Woodward 6
Causation and Laws

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Hempel's theses

H1. Every DN argument explains the facts mentioned in its conclusion.

H2. Every IS argument explains the facts mentioned in its conclusion.

H3. Every explanation is either a DN or an IS argument.

- It is now widely agreed that H1 and H2 are false.
- Some philosophers still endorse H3.
- Hempel's response to Scriven's ink bottle example:
  The explanation asserts a cause-effect relationship, which implies the existence of a law connecting the cause and effect.

The thesis (p. 163)

Causal claims imply the existence of an underlying law.

Hempel said this in his response to Scriven's ink bottle example.

What is the underlying law implied by "C causes E"?

- Not that all C's are followed by E's (ink bottle example).
- Not that most C's are followed by E's (smoking causes lung cancer).
- Perhaps laws that imply "X is always followed by Y," where X is some description of C and Y is some description of E. (Davidson)

There may be such laws, but why think "C causes E" implies their existence?

An argument against the meaning thesis (p. 171)

- The concept of a law of nature, as understood in contemporary science and philosophy, is relatively recent. People made singular-causal claims, and offered them as explanations before that time.
- Even today, many people, and some cultures, are unfamiliar with this concept, but practically all humans make singular-causal claims.
- It is implausible that linguistic locutions have implications of which, not only individual users, but even entire linguistic communities, are unaware.
- Therefore, the meaning thesis is implausible.

Hempel couldn't see any way of understanding causal claims other than as implying the existence of a law. But there is:

The manipulationist alternative (pp. 172–173)

- The content of causal claims is rooted in what we know about changing and manipulating nature, knowledge that can be grasped independently of the notion of a law of nature.

- E.g., according to (AC): "Knocking over the ink caused the carpet to be ruined" means that intervening to prevent the knocking over would have prevented the carpet being ruined, given that the direct causes of the carpet being ruined which are not on this path are fixed at their actual values.

The explanation thesis

The thesis (p. 175)

Ordinary causal statements are explanatory because they convey some information about the ideal DN or IS argument.

Railton said a statement conveys information about the ideal explanation if it reduces uncertainty about some features of this ideal explanation.

Example

"Knocking over the ink caused the carpet to be ruined" doesn't imply the existence of a law, but there probably are underlying laws governing the situation, and this statement limits what they could be.

First argument against the explanation thesis (pp. 176–177)

The explanation thesis assumes that providing information about the ideal DN or IS argument has explanatory value. But that isn't so; providing such information may have no explanatory value.

Examples

- To say that the ideal explanation of why the carpet was ruined involves the laws of Newtonian mechanics does not at all explain why the carpet was ruined, though it provides information about the ideal DN explanation.
- Deducing the height of a flagpole from the length of its shadow provides complete information about the ideal DN argument but is not an explanation.

Second argument against the explanation thesis (pp. 179–181)

- An explanation is something that provides understanding.
- Therefore, features of an explanation that make it explanatory must be features that people who use the explanation know.
- People who use ordinary causal explanations often don't know whether there are underlying laws or, if there are, how the explanation provides information about what those laws are.
- Therefore, the explanatory value of ordinary causal explanations cannot consist in providing information about underlying laws.

1. There is no generally accepted philosophical account of laws themselves.
2. Especially in sciences like biology and economics, people disagree about which generalizations are laws. E.g.:
   - Mendel's "laws"
   - The "law" of supply and demand

   The controversial cases may hold only in limited domains, have exceptions that defy any simple characterization, and/or be imprecise.

This is another objection to accounts of explanation, such as nomic expectability, that say explanation requires laws.

1. Hempel said that causal claims imply that some underlying law is true. What is Woodward's argument gainst this?

2. On a manipulationist account of causation, do causal claims imply that some underlying law is true? Justify your answer.

3. It has been claimed that ordinary causal statements are explanatory because they convey some information about an ideal DN or IS argument. State two arguments Woodward gives against this view.

4. State two reasons Woodward gives for saying that the distinction between laws and accidental generalizations is unclear. How it this relevant to theories of explanation, according to Woodward?