

PHIL 5983: Rationality Seminar

University of Arkansas, Fall 2004

Topic: Simple Heuristics II: Memory, Estimation, and Categorization

Readings: *Simple Heuristics* (Chapters 9-11)

*I am providing notes for Chapter 9 only. D.J. will cover Chapters 10 and 11 in his presentation.

“Hindsight Bias: A Price Worth Paying for Fast and Frugal Memory”

*This chapter speculates, and then tests, that memory works by reconstruction.

“How can memory work given its limitations? Our answer is, by *reconstruction*: When retrieval fails, inferential heuristics are employed.” (191)

--Hindsight bias is a natural result of this process. But, H&H argue that the hindsight bias is not “just another error of human information processing.” (191) Rather, they claim it is a by-product of two adaptations: updating knowledge in accord with new information, and using fast and frugal heuristics on this new knowledge.

--Q: So? How does this show that the hindsight bias is not just another error of human information processing? Why is the fact that it is a by-product of such adaptations, if in fact it is, relevant to the worth of the bias itself?

Hindsight bias: “This tendency to believe falsely—after the fact—that one would have predicted the outcome of an event is known as *hindsight bias*.” (193)

--The 2 experiments cited on p. 193 confirm the existence of this bias.

--This bias can be damaging because we do not appropriately modify our prediction strategies on the basis of past mistakes. Or, on the contrary, the bias might be valuable because it helps promote a positive self-image. H&H offer a third option:

“According to this view, hindsight bias is a by-product of an adaptive process rather than being an adaptation itself.” (194)

*Important contrast on p. 196: recall vs. recalculation/reconstruction

--H&H’s theory:

“Updating knowledge is the key assumption underlying the model of hindsight bias proposed below. It applies to situations where the original judgment was a knowledge-based inference. If the attempt to remember this original judgment directly fails, it will be reconstructed by repeating the same process that led to this judgment. However, knowledge about the outcome of an event, or feedback on whether an inference was correct, leads to an updating of relevant knowledge. As a consequence, the

reconstruction based on the updated knowledge can be systematically different from the construction based on the original knowledge. This difference is what is known as hindsight bias. Thus, in our view, the so-called bias is a by-product of an adaptive process, namely knowledge updating.” (196)

--Again, if true, how would this show that this is not a bias??

--RAFT (Reconstruction After Feedback with Take The Best): The correct outcome is given to the subject, and then the subject reconstructs her original prediction and confidence in that choice. (197)

--Their model incorporates cues and heuristics (Take the Best), as discussed in Chapter 4. See figures 9-1 and 9-2 on pp. 199-200 for an application of the RAFT model to a particular memory problem. Hindsight bias is a result of reconstructing the decision-making procedure using different cue values (as a result of information of the correct outcome). The cue value can change because we can reverse the usual direction of indication—we can use the criterion value to infer the cue value. (201-202) This can affect both our estimation of our prior confidence and choice. This method also should explain *reverse* hindsight bias.

*Their experimental results reveal modest hindsight biases. The bias is most likely when a cue did not originally discriminate between two items (but is judged to after feedback). (206)

*Is there something inappropriate in their procedure here:

“Can hindsight bias and reversed hindsight bias be predicted from recalled object relations (Prediction 2)? To test this prediction, we first excluded cases where original and recalled response are identical, because they can be attributed to accurate memory (and are thus not subject to reconstruction).” (207)

*Note the concluding paragraph, and again ask yourself why the authors earlier referred to the hindsight bias as a “so-called bias”.