The impact of discredited evidence on inference

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INTRODUCTION

How do people revise their beliefs once an item of evidence is discredited? Do they simply return to the belief states they had prior to acquiring that false information, or does the change propagate more widely through their belief network? For example, when the testimony of a key witness is shown to be fabricated, how does this affect jurors’ beliefs about the testimony of other witnesses, or even other forensic evidence?

Previous research in jury decision-making has looked at whether people can exclude inadmissible evidence (Kassin & Sommers, 1997), but has not addressed the more general question of how information that discredits one item of evidence affects other items of evidence. This is especially important given that there is no unambiguous normative answer - whether or not one should generalize the discredit of one item of evidence to other items depends on their causal relations. If both pieces of evidence come from the same source (e.g., two statements from the same witness), then it seems appropriate that the discredit of one should lead to the discredit of the other. However, if they come from unrelated sources (e.g., a witness statement and a footprint match) then the discredit of one should not affect the status of the other. How do people adjust their beliefs in these situations, and what are the cognitive mechanisms that they use?

In Experiment 1 the discrediting information was over-generalized regardless of the degree of relatedness of the evidence. For example, when participants discovered that one witness was lying, they discounted the testimony of another witness, but they also discounted an unrelated piece of forensic evidence.

Experiment 2

LATE ORDER
There was no difference between Same and Different conditions: in both cases mean judgments at stage 4 were lower than at stage 2 (Same, t(41) = 3.41, p<.01; Different, t(41) = 2.89, p<.01), showing that participants over-generalized the discredit of one item to another, irrespective of relatedness. This replicated results from Experiment 1.

EARLY ORDER
There was a marked difference between Same and Different conditions. In the Same condition, mean judgments at stage 4 were lower than at stage 2, t(41) = 4.11, p<.001, whereas in the Different condition there was no difference, t(41) = 1.02, ns. This shows that participants in the early condition were sensitive to the relatedness between items of evidence, and generalized appropriately. For example, when participants discovered that one witness was lying, they discounted further testimony from that same witness, but did not discount an unrelated piece of forensic evidence.

In Experiment 2 the order in which evidence was presented affected the impact of the discredited evidence, and thus the final judgments of guilt. In the late condition discrediting information was over-generalized to unrelated items, as in Experiment 1. In contrast, in the early condition discrediting information was only generalized to related items.

METHOD

Mock jurors were given simplified criminal cases, and asked to judge the probability that a suspect was guilty on the basis of several items of evidence. In Experiment 1 two items of incriminating evidence were presented sequentially, followed by information that discredited the second item of evidence. The degree of relatedness between the items of evidence was manipulated: evidence either came from the same source (e.g., two statements from same neighbour), similar sources (e.g., two statements from different neighbours) or different sources (e.g., one statement and one blood test). Experiment 2 manipulated the ordering of the evidence: in the late condition the discrediting information was presented last (as in Experiment 1), in the early condition it was presented after the first item of evidence. We also removed the ‘similar’ condition, so there were just two levels of relatedness.

In each problem participants made four judgments of probability of guilt:
1. On the basis of the background story
2. Given evidence 1 (e.g., neighbour 1 says suspect often loiters in area)
3. Given evidence 2 (e.g., neighbour 2 says suspect was outside house)
4. Given discrediting evidence 2 (e.g., neighbour 2 is lying because he dislikes suspect)

In Experiment 2 the order of 3 and 4 was switched, and the discredits was of evidence 1

RESULTS

In all three conditions the discrediting of evidence 2 affected the evaluation of evidence 1. Mean probability judgments at stage 4 were significantly lower than at stage 2:

Same: t(23) = 3.74, p<.05
Similar: t(23) = 2.71, p<.05
Different: t(23) = 3.13, p<.05

REFERENCES


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