

Reader Report

Reading: Shalizi(2019) chapter 22/23

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As a Shalizi fangirl, I am a bit torn with his analysis on Instrumental variable. On the one hand, he gave a concise, though often critical, analysis of what instrumental variable is, how it relates to front door, back door criteria, and when we shouldn't use it. As always, I really enjoyed the style of his writing. On the other hand, I find his general stance on this topic to be overly critical and some of his arguments are quite confusing.

I am not sure what he is getting at with the Davis' quote. If I understood correctly, Davis warned researcher and readers that "the data may not warn you when you come up with misleading explanation of the data" It seems that Shalizi is a proponent of being skeptical about the assumptions we make? Matt discussed this in his post it's because something like "common causes", although I am not sure what's the connection there...

Shalizi also argued that testing validity of instrument by looking at influence flow $I \perp\!\!\!\perp Y|X$ essentially tell us nothing. I think I learned about this in Econometric course. It's a shame that we cannot use it. I wonder if the validity test would still serve a proxy of some kind?

The discussion of weak and strong IV is interesting. Shalizi suggests that if the IV is weak and noisy, then it would render more error when it is used in the denominator. Perhaps this could be used as an indicator of whether we should use IV? Or is it something that's not known a priori?