

1.1: The Scientific Method

Empirical research, as outlined in this book, is based on the scientific method. Science is a particular way that some epistemologists believe we can understand the world around us. Science, as a method, relies on both logic, as captured by theory, and empirical observation of the world to determine whether the theory we have developed conforms to what we actually observe. We seek to explain the world with our theories, and we test our theories by deducing and testing hypotheses. When a **working hypothesis** is supported, we have more confidence in our theory. When the **null hypothesis** is supported, it undermines our proposed theory.

Science seeks a particular kind of knowledge and has certain biases. When we are engaging in scientific research we are interested in reaching generalizations. Rather than wanting to explain why President Trump's approval dropped, we are interested in explaining why presidential approval drops across various presidents, or, better yet, how economic conditions affect presidential approval. These generalizations should be logical (which is nothing more than saying they should be grounded in a strong theory) and they should be empirically verified (which, we will see means that we have tested hypotheses deduced from our theory). We also look for generalizations that are causal in nature. Scientists actively seek explanations grounded in causation rather than correlation. Scientific knowledge should be replicable – meaning that other scholars should be able to reach the same conclusions that you do. There should be inter-subjective agreement on scientific findings – meaning that people, with different personal experiences and biases, should still reach the same conclusion.

Scientists also tend to prefer simple explanations to complex ones. They have a bias that says the world is pretty simple and that our theories should reflect that belief. Of course, people are complex, so in the social sciences it can be dangerous to look only for the simplest explanation as most concepts we consider have multiple causes.

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