Soc 63993, Homework #4:
The Logic of Causal Order

Richard Williams, University of Notre Dame, https://www3.nd.edu/~rwilliam/
Last revised February 15, 2015

1. The chair of the Sociology Department wants to recruit the best faculty possible. But, at the same time, he can't afford to waste a lot of time making offers to people who are unlikely to accept. He suspects that the likelihood that a job offer will be accepted is somehow dependent on the IQ (intelligence) of the candidate, and the number of job offers the person has. For each of the following models, indicate which person is more likely to accept a job offer from N.D. Your options are: Smith is more likely to accept; Jones is more likely to accept; Smith and Jones are equally likely to accept; or DK, don't know, not enough information. (Note: All three models agree that the more intelligent the person is, the more job offers he or she will tend to have.)

	Smith	Jones	Fig 1	Fig 2	Fig 3
1.	High IQ Many offers	Low IQ Many offers	a.	b.	c.
2.	Many offers	Few offers	d.	e.	f.
3.	High IQ Few offers	High IQ Many offers	g.	h.	i.

Figure 1.

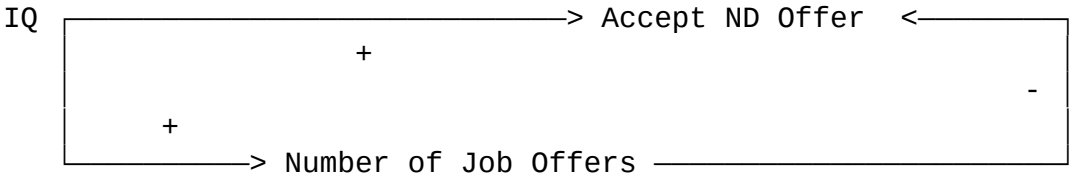


Figure 2.

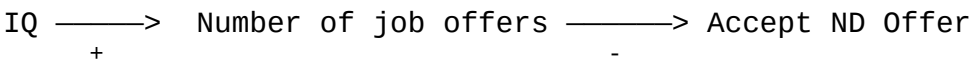
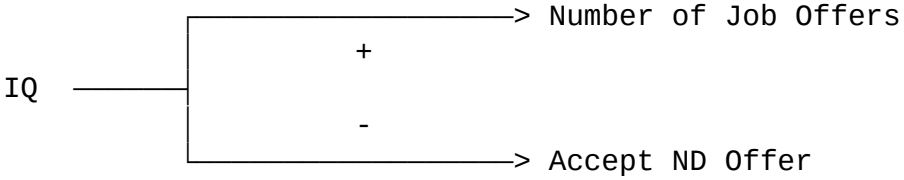


Figure 3.



2. Consider the variables age, education, and income. Assume that income and education cannot affect age, and that income cannot affect education.

a. Draw a model in which education and income are correlated, yet neither variable is a cause of the other.

b. Draw a model in which older individuals tend to have higher incomes, yet age has no direct effect on income.

c. Draw a model in which education affects the incomes of those who are at least 30 years old, but has no effect on those who are younger.

3. A university offers a number of services to students, such as psychological counseling and career counseling. Much to its surprise, a recent study has shown that students who participate in these programs actually do less well than students who do not participate. Participants score lower on tests of psychological well being, are less clear on their career plans, and get worse jobs upon graduation. Some critics are therefore arguing the programs do more harm than good and should be abolished, while others continue to maintain that the programs are beneficial. The university has hired you, a professionally trained social scientist, to give it insight on why these relationships exist.

Drawing on your knowledge of the logic of causal order, present different models that could account for the observed relationships. Indicate what implications the different models have for policies that should be adopted. To be fair, you will want to present one or more models that suggest that the counseling programs are good, one or more models which imply the programs are not good, and one or two models which suggest that the programs are not good but the problems are correctable (i.e. you don't have to abolish the counseling programs to solve the problem). (HINT: This problem shares a number of similarities with our classroom discussion of why Catholic school students do better than public school students.)

When presenting your answer, keep in mind that the university officials do not know very much about the logic of causal order, so you will have to make things very clear for them.

4. A researcher is interested in the relationship between a woman's education, her marital status, and her employment. For each of the following models, indicate which woman would be more likely to be employed. Your options are: Sue is more likely to be employed; Jane is more likely to be employed; Sue and Jane are equally likely to be employed; or DK, don't know, not enough information. (Note: EDUC is coded 1 = educated, 0 = uneducated; MARR is coded 1 = married, 0 = not married; EMPLOYMENT is coded 1 = employed outside the home, 0 = not employed outside the home. All three models agree that educated women are more likely to be married.)

	Sue	Jane	Fig 1	Fig 2	Fig 3
1.	Married	Not Married	a.	b.	c.
2.	Educated Married	Not educated Married	d.	e.	f.
3.	Educated Not Married	Not educated Married	g.	h.	i.

Figure 1.

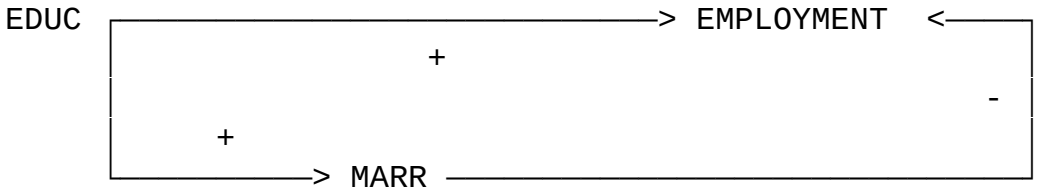


Figure 2.

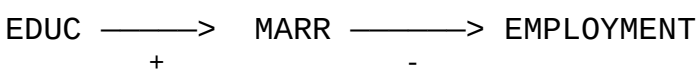
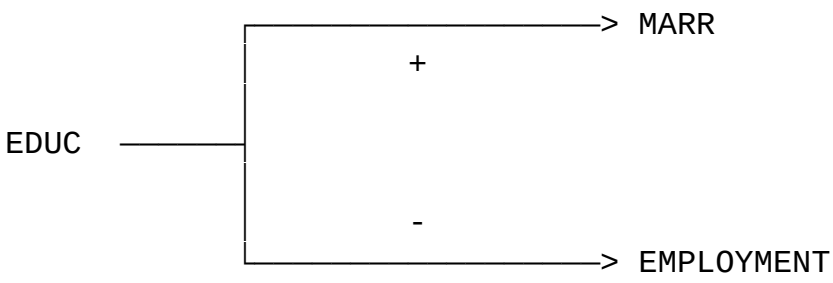



Figure 3.