

Szasz and the Statistics of Rare Events

Many years ago, Thomas Szasz largely convinced me that mental illness is radically different from ordinary physical illness. In economic terms: People with physical illness have unfavorable *constraints*; people with mental illness have socially disapproved *preferences*. Physical illness is about what you're *able* to do; mental illness is about what you *want* to do.

Yes, it's generally bad manners to loudly call attention to this distinction. Even though "I can't come to your party" usually means, "I would rather do something else with my time," it's impolite to say so. The same goes for "I can't stop drinking" or "I just can't manage to show up for work on time."

But what about really weird cases? Perhaps 95% of all alcoholics simply value their favorite beverage more than they value their families. But every now and then, you read a compelling first-hand account of someone who persuasively insists, "I just can't help myself." What about multiple personalities? Severe delusions? Can Szasz explain those?

Maybe not. But Alex Tabarrok's post on the statistics of rare events got me thinking.

The CDC asked 12,870 individuals about defensive gun use over the three samples. That's a relatively large sample but note that this means that just 117 people reported a defensive gun use, i.e. ~1%. In comparison, 12,656 people (98.33%) reported no use, 11 people (0.09%) said they didn't know and 86 people (0.67%) refused to answer. People answering surveys can be mistaken and some lie and the reasons go both ways...

The deep problem, however, is not miscodings per se but that miscodings of rare events are likely to be asymmetric. Since defensive gun use is relatively uncommon under any reasonable scenario there are many more opportunities to miscode in a way that inflates defensive gun use than there are ways to miscode in a way that deflates defensive gun use.

Imagine, for example, that the true rate of defensive gun use is not 1% but .1%. At the same time, imagine that 1% of all people are liars.

Thus, in a survey of 10,000 people, there will be 100 liars... Adding it up, the survey will find a defensive gun use rate of approximately $(100+10)/10000=1.1\%$, i.e. more than ten times higher than the actual rate of .1%!

Notice that Alex's point generalizes readily from defensive gun use to extreme mental illness. Suppose, for example, that you study the prevalence of multiple personalities (now called Dissociative Identity Disorder). In a group of 10,000 people, ten insist they have it. Taken individually, each of the ten seems credible. But if .1% of respondents would energetically lie, the discovery of ten believable stories is perfectly consistent with the complete non-existence of the disorder.

Why oh why though would anyone tell such a lie? Perhaps to be the center of attention – one of the most ubiquitous of all human motives. As Szasz puts it:

[W]hen a grisly, unsolved crime is reported by the press and the police look for the person who did it, innocent people often come forward and confess to the crime. Such a confession is never accepted on its face value as true; on the contrary, it is treated with the utmost skepticism. On the other hand, when a person lodges a psychiatric complaint against himself, it is not investigated at all.

Do the statistics of rare events prove Szasz right? No, but they do tip the evidentiary scales further in his favor. If X almost never happens, basic numeracy urges us to question whether the few purported cases of X are genuine – especially if many of us feel a temptation to claim X regardless of the truth.

Isn't it desperate, though, to use Tabarrok's insights to treat admittedly rare events as absolutely non-existent? Perhaps. But then again, isn't that just what the great David Hume did in his "Of Miracles"?

When anyone tells me, that he saw a dead man restored to life, I immediately consider with myself, whether it be more probable, that this person should either deceive or be deceived, or that the fact, which he relates, should really have happened. I weigh the one miracle against the other; and according to the superiority, which I

discover, I pronounce my decision, and always reject the greater miracle.

To my mind, a person who genuinely “can’t stop drinking” is almost as miraculous as a dead man restored to life. If you dismiss the latter, you should at least be open to dismissing the former as well.