

The Double Life of Evidence: From the Streets to the Labs

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Ioannis Votsis

University of Duesseldorf

Abstract

An integral part of the schooling of scientists, especially experimental ones, is the cultivation of the significance and role of scientific evidence. Naturally this schooling is not conducted *in vacuo*. Budding scientists already have experiences of, and intuitions about, the use of evidence in everyday life. In this talk I take a sustained look at the relations between common-sense notions of evidence and scientific ones. Among other things, I argue that scientific notions of evidence and associated practices are in many ways conservative extensions of what is best about our common-sense notions and practices. This contradicts a rather widely held but often tacit view that science and its notions are largely insular.

In the first half of the last century philosophers tended to identify evidence with notions of a somewhat dubious ontological stature like sense-data. Though such attempts were related to common-sense and scientific conceptions of evidence they also departed from them in significant ways. On first glance, evidence in everyday life seems to take the form of an object or a state of affairs that one is able to procure in plain view. For example, prior to dinner a mother may ask her son to present his hands as evidence for their cleanliness. Scientific notions of evidence increasingly take on a more complex form. Astronomical evidence about near-earth objects, for instance, are data sets complete with specifications of the detection instruments, calibration techniques, measurement thresholds and data reduction tools. Whilst research into scientific conceptions of evidence by philosophers (e.g. Achinstein 2001) and social scientists (e.g. Morgan 2004) is burgeoning, the same cannot be said for common-sense conceptions. A fortiori comparative studies of the relations between common-sense notions of evidence and scientific ones remain a largely uncharted territory. It is precisely this disparity that the current talk aims to redress.

This talk conjectures that scientific notions of evidence and their associated practices are conservative extensions of the best common-sense has to offer. Here is a foretaste of what is meant. Take the scientific notion of independent confirmation. Its purpose is to guard against bias by seeking additional evidence whose determination does not depend on the same methods the original evidence was obtained. An analogous notion and practice exists in everyday life. Cross-checking a claim involves the search for additional evidence with the aforementioned characteristics. Suspicious of a stranger who claims that your lottery ticket is not a winning one you will probably seek additional evidence from a person unrelated to the first. What might perhaps be disanalogous between the two notions is that the urgency to cross-check (rather than the urgency to provide independent confirmation) seems more easily swayed by the value one places on the outcome. That this and other potential disanalogies are insufficient to defeat the conservative extension hypothesis will be argued for in detail.

References:

Achinstein, P. (2001) *The Book of Evidence*, Oxford: Oxford University Press.

Morgan, M. (2004) 'Simulation: The birth of a Technology to Create "Evidence" in Economics', *Revue d'Histoire des Sciences*, vol. 57(2): 341-77.