

### **Souvenir S: Preregistration and Error Probabilities**

“One of the best-publicized approaches to boosting reproducibility is preregistration ... to prevent cherry picking statistically significant results” (Baker 2016, p. 454). It shouldn’t be described as too onerous to carry out. Selection effects alter the outcomes in the sample space, showing up in altered error probabilities. If the sample space (and so error probabilities) is deemed irrelevant post-data, the direct rationale for preregistration goes missing. Worse, in the interest of promoting a methodology that downplays error probabilities, researchers who most deserve lambasting are thrown a handy line of defense. Granted it is often presupposed that error probabilities are relevant only for long-run performance goals. I’ve been disabusing you of that notion. Perhaps some of the “never error probabilities” tribe will shift their stance now: ‘But Mayo, using error probabilities for severity, differs from the official line, which is all about performance.’ One didn’t feel too guilty denying a concern with error probabilities before. If viewing statistical inference as severe tests yields such a concession, I will consider my project a success. Actually, my immediate goal is less ambitious: to show that looking through the severity tunnel lets you unearth the crux of major statistical battles. In the meantime, no fair critic of error statistics should proclaim error control is all about hidden intentions that a researcher can’t be held responsible for. They should be.