Retroduction in realist evaluation

The RAMESES II Project

What is retroduction?

There are different forms of reasoning in research and evaluation. The two most commonly described are induction, or inductive reasoning, and deduction, or deductive reasoning. Inductive logic derives conclusions from multiple observations: it builds theory from observation. Deductive logic starts from theory and tests propositions by seeing whether associations match expectations.

Realist research and evaluation uses 'retroduction'. Retroduction refers to the identification of hidden causal forces that lie behind identified patterns or changes in those patterns. It asks the question: 'why do things appear as they do?'(Olsen, 2010). The pre-fix 'retro-' comes from the Latin to mean, 'behind, beneath'.

> " Retroduction refers to the identification of hidden causal forces that lie behind identified patterns or changes in those patterns."

"Retroduction entails the idea of going back from, below, or behind observed patterns or regularities to discover what produces them"
(Lewis-Becket al, 2004)

The same idea is expressed clearly by Sayer (2000):

"Merely knowing that 'c' has generally been followed by 'e' is not enough: we want to understand the continuous process by which 'c' produced 'e', if it did. This mode of inference in which events are explained by postulating (and identifying) mechanisms which are capable of producing them is called 'retroduction'" (p 207).

> " Retroduction uses both inductive and deductive logic, as well as insights or hunches."

Retroduction uses both inductive and deductive logic, as well as insights or hunches. It involves thinking through what causal powers might be at work in producing observed patterns or changes in patterns. It is underpinned by a belief that an understanding of causation cannot be achieved using only observable evidence. Retroductive theorising requires that inquirers use their common sense, intelligence, expertise, and informed imagination to build and test theories about underpinning causal processes. These may not be able to be tested immediately: truly novel theories often precede the means or technologies to test them.

Charles Darwin's theory of species evolution via natural selection is an exemplar of retroduction. The theory of natural selection suggests that over time, individuals less suited to the environment are less likely to survive and less likely to reproduce. Individuals more suited to the environment are more likely to survive and more likely to reproduce and leave their heritable traits to future generations, which over time constitutes the process of natural selection. This slowly effected process results in populations changing to adapt to their environments, and ultimately, these variations accumulate over time to form new species (Mayr, 1982).

Darwin did not himself identify with realism or retroduction, yet his theory of natural selection explains the underpinning forces of evolution that explain species formation, evolution, and biodiversity. The theory helps us to 'see' evolution, even though it is difficult to observe. His theory was not produced through inductive and deductive reasoning alone. His was a deeply inspired view of evolutionary change which featured mechanisms that are not readily observable.

Retroduction in realist evaluation

In realist evaluation, the retroductive question is about the causal powers of the policy, intervention or programme, given the circumstances in which it is applied. How is it that Intervention X can produce outcomes $Y_{1..n}$ given conditions $Z_{1...n}$? Retroduction is used to theorise programmes and formulate context-mechanism-outcome configurations.

> ❝ In realist evaluation, the retroductive question is about the causal powers of the policy or programme.❞

Where a programme theory has been developed in advance, the process starts with deductive reasoning (seeking evidence to test the theory). Cases are examined, preferably to the point of saturation, checking that the patterns of success and failure, intended and unintended outcomes are consistent with the theory. Inconsistent cases may require the theory to be refined. That is, new theory is generated on the basis of observations, or inductive reasoning. That new theory is then put to the test in further cases (deductive reasoning again). The process of confirming, refuting and refining the theory continues as further instances are examined. That is, retroduction moves back and forth between inductive and deductive logic.

Retroduction is also used in realist reviews and wider realist research. Bhaskar, in *The Possibility of Naturalism*, asked: 'what properties do societies possess that might make them possible objects of knowledge for us?' (Bhaskar, 2015 p. 25). The question is inherently retroductive because it assumes that societies have underlying causal properties and that the task of realist inquiry is to understand those properties.
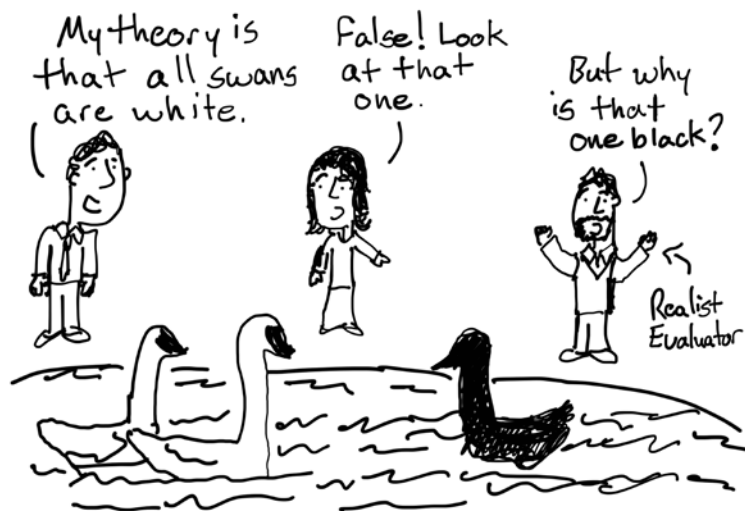
References

Bhaskar R (1979; 3rd edition 2015.) *The Possibility of Naturalism: a philosophical critique of the contemporary human sciences*, Oxon: Routledge.

Lawson T (1997) *Economics and Reality,* London: Routledge.

Lewis-Beck M, Bryman A & Liao T (eds.) (2004) Encyclopedia of Social Science Research Methods, Thousand Oaks: SAGE.

Mayr E (1982) *The Growth of Biological Thought*, Cambridge: Harvard University Press.

Olsen W (2010) Editor's Introduction: Realist Methodology – A Review. *In:* OLSEN, W. (ed.), Los Angeles: Sage.

Sayer A (2000) *Realism and Social Science,* London: Sage.

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