

Lecture 26  
Mill on Laws and Causes

Patrick Maher

Scientific Thought II  
Spring 2010

# John Stuart Mill



**1806:** Born in London, England.

**1843:** *System of Logic*, 1st ed.

**1865:** This photograph taken.

**1872:** *System of Logic*, 8th ed.

**1873:** Died in Avignon, France.

## Definition

- **Law:** A general regularity.
- **Law of nature:** One of the simplest regularities from which all other regularities can be deduced.

In common language any regularity may be called a law of nature, but this is not strictly correct.

## Symbolic example

Suppose:

A is always accompanied by D.

B is always accompanied by E.

It follows that:

AB is always accompanied by DE.

The first two are laws of nature; the third is a law but not a law of nature.

## Scientific example

*When Kepler expressed the regularity which exists in the observed motions of the heavenly bodies, by the three general propositions called his laws, he, in so doing, pointed out three simple suppositions which, instead of a much greater number, would suffice to construct the whole scheme of the heavenly motions, so far as it was known up to that time. A similar and still greater step was made when these laws, which at first did not seem to be included in any more general truths, were discovered to be cases of the three laws of motion, as obtaining among bodies which mutually tend towards one another with a certain force, and have had a certain instantaneous impulse originally impressed upon them. After this great discovery, Kepler's three propositions, though still called laws, would hardly, by any person accustomed to use language with precision, be termed laws of nature: that phrase would be reserved for the simpler and more general laws into which Newton is said to have resolved them.*

## Reason for restricting “law of nature”

*The expression law of nature has generally been employed with a sort of tacit reference to the original sense of the word law, namely, the expression of the will of a superior. When, therefore, it appeared that any of the uniformities which were observed in nature, would result spontaneously from certain other uniformities, no separate act of creative will being supposed necessary for the production of the derivative uniformities, these have not usually been spoken of as laws of nature.*

*To certain facts, certain facts always do, and, as we believe, will continue to, succeed. The invariable antecedent is termed the cause; the invariable consequent, the effect. (V.2)*

## Definitions

- “A is the cause of B” means that when A happens, B invariably follows.
- “B is the effect of A” means the same thing.

## Popular use of “cause”

Mill's definition implies that if A is the cause of B then, whenever A happens, B happens. That isn't true of many things we ordinarily call causes.

## Example (V.3)

*If a person eats of a particular dish, and dies in consequence, that is, would not have died if he had not eaten of it, people would be apt to say that eating of that dish was the cause of his death. There needs not, however, be any invariable connexion between eating of the dish and death; but there certainly is, among the circumstances which took place, some combination or other on which death is invariably consequent: as, for instance, the act of eating of the dish, combined with a particular bodily constitution, a particular state of present health, and perhaps even a certain state of the atmosphere . . . The real Cause, is the whole of these antecedents; and we have, philosophically speaking, no right to give the name of cause to one of them, exclusively of the others.*

## Objection (V.6)

Day always follows night, so on Mill's definition, night is the cause of day. But night isn't the cause of day; day is caused by the sun rising.

## Mill's answer (V.6)

- For A to be the cause of B it isn't enough that B invariably follows A; this sequence must also be *unconditional*, meaning it does not depend on anything else.
- *We may define, therefore, the cause of a phenomenon, to be the antecedent, or the concurrence of antecedents, on which it is invariably and unconditionally consequent.*
- The sequence of night and day is conditional; night would not be followed by day if the sun did not rise. Therefore, night is not the cause of day.



## Necessity (V.6)

- *This is what writers mean when they say that the notion of cause involves the idea of necessity. If there be any meaning which confessedly belongs to the term necessity, it is unconditionalness. That which is necessary, that which must be, means that which will be, whatever supposition we may make in regard to all other things.*
- *The succession of day and night evidently is not necessary in this sense. It is conditional on the occurrence of other antecedents.*
- *On the other hand, if the sun is above the horizon, his light not extinct, and no opaque body between us and him, we believe firmly that unless a change takes place in the properties of matter, this combination of antecedents will be followed by the consequent, day.*
- *On Mill's account, necessity is a fact about the external world, not about our mind.*

- 1 According to Mill, what is the meaning of “law” and “law of nature”? Give an example that illustrates the difference.
- 2 According to Mill, what does it mean for *A* to be the cause of *B*? Does it follow from Mill’s definition that night is the cause of day? Explain.
- 3 Does our everyday use of the terms “cause” and “effect” agree with Mill’s definitions? Explain and give an example.
- 4 What is the nature of the necessary connection between causes and effects, according to Mill? How does Mill’s account of this differ from Hume’s?



John Stuart Mill.

*A System of Logic.*

London, 8th edition, 1872.

In the [Online Library of Liberty](#).

References are to chapter and section numbers in Book III.