

Paper #2

The Biased Interpreter

Ted Kaptchuk, in his essay “Effect of interpretive bias on research evidence” argues that interpretive bias in medical studies can mess with sound scientific judgment. He observes that scientific data do not speak for themselves, but must be submitted to a process of analysis and interpretation which introduces an element of subjectivity, and so the chance of interpretive bias into the conclusions of any study. Kaptchuk, an assistant professor at Harvard Medical School, introduces six discrete categories of interpretive bias liable to distort scientific findings, arguing that, though awareness of these types of biases may speed up the discovery of such distortions, they may be recognized “only [in] hindsight.”

The first kind of interpretive bias, “confirmation bias,” occurs when experimental results concur with the experimenters own prior beliefs, resulting in less rigorous assessment of the quality of the findings. These sorts of interpretive biases, Kaptchuk tells us, may be quite common. The second, “rescue bias,” in which an experimenter discounts unexpected results by attributing them to problems in the experimental design or execution, may be less common, but can result in the experimental results being the subject of unresolved disputes rather than advances in knowledge and practice. “Auxiliary hypothesis bias,” a kind of rescue bias, introduces an adjustment in the original hypothesis in order to explain unexpected results. This bias privileges “cherished theory” over concrete experimental results.

Kaptchuk’s fourth type of interpretive bias is “mechanism bias,” in which results that concur with underlying scientific principles receive less scrutiny, may well coincide

with, and even aid, other biases described in this essay. “Time will tell bias” is one in which cautious skepticism becomes stalling, motivated by one’s intellectual or personal predispositions. Kaptchuk quotes Max Plank on this bias: “a new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it.” Finally, “orientation bias” occurs when the experimenter’s biases affect the collection of the data during the experiment.

Kattchuk’s statement that we can’t anticipate interpretive bias, but can only uncover it after the fact, seems like a biased conclusion itself. In placing interpretive error outside of the interpreter him- or herself, he makes it seem that these errors are imposed from the outside. But many of these errors could be anticipated with proper experimental design, careful peer review, and knowledge of these potential pitfalls.

Kaptchuk presents his ideas about interpretive error by observing, “Interpretation can produce sound judgments or systematic error.” By using “interpretation” as the subject of that sentence, he detaches the act of interpretation from the interpreter. Interpretive error is treated as a mysterious force that sometimes visits the scientific research, but not the researcher. The researcher is portrayed as a somewhat limp object in the process of drawing scientific conclusions, who can only become useful in searching after the fact for any bias his or her research has acquired.

Kaptchuk does indirectly attach researcher’s choice to some of his descriptions of kinds of interpretive bias. For example, he describes auxiliary hypothesis bias as one in which contradictory evidence is explained by “ad hoc modifications [to the original hypothesis] to imply that an unexpected finding would have been otherwise had the

experimental conditions been different” . While he again uses the passive to avoid telling us directly who is doing the modifying in order to explain unexpected results, there is no way to get around the fact the these modifications simply can't be imposed from the outside. This hand-wavy maneuver screws up the studies' conclusions, and sometimes even results in really bad things happening, like in the case of human-subject clinical trials. Kaptchuk seems to go out of his way to shield the actor from the outcomes of the action. Instead of making clear that the researchers have made a mistake in these cases, he claims that mistakes were made.

In his conclusion, Kaptchuk says that “Ultimately, brute data are coercive.” But here, as well, we see the use of “data” as the subject of the sentence, and not the interpreter of the data. The implication that, contrary to his initial claim, the data do speak for themselves, perverts his own argument. If the data ultimately win out over the interpreter, the interpreter is once again let off the hook, and any bias that creeps into the study is just bad luck.

Professor Kaptchuk's taxonomy of interpretive biases is a potentially useful caution to experimental scientists. He names six kinds of interpretive biases, all of which might skew experimental results. However, by saying that these biases can only be recognized and corrected after the fact, he emasculates his stand.