

## Critical Thinking and Inquiry into Global Warming

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**Charles S. Peirce**, the American scientist and founder of pragmatism in philosophy, a school of thought which included among its eminent practitioners, William James and John Dewey, and which today is experiencing something of a renaissance in Europe and parts of Asia, considered the methodology of a complete inquiry—into most anything of importance—to involve a three step process:

1. The first step he termed *abduction*, or the formation of possible explanations of what one was inquiring into, something which in science is called hypothesis formation and which some have called making an ‘educated guess’.
2. The second step is *deduction*, that is, deducing the implications of each hypothesis being entertained as to what would *necessarily follow* were the hypothesis being considered to be true. Of particular importance would be those implications relevant to devising tests of the hypothesis.
3. The third step is *induction*, that is, the devising of an experiment to test each hypothesis based on the deductions just mentioned followed by an actual experiment (or series of experiments) testing the hypothesis.

The results of the final stage would then be considered (analyzed) by interested parties in consideration of decision making, for example, deciding whether further inquiry needed to be undertaken to clarify the matter.

Inquiry into global warming following this three-tiered *scientific (experimental) methodology* could be undertaken by individuals and groups in various classes at various levels of sophistication and complexity. While they will probably not be able to pursue the process so far as to actually perform experiments (although in some limited cases this might prove feasible), students should be able to abduce various hypotheses and deduce their implications for testing, that is, to perform the first two steps of the inquiry.

*It should be considered, however, that some considerable preliminary research into the issue of global warming would need to be undertaken before fruitful inquiry along the Peircean pragmatic model should begin.*

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Some examples of the first stage of a complete inquiry in relation to global warming:

**STAGE 1: Hypotheses** regarding Global Warming:

- a. There is no global warming.
- b. There is global warming and we’re causing it through (x, y, n activities)

c. There is no humanly produced global warming; rather, it's a natural phenomenon (natural weather cycles like El Nino, etc.)

Question: Can you think of any other hypotheses relating to global warming? How could the above hypotheses be refined, combined, or further developed? What other varieties of hypotheses than the ones just offered are possible (for example, hypotheses as to what we should do if, say, it is determined that there indeed *is* global warming associated with industrialization, use of fossil fuel, etc.)?

Examples of these other types of hypotheses:

m. There is global warming but it's too late to do anything about it.

n. There is global warming and we can do (x, y, n) to positively impact it (note: x, y, n represent different hypotheses).

### **STAGE 2: Deductions of implications of each hypothesis for testing**

What would a researcher expect to find if any of the above hypotheses (or others which might be generated) were to be found to be true? How would one go about researching the implications for testing? How would one find the best (most credible) sources for this research? How much and what kinds of research would be needed preliminary to hypotheses formation? Following the determination of implications for testing?