PHILOSOPHY 104

9.3 NOTES
POSITIVE CONCLUSIONS

- Neither Necessary nor sufficient conditions are necessarily causes, however, they are likely candidates to be part or all of a causal explanation.
- Some things, however, can be causes without being either necessary or sufficient.
- For Example...
CAUSAL?

- Does cigarette smoking cause lung cancer?
  - Is cigarette smoking a necessary condition for lung cancer?
CAUSAL?

• Does cigarette smoking cause lung cancer?
  • Is cigarette smoking a necessary condition for lung cancer?
  • That is, does everyone who gets lung cancer smoke?
  • Is it possible to get lung cancer without smoking?
CAUSAL?

• Does cigarette smoking cause lung cancer?
  • Is cigarette smoking a necessary condition for lung cancer?
  • That is, does everyone who gets lung cancer smoke? NO
  • Is it possible to get lung cancer without smoking? YES
Does cigarette smoking cause lung cancer?
  - Is cigarette smoking a necessary condition for lung cancer? NO
  - That is, does everyone who gets lung cancer smoke? NO
  - Is it possible to get lung cancer without smoking? YES
CAUSAL?

• Does cigarette smoking cause lung cancer?
  • Is cigarette smoking a sufficient condition for lung cancer?
  • Does everyone who smokes get lung cancer?
CAUSAL?

• Does cigarette smoking cause lung cancer?
  • Is cigarette smoking a sufficient condition for lung cancer? NO
  • Does everyone who smokes get lung cancer? NO
• If smoking causes lung cancer, but is neither necessary nor sufficient, what is going on?
Concomitant Variation means that two (or more) factors vary along with one another either in a positive way (When one increases, so does the other; when one decreases, so does the other) or in a negative way (When one increases, the other decreases; when one decreases, the other increases).

We determine if a suspected cause and its suspected effect vary in proportion with one another. Another way of stating this is that we check for correlation between the two factors.
CORRELATION

• Remember, correlation IS NOT causation, it merely indicates evidence of a possible causal relationship.
• Once we determine the explanation for the correlation, that explanation is the causal factor.
• Once one thing is correlated with another, there are four logical possibilities:
  • A is the cause of B
  • B is the cause of A
  • Some third things causes both
  • The correlation is simply coincidence
A SAMPLE CORRELLATION (COURTESY GREGG EASTERBROOK):

• “Fact 1: Enthusiasm for football has never been higher -- not just for the NFL, but with young boys and teens. Participation in prep football has increased 21 percent in the past 20 years, by nearly 200,000 boys per year, according to the National Federation of State High School Associations. Many states have begun to allow what is essentially year-round football practice. Youth-league tackle football is expanding. American boys are devoting more time and effort to football than ever before.

• Fact 2: In higher education, student populations are increasingly female. Twenty years ago, there were more men in college than women. Now there are more women, and the ratio of college women to men is rising.”
“The Atlantic Monthly essayist Hanna Rosin has written, "Women dominate today's colleges and professional schools ... for every two men who will receive a B.A. this year, three women will." Richard Whitmire's 2009 book "Why Boys Fail" supposes the advantage for women would be even greater if many colleges and universities did not quietly use lower admissions standards for males, fearing a tipping point at which the school would be perceived as a women's college even if it was not.”
PROPOSED EXPLANATIONS FOR THE CORRELATION 1:

- Having ever-more boys being bashed on the head in football, while more play full-pads tackle at young ages, may be causing brain trauma that makes boys as a group somewhat less likely to succeed as students. In the highly competitive race for college admissions, even a small overall medical disadvantage for boys could matter.
“Is brain harm to boys from football a factor? This new article in the technical journal Neurosurgery finds that suffering two or more concussions during high school days is associated with neurological problems later in life.”
More important, the increasing amount of time high school boys devote to football may be preventing them from having the GPA and extracurriculars that will earn them regular admission to college when recruiters don't come calling.
“Rising interest in athletics cannot in and of itself be the explanation, because in the last generation, girls' and women's participation in athletics has skyrocketed. But there is one sport girls do not play -- football. The gender that plays football is falling behind in college. The gender that does not play football is excelling.”
Traditionally, high school football players struggled in the classroom during the season, then made up ground in the spring: ideally also doing band, theater, the school newspaper or some other extracurricular in the spring. Now, with high school football becoming a year-round activity, the boy who wants to be on the team may have trouble with grades throughout his high school years, while giving up on anything but sports. College admission officers consider extracurriculars quite important. Many boys who spend most of their time and energy during high school on year-round football, then do not get recruited, send to colleges applications listing a low GPA and no extracurriculars. They're up against girls listing a higher GPA and extracurriculars.
FOR FURTHER CONSIDERATION:

• What kinds of further data would strengthen or weaken football as a causal factor in the correlation between its increasing popularity and decreasing male academic performance?