by pulling together events and details that did not really co-exist.

Extrapolation

"The authenticity of a life is not to be understood simply in Romantic terms. There is no guarantee of biographical or narrative unity. The artifacts and memorabilia of a life-memories, documents, images-are themselves achievements. Life narratives, whether they be retrospective or prospective accounts, are always pastiche, as it were. They are pieced together, always changeable and fallible, out of the stock of mementos. By examining how a biography is constructed, we move from the modernist theme of representation to the postmodern theme of strategies for the cultivation of the self." - Atkinson and Silverman 1997

Reflexivity

- If the interpreter can (somehow) recognize and reflect on these background conditions of the research, the research will be more epistemologically robust.
- Bracketing: qualitative researchers are advised to identify their beliefs, values, interests, feelings, and social roles relevant to the subject of study.
- Researchers are urged to reflect on the way that these might influence the data collection and analysis.
- An alternative method: explicitly describe the interpreter's experiences, feelings, and mistakes and integrate them into the analysis and description.

The Problem of Apparent Irrationality

- Explaining bizarre cultures concerns about how interpretations should change. But what makes one interpretation better than another?
- Bracketing: qualitative researchers are advised to identify their beliefs, values, interests, feelings, and social roles relevant to the subject of study.
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The Problem of Apparent Irrationality

"Azande do not perceive the contradiction as we perceive it because they have no theoretical interest in the subject, and those situations in which they express their beliefs in witchcraft do not force the problem upon them." - Evans-Pritchard 1937

The Problem of Apparent Irrationality

- False beliefs and illogical inferences require explanation in terms of mystical thinking, esoteric doctrine, the social function of the practice, or something similar.
- Asymmetry thesis: False belief and illogical inference need explanation, while true and logical beliefs do not.
- Winch, 1964: asymmetry presupposes that truth and rationality are language - or culture - independent standards against which interpretation can be judged.
- Cultural relativism: rationality and reality depend on culture.

The Principle of Charity

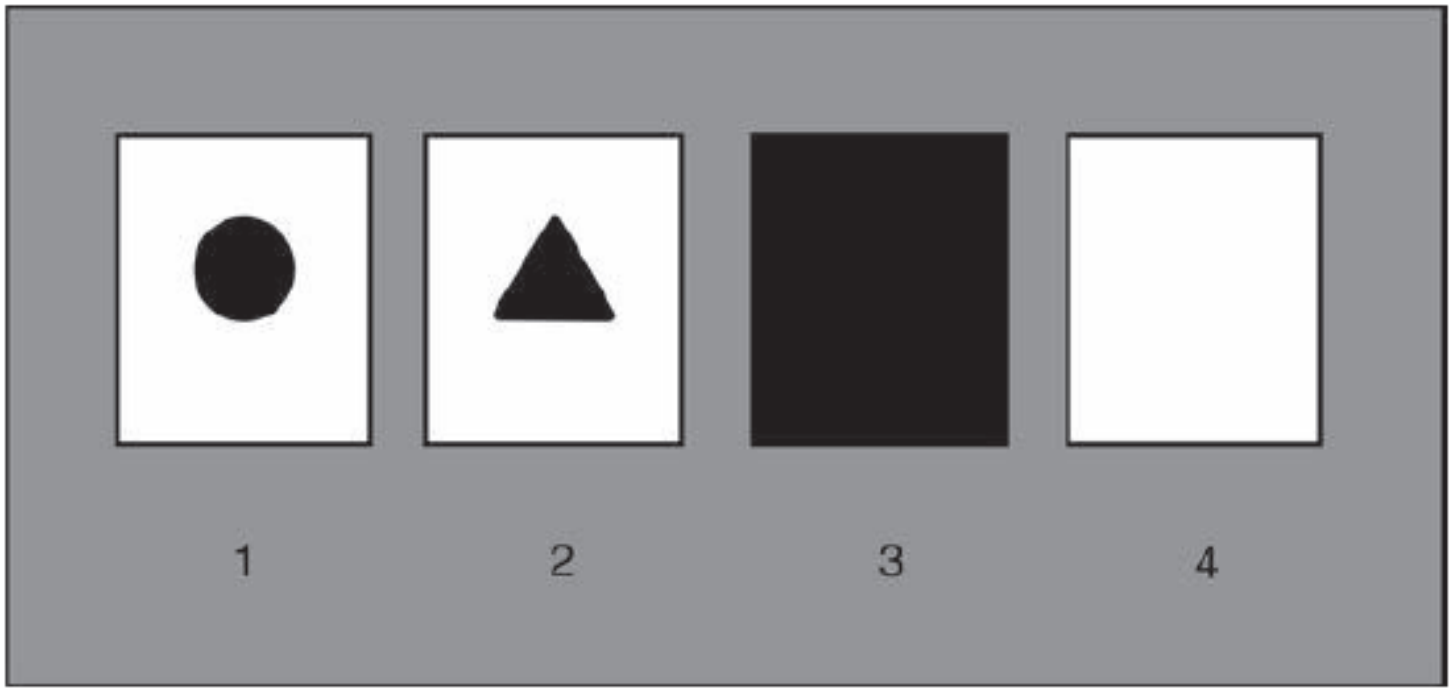
"How clear are we that the ancients - some ancients - believed that the earth was flat? Th is earth? Well, this earth of ours is part of the solar system, a system partly identified by the fact that it is a gaggle of large, cool, solid bodies circling around a very large, hot star. If someone believes none of this about the earth, is it certain that it is the earth that he is thinking about?" - Davidson, 1984

The Principle of Charity

- Interpret so that your interlocutors have mostly true beliefs.
- The principle of charity makes the most sense when understood as constraining the early stages of the inquiry.
- Agree on simple, everyday matter: "If the natives made no statements about the cat on the mat and the cow in the corn which can be translated to yield truths, the anthropologist has no way into the maze" - Hollis 1967

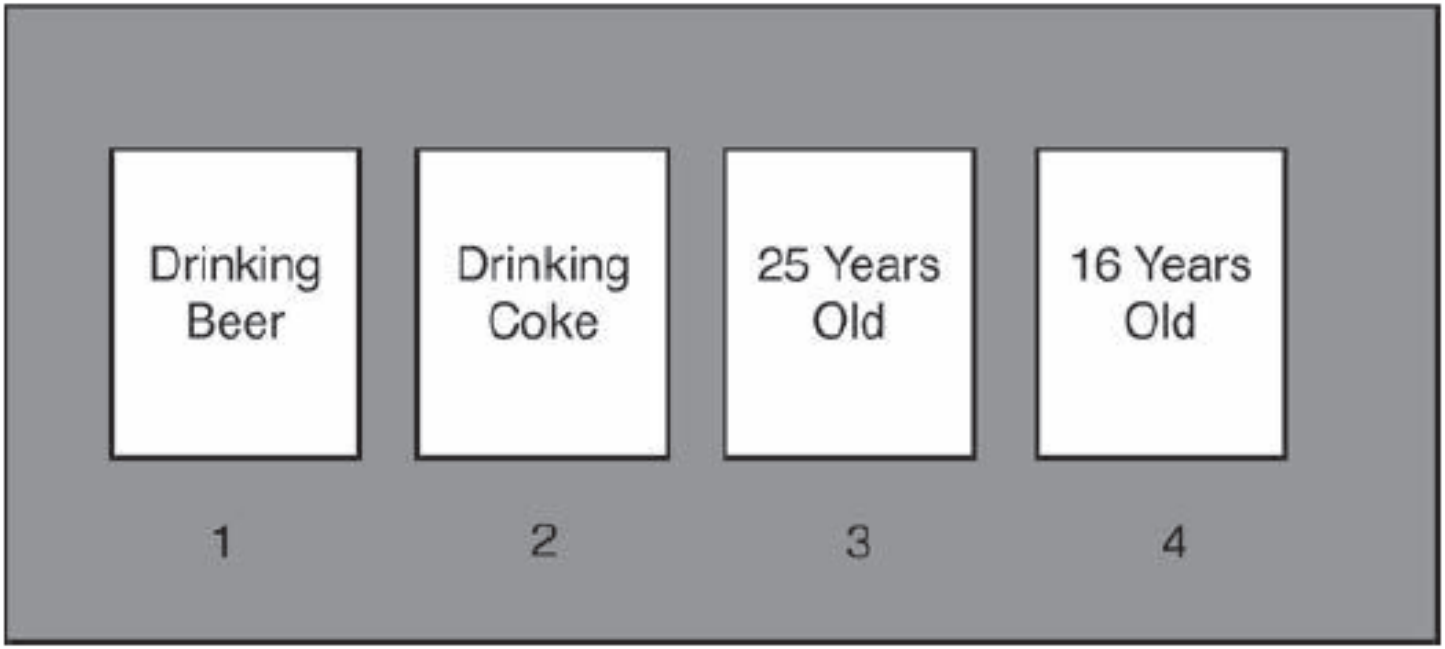
Wason Selection Task

If a card has a circle on one side, then it is black on the other side?



Cognitive Roots of Culture

"If a person is drinking beer, then he must be over 21 years old."



Bounded and Unbounded Rationality

- Human reasoning is domain specific in the sense that we are hard-wired to quickly solve problems of a specific sort. - Tooby and Cosmides, 1992
- We have evolved in a specific natural and social environment, and in order to survive we had to be able to reason about the problems this environment presented.
- Our capacity to reason about problems like the Wason Selection Task may be part of a cognitive process that is primarily designed to solve social problems like the detection of cheaters.

Interpretation and Cognitive Explanation

- Scott Atran, supernatural beliefs.
- On an interpretivist view, gods and spirits need to be understood as part of a system of ideas. They get their meaning from religious discourse on one hand and ritual practice on the other.
- Anti-naturalist programs in the social sciences have held that studies of the social world should be methodologically and theoretically isolated from facts of human psychology and biology.
- Cognitive explanations of social phenomena and their interpretation: blank slate

The Psychological Foundations of Culture

"The human psychological architecture contains many evolved mechanisms that are specialized for solving evolutionary long-enduring adaptive problems and that these mechanisms have content-specialized representational formats, procedures, cues, and so on. These richly content-sensitive evolved mechanisms tend to impose certain types of content and conceptual organization on human mental life and, hence, strongly shape the nature of human social life and what is culturally transmitted across generations." - Tooby and Cosmides, 1992

We Need Both Interpretation and Explanation

"Explanation and interpretation are, then, different cognitive tasks. They supplement and support one another in the pursuit of knowledge. . . . Specifically, interpretations presuppose (and may reorganize) our systematic, empirical knowledge, whereas successful explanatory theories both winnow and increase it. Interpretations uncover unexpected connections in the knowledge we already posses; the success of new explanatory theories establishes new vistas." - Lawson and McCauley 1990

Outline

1. Theories, Interpretations, and Concepts
2. Interpretive Methodology
3. **Action and Agency**

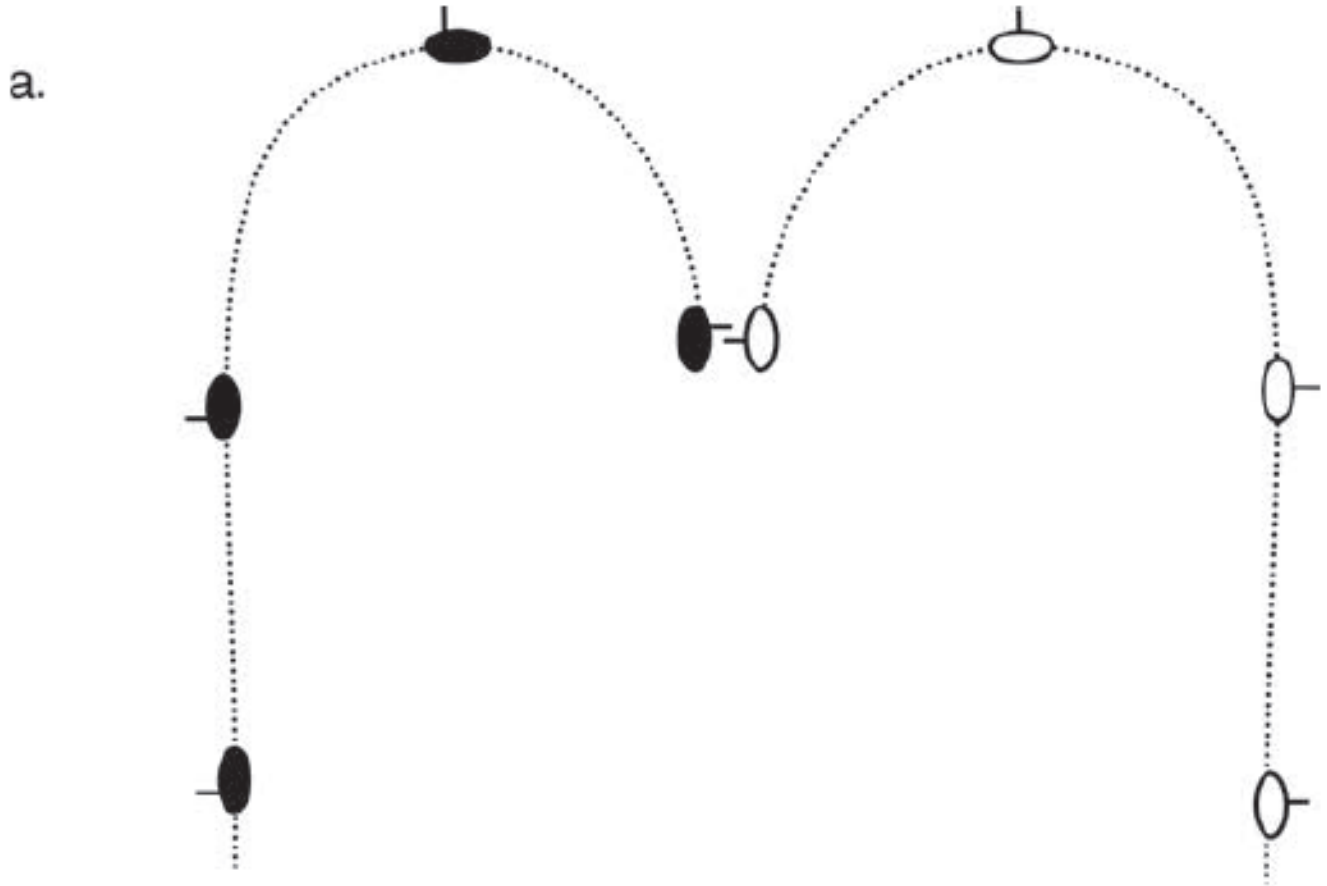
Action and Agency

- Can intentional actions be explained in ways familiar to the natural sciences?
- For instance, can scientifically established laws explain the actions of an individual?
- Are action explanations a species of causal explanation?

Explaining Action

- Contemporary historians are skeptical of explanations that make largescale events depend on the decisions of a "great man."
- Understanding the motivations of historical figures is often an important aspect of understanding the events of which they were part.
- Understanding intentions is even more important where the actions were a failure.
- Vice-Admiral George Tryon, commander of the British Mediterranean fleet, ordered two iron-clad battleships equipped with rams to turn toward each other. They collided, sinking the Victoria. What was he thinking?

Sinking of the HMS Victoria



Sinking of the HMS Victoria

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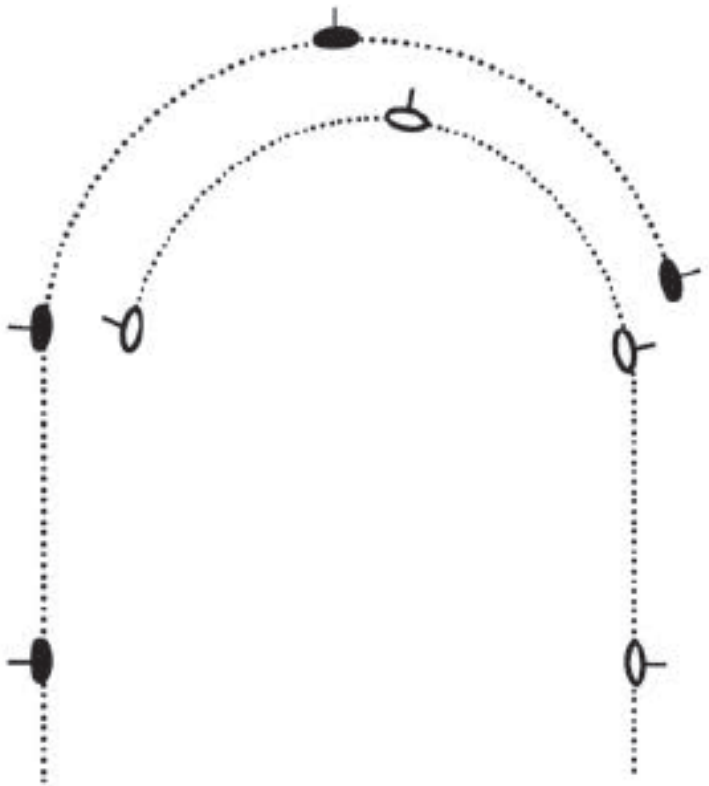
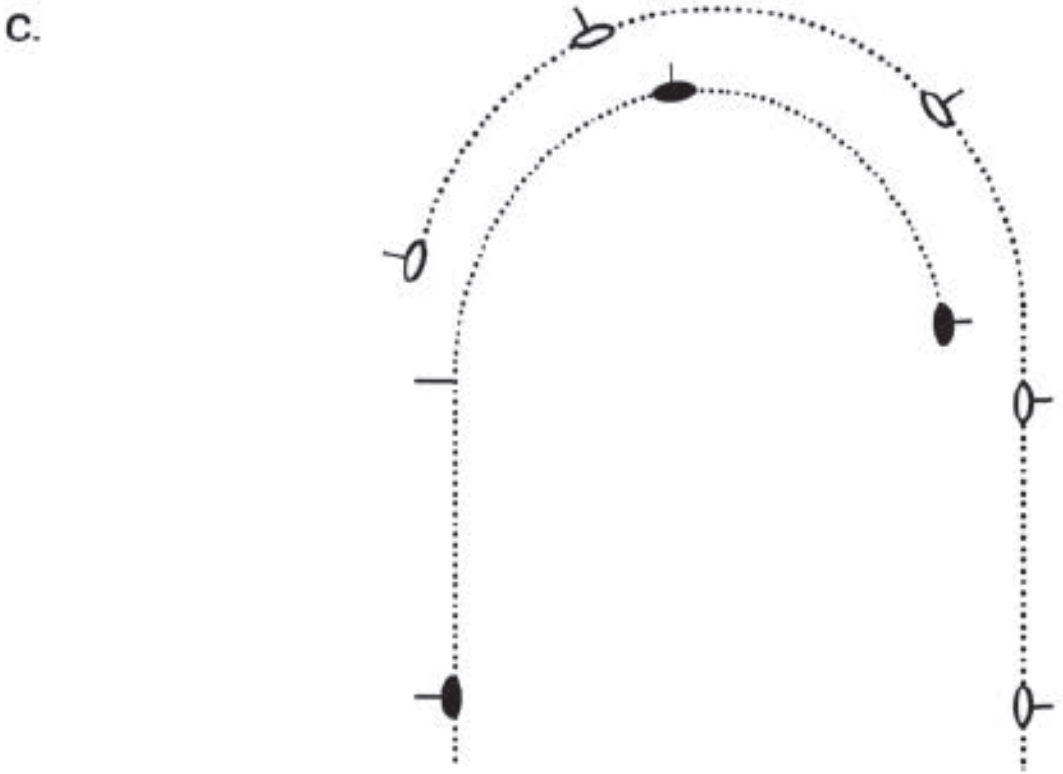


Sinking of the HMS Victoria



Explaining Action

- Instrumental rationality: If an agent wants to achieve a goal, and believes that doing A is the best means of doing so , then an instrumentally rational agent will do A.
- The explanation of an intentional action presents the agent's reasons, and these reasons make the action instrumentally rational.
- Intentional action explanations are not causal because a causal explanation does not assume that its subject is instrumentally rational.
- Naturalism and reductionism

The Function of General Laws in History

Carl Hempel: an explanation shows how an event to be explained satisfies a law or regularity.

- First, a scientific explanation must provide a law or set of laws which express a general relation between an antecedent or initial condition and the event to be explained.
- Second, it must describe the initial conditions.
- Third, it must show how the law and the initial conditions logically entail the event to be explained

D-N Model of Intentional Action

- If a person, S, wants to achieve goal G, and believes that doing action A is the best way to achieve G, then S will do A.
- S wants to achieve G.

- Therefore, S does A.

Reasons and Causes

There are two differences between reasons and causes that suggest it is mistaken to treat the principle of instrumental rationality as a causal law.(Winch 1958)

- First, because it invokes rationality, the principle of instrumental rationality is normative.
- Hermeneutics: there are two sets of concepts in the social sciences, whereas in the natural sciences there is only one.

Davidson's Naturalistic Anti-Reductionism

- While there may be many reasons that would justify an agent's action, only one of these will be the reason why he or she acted - the "primary reason" for the action.
- The primary reason is the belief and attitude that actually moved the agent to action. "Moved" is a causal notion.
- To explain an action, therefore, we need to find the reason that was also the cause, cause without a law.
- Contrary to the interpretivist position, no amount of thick description will show why an agent acted in a particular way.

Re-enactment and Verstehen

- The idea is simulation: To properly understand an agent's reasons in their capacity to move the agent to action, the action needs to be understood subjectively, from the inside.
- Collingwood and Wilhelm Dilthey: that theoretical descriptions of behavior ignore the inner, subjective character of the action.
- The idea of verstehen: social scientific understanding must capture the meaning the events have for the subjects.
- One challenge for a re-enactment view of social scientific understanding is that it needs to find an appropriate role for evidence

Re-enactment and Verstehen

"Suppose, for example, [the historian] is reading the Th eodosian Code, and has before him a certain edict of the emperor. Merely reading the words and being able to translate them does not amount to knowing their historical significance. In order to do that he must envisage the situation with which the emperor was trying to deal, and he must envisage it as that emperor envisaged it. Then he must see for himself, just as if the emperor's situation were his own, how such a situation might be dealt with; he must see the possible alternatives, and the reasons for choosing one rather than another; and thus he must go through the process which the emperor went through in deciding on this particular course. Thus he is re-enacting in his own mind the experience of the emperor; and only in so far as he does this has he any historical knowledge, as distinct from a merely philological knowledge of the meaning of the edict." - Collingwood 1946

Rationality and Utility

- Instrumental Rationality: If a person has goal G, and believes that doing A is the best means to achieve G, then the person will do A.
- It ignores the fact that people have many goals, and they are sometimes inconsistent. We need to rank subjective feelings.
- There may be other considerations that make one course of action better than another, even if we hold the goal fixed.
- Rational Choice Theory: at the moment of actual choice, the possible goals and beliefs collapse into a preference.

Rationality and Utility

Alternative Set	Ordinal Utility
Chicken and rice	2
Salad bar	1
Mystery meat	1
Chocolate cake	0

Rationality and Utility

- Rational agents pursuing "a goal" → A rational agent is one who acts to maximize his or her utility, where "utility" is defined by an ordinal utility function.
- Maximization of utility is not the same thing as maximization of profits.
- Anything can be an item in a preference set—affection of friends, bottle caps, feelings of satisfaction from having done a good turn. Preferences are not about selfish.
- Assessments of risks: think of the agent as making choices among prospects of satisfaction, or lotteries.

Von Neumann–Morgenstern Utility Theorem

Axiom 1

(Completeness) For any lotteries L, M, exactly one of the following holds:

$$L \prec M, M \prec L, \text{ or } L \sim M$$

Axiom 2

(Transitivity) If $L \prec M$ *and* $M \prec N$*, then* $L \prec N$*, and similarly for* $\sim$*.*

Von Neumann–Morgenstern Utility Theorem

Axiom 3

If $L \preceq M \preceq N$, *then there exists a probability* $p \in [0,1]$ *such that*

$$pL + (1-p)N \sim M$$

Axiom 4

(Independence): For any N *and* $p \in (0,1]$,

$$L \preceq M \quad \textit{iff} \quad pL + (1-p)N \preceq pM + (1-p)N.$$

Von Neumann–Morgenstern Utility Theorem

Theorem 1

For any VNM-rational agent (i.e. satisfying axioms 1–4), there exists a function u which assigns to each outcome A a real number u(A) such that for any two lotteries,

$$L \prec M \text{ if and only if } E(u(L)) < E(u(M)),$$

where $E(u(L))$ is given by

$$E(u(p_1 A_1 + \ldots + p_n A_n)) = p_1 u(A_1) + \ldots + p_n (u(A_n))$$

Rationality and Utility

- Game theory is the formal treatment of rational agents who can maximize their utility only by anticipating and responding to the actions of other rational agents.
- Game theorists model such situations by specifying the players, their possible actions, the payoffs, and the information available to them.
- Example: the Bismarck Sea

Game Theory

		Jones: Red	Jones: Black
Smith	Blue	\$200, \$0	\$300, \$200
	Green	\$100, \$100	\$0, \$300

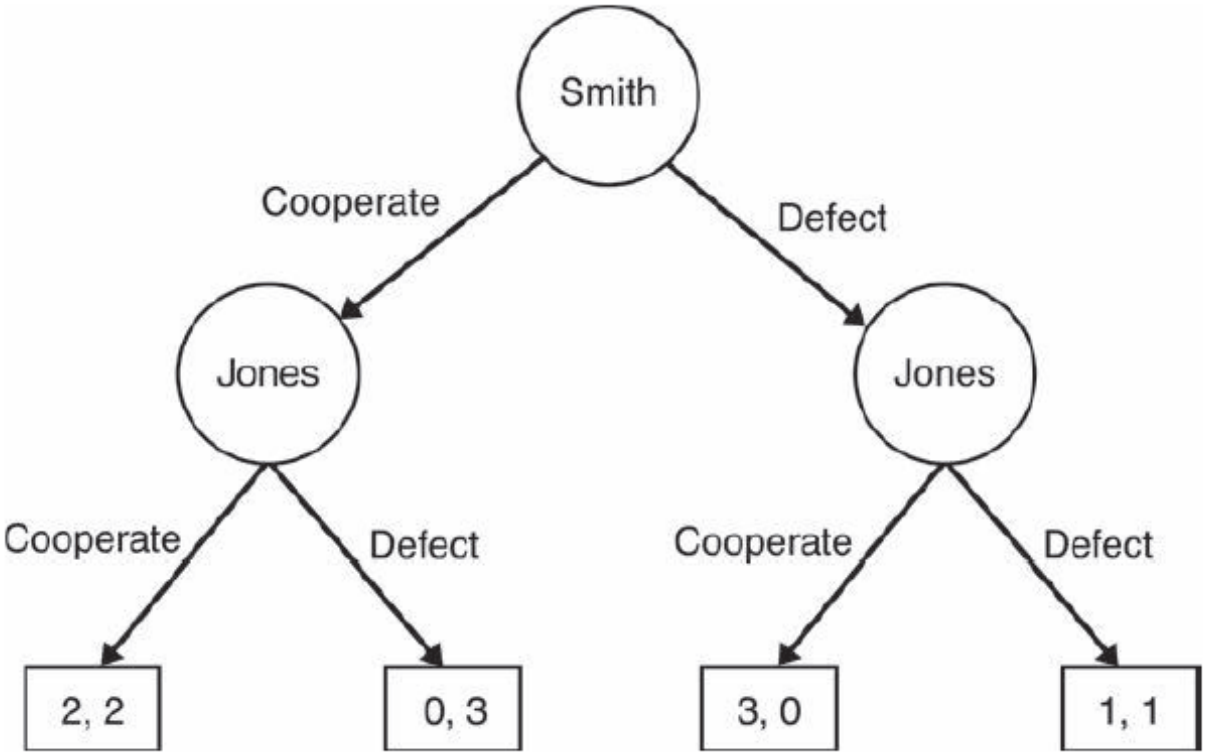
The Prisoner's Dilemma

		Jones: Keep Silent	Jones: Confess
Smith	Keep Silent	1 year, 1 year	10 years, 0 years
	Confess	0 years, 10 years	5 years, 5 years

The Prisoner's Dilemma

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

The Prisoner's Dilemma



Battle of the Bismarck Sea

		General Imamura	
		Send Convoy North	Send Convoy South
General Kenney	Send Reconnaissance North	2 days of bombing	2 days of bombing
	Send Reconnaissance South	1 day of bombing	3 days of bombing

Game Theory

- If the player has a strategy that brings him higher utility than any other strategy, no matter how the other agents act, the player is said to have a dominant strategy.
- In a Nash equilibrium, no player can do better by unilaterally changing strategies.

Battle of the Bismarck Sea

		HMS *Victoria*	
		Inside	Outside
HMS *Camperdown*	Inside	0, 0	1, 1
	Outside	1, 1	0, 0

Battle of the Bismarck Sea

		Jones: Stag	Jones: Rabbit
Smith	Stag	2, 2	0, 1
	Rabbit	1, 0	1, 1

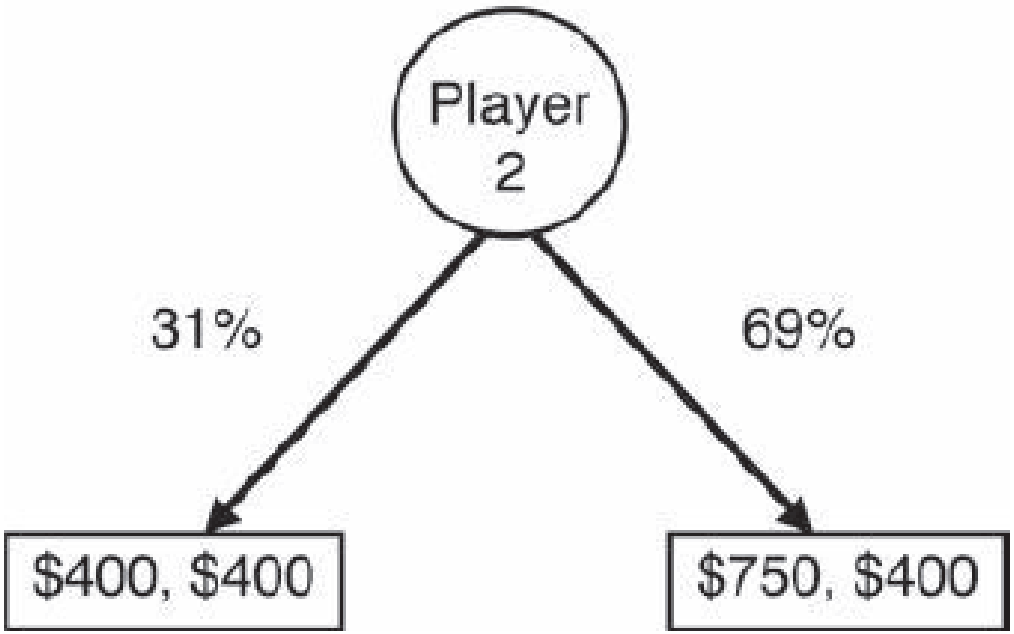
The Psychological Plausibility of Rational Choice Theory

- Rational choice theory puts all goals, values, and desires onto a single scale.
- Humans do not, in general, act to maximize their expected utilities
- Decision theory and game theory are not meant to be complete theories of human behavior.
- RCT explains typical human behavior, not the actual behavior of a specific individual.

Rational Fools?

"The contrast between sympathy and commitment may be illustrated with the story of two boys who find two apples, one large, one small. Boy A tells boy B, "You choose." B immediately picks the larger apple. A is upset and permits himself the remark that this was grossly unfair. "Why?" asks B. "Which one would you have chosen, if you were to choose rather than me?" "The smaller one, of course," A replies. B is now triumphant: "Then what are you complaining about? That's the one you've got!" B certainly wins this round of the argument, but in fact A would have lost nothing from B's choice had his own hypothetical choice of the smaller apple been based on sympathy as opposed to commitment. A's anger indicates that this was probably not the case." - Sen 1977

Game Theory in the Laboratory



Instrumentalism and Structuralism

- A "structural" theory: Rational choice theory explains largescale social phenomena, like revolutions, by showing how agents typically respond to the features of their environment.
- The model postulates idealized agents who are responding to specific costs and benefits.
- A kind of social event is then explained by showing how it arises as the result of the rational choices and strategic interactions of these ideal agents and the resources available to them.
- If we are not to be instrumentalists, we must evaluate whether the mechanisms postulated by the model are realistic.

Reference

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