

Necessary and Sufficient Conditions: Tips For Debating Causality

Central to almost every high school policy debate round is the concept of causality: one event is said to cause a second event, either good or bad. Debates are laden with the language of causality: “X is key to Y” is the most popular phrasing of taglines, as in “deficit spending is key to the economy” or “military readiness is key to hegemony”. But what does it mean for one thing to *cause* another? Philosophers have been discussing this very question for millenia and there is no easy answer, but the concept of *necessary* and *sufficient* conditions is one way to make sense out of claims of causality.

What is the difference between a *necessary* condition and a *sufficient* condition? And how can debaters use these concepts to improve their debating?

R. Mark Sirkin, an Associate Professor of Political Science at Wright State University, provides a clear introduction to these concepts in his 2006 book *Statistics for the Social Sciences*:

We should be aware of this distinction between necessary and sufficient. A necessary condition is a condition that must be present in order for some outcome (in this case, rain) to occur. Its presence, however, does not guarantee that the outcome will occur. By comparison, if a sufficient condition exists, the predicted outcome will definitely take place. For example, one could argue that poverty is a cause of communist revolutions. Indeed, the presence of poverty motivated Marx, Lenin, and Mao in their writings and strategies, and there was great poverty in prerevolutionary Russia and China. Yet, many impoverished nations have not undergone Marxist revolutions. Why a revolution in Cuba but not in Haiti? Perhaps poverty is necessary but not sufficient for such a revolution. Then, in addition to poverty, one or more other factors may be needed for a revolution, such as a perception of inequality, unmet rising expectations of an end to poverty, or an organized revolutionary movement. If the presence of poverty alone always led to leftist revolution, then it would be both necessary and sufficient. It is also possible that any of several conditions, when accompanying poverty, can cause revolution; for example, either poverty plus a perception of inequality or poverty plus a charismatic revolutionary leader is sufficient to bring about revolution. When we study hypotheses containing more than two variables, we take the necessary versus sufficient aspect of relationships into particular consideration. (p. 15)

When evaluating claims of causality, we can separate potential causes into three categories:

1. Conditions that are *necessary (but not sufficient)* for the outcome to occur.
2. Conditions that are *sufficient* for the outcome to occur.
3. Conditions that are *necessary and sufficient* for the outcome to occur.

For example, consider the causes of the American Civil War. What conditions were *necessary* for the war to break out, but not by themselves *sufficient*? What conditions, on the other hand, *were* sufficient to cause the war?

Robert Chadwell Williams, the Vail Professor of History and Dean of the Faculty Emeritus at Davidson College, uses this hypothetical to explain the differences between necessary and sufficient conditions in his 2003 book *The Historian's Toolbox: A Student's Guide to the Theory and Craft of History*:

For example, historians continually argue about, debate, and revise our understanding of the causes of the American Civil War. They usually distinguish between causes that were necessary and those that were sufficient to cause a civil war. Necessary causes include sectional differences between North and South, the existence of slavery as an institution, the moral and political critique of slavery, and the dispute over the tariff. Given the existence of these necessary causes, then other causes were in the end sufficient to lead to a civil war—the Kansas-Nebraska Act of 1854, the election of Abraham Lincoln as president in 1860, or the federal decision to resupply Fort Sumter in Charleston Harbor in 1861, and the southern firing on the fort. Without the necessary causes, the sufficient causes would probably not have been sufficient. With them, they produced war and endless suffering—and monumental changes—in both North and South. (See the longer example of causation and the Civil War in the toolbox section of this book.) Historians rarely make their causal models explicit. But they often assume them. [end page 17]

Causation is like an explosion. Necessary causes are like dynamite, plutonium, or hydrogen—that is, the fuel. Sufficient causes are like the fuse, match, implosion lenses, or atomic trigger—that is, the ignition device. Ignition causes explosion—but only because the fuel is present. (p. 17-18)

So how can debaters make use of these concepts in contest rounds?

First, identifying whether a potential cause is *necessary* or *sufficient* can help debaters substantially reduce the probability of their opponents' impacts. If a link (or internal link) is a necessary but not sufficient condition for the impact to occur, debaters should argue that the impact is unlikely regardless of the link because a sufficient condition does not exist.

For example, an affirmative team might argue that a further decline in the global economy will result in outbreaks of violent conflict. In response, the negative can argue that economic decline is a *necessary but not sufficient* cause of global wars. While economic decline might need to occur in order for conflicts to break out, other conditions might *also* be required. So long as the United States maintains a strong nuclear deterrent and there is a robust system of global free trade, for instance, perhaps economic decline *alone* is not sufficient to cause war.

Niall Ferguson, the Laurence A. Tisch Professor of History at Harvard University, advanced an argument along these lines in [a 2006 article in *Foreign Affairs*](#) that many debaters cite to answer the common “economic decline causes war” impact:

Nor can economic crises explain the bloodshed. What may be the most familiar causal chain in modern historiography links the Great Depression to the rise of fascism and the outbreak of World War II. But that simple story leaves too much out. Nazi Germany started the war in Europe only after its economy had recovered. Not all the countries affected by the Great Depression were taken over by fascist regimes, nor did all such regimes start wars of aggression. In fact, no general relationship between economics and conflict is discernible for the century as a whole. Some wars came after periods of growth, others were the causes rather than the consequences of economic catastrophe, and some severe economic crises were not followed by wars.

In this excerpt, Ferguson argues that economic decline is neither a necessary *nor* sufficient cause of war: some wars followed economic declines but others did not, so no causal relationship can be demonstrated.

But what if it *was* true that every war was preceded by economic decline? Would that alone be enough to support a debaters’ claim that “economic decline causes war”? Not if economic decline is only *necessary* but not *sufficient*: while it may be true that wars will not occur in the absence of economic decline, it does not therefore follow that economic decline must necessarily *cause* war. Debaters often miss this crucial distinction: too often “if X, then Y *is possible*” becomes “if X, then Y *for sure*”.

In [a 2009 article in *Foreign Policy*](#), Ferguson advanced a different argument about economic decline that provides another helpful example:

The Bush years have of course revealed the perils of drawing facile parallels between the challenges of the present day and the great catastrophes of the 20th century. Nevertheless, there is reason to fear that the biggest financial crisis since the Great Depression could have comparable consequences for the international system.

*For more than a decade, I pondered the question of why the 20th century was characterized by so much brutal upheaval. I pored over primary and secondary literature. I wrote more than 800 pages on the subject. And ultimately I concluded, in *The War of the World*, that three factors made the location and timing of lethal organized violence more or less predictable in the last century. The first factor was ethnic disintegration: Violence was worst in areas of mounting ethnic tension. The second factor was economic volatility: The greater the magnitude of economic shocks, the more likely conflict was. And the third factor was empires in decline: When structures of imperial rule crumbled, battles for political power were most bloody.*

...

Economic volatility, plus ethnic disintegration, plus an empire in decline: That combination is about the most lethal in geopolitics. We now have all three. The age of upheaval starts now.

Ferguson's argument is that economic volatility, ethnic disintegration, and an empire in decline are all *necessary* conditions of global war. Individually, however, none of these are *sufficient* causes of global conflict. But because the world already includes both ethnic disintegration and an empire in decline, economic volatility *is* both a *necessary* and *sufficient* condition of war.

In this way, debaters can use their understanding of causality to further bolster the credibility of their internal link chains. Suppose that an affirmative team has argued that their plan is necessary to prevent further economic decline and that further economic decline would cause global war. In response, the negative argues that economic decline alone is not sufficient to cause war. Using Ferguson's arguments as evidence, the affirmative can reply by contending that while it is true that economic decline *alone* is not a sufficient cause of war *generally*, it *is* a sufficient cause of war given the presence of the two other *necessary* conditions (ethnic disintegration and an empire in decline).

Mastery of the concept of causality as it is applied to the social sciences can be an extremely helpful skill in a debater's intellectual arsenal. By understanding the difference between *necessary* and *sufficient* conditions, a smart debater can both reduce the risk of their opponents' scenarios and bolster the credibility of their own impacts.

This entry was posted in Evidence/Research, Skill Development on May 19, 2010 [<https://the3nr.com/2010/05/19/necessary-and-sufficient-conditions-tips-for-debating-causality/>] by Bill Batterman.

8 thoughts on "Necessary and Sufficient Conditions: Tips For Debating Causality"



Tara Tate

May 19, 2010 at 5:23 pm

This is an awesome write-up on an issue I don't think coaches often engage their students on. I am definitely printing this out and using it in my Debate I class next year. If anyone can think of an activity that can correspond with this, let me know! I, obviously, have thought about an activity to have the students generate examples of sufficient conditions and causalities of necessary conditions. 😊



dondon

would you please share the activity that you used ? i need to use it for an economics class that i tutor



Scott Phillips

Post author

May 19, 2010 at 5:35 pm

Bill,

I think your "3 categories" are somewhat misleading, and this is a problem I have always had with the concept of necessary but not sufficient. Some things are neither. For example, lets say US hegemony is measured on a 1-10 scale, and is currently at a 2. In order to avoid Khalilzad 95, hegemony must be at a 6. If eliminating Gitmo moves hegemony up 3 points, many debaters would say that it is "necessary but not sufficient", which is only 1/2 true- it is insufficient. The fact that it has moved us up 3 points does not prove it is necessary. An independent action that boosted hegemony 8 points would be sufficient, but that would still not prove it was necessary. Sufficiency is wholly independent of necessity. "Necessary" as is used in 99% of debate examples, is a total misnomer.

To take your economic decline example, "economic volatility, ethnic disintegration, and an empire in decline are all necessary conditions of global war" is a false statement. These are all contributory towards global conflict, none of them are "necessary". The language of "necessity" implies some sort of root cause logic which we, along with Jabri, know to be false. Furthermore, I think it is overly reductive to reduce or claim that evidence such as Ferguson establishes a statistical proof of "A + B + C = conflict".



Bill Batterman

Post author

May 19, 2010 at 5:42 pm

[@Scott Phillips](#)

Agreed—I bracketed off the issue of insufficient/unnecessary conditions because I think that's an argument debaters do tend to make. When someone reads an economy impact, common responses include "economic decline doesn't equal war" and "interdependence prevents war". Those arguments contest the causal link between economic decline and war—they are obviously good arguments to make. The argument that I **don't** think debaters make is that a given link/internal link is necessary but not sufficient (or conversely, that the presence of other necessary conditions makes the link/internal link sufficient).

There is a whole host of social scientific and philosophical literature that contests this framing of causation, but I just wanted to nudge debaters in the direction of more sophisticated assessments of causality.



Paul Johnson

May 19, 2010 at 6:36 pm

It's great to see that hypothesis testing is making a comeback, but not under that name!



Talon Powers

May 20, 2010 at 8:40 am

I think Parfit, Hume, etc. might have a slight disagreement with you on the unconscious acceptance of causality's existence. Their criticisms of causality more holistically can be difficult to answer, and I'm not sure most debaters are prepared to defend causality as a philosophical principle. Bracketing off that foundational philosophical argument, I do think the necessary/sufficient distinction is decent, even though I do agree with Scott that almost no one makes an explicit argument that a given condition is both necessary and sufficient for a given outcome to occur.



gulakov

May 20, 2010 at 7:51 pm

Relevant: <http://www.npr.org/blogs/health/2010/05/19/126972...>

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