

### Evidence for the Existence of a Strategy-Selection Stage

I have conducted a number of experiments that are consistent with the idea that there is a preliminary mechanism that allows us to select a particular strategy for question answering (Reder, 1987). Some of these experiments supported the proposal that people can assess their memories before actually doing a careful search of memory. People can estimate that they can answer a question such as, "Who invented the telephone?" significantly faster than they can actually answer it. This faster estimation time is achieved without sacrificing accuracy. That is, those subjects who estimated that they could answer a question typically could answer the question, and they answered as many correctly as those in the answer condition. If accuracy is defined as the ratio of percentage correctly answered to percentage attempted, the estimate group was more accurate (percentage attempted is defined as one minus the probability of saying "can't answer").

Another experiment lent support to the mechanisms hypothesized to influence "feeling of knowing." This experiment primed some of the terms in some of the questions that subjects would later have to estimate or answer. It was expected that having rated the word-frequency of a couple of the terms in a question would give the person an illusory "feeling of knowing." One-third of the questions were primed in this manner. Subjects who were asked to estimate whether or not they thought they could answer a question overestimated their ability to answer difficult questions that had been primed. For subjects who were asked only to give answers, the priming manipulation did not influence the percentage of questions attempted. However, it did affect how long subjects took to decide that they could *not* answer a difficult question: Primed, difficult questions gave an illusory "feeling of knowing," which caused subjects to search much longer before realizing that they did not have the answer. Estimation times, on the other hand, were not affected by priming. If anything, estimation times were faster for those questions that were primed.

Other experiments in Reder (1987) showed that strategy selection was affected by variables extrinsic to the question. One study varied the proportion of the probes to be judged for plausibility that were actually presented as part of the story subjects read. When 80% of the test items had been presented as part of the story, subjects were expected to adopt the direct retrieval strategy. When only 20% were presented as part of the story, subjects were expected to adopt the plausibility strategy. Given that both groups were asked to make plausibility judgments, any difference in response time patterns would be due to sensitivity to the ratio of presented to not-presented statements.

The results quite clearly indicated that subjects were sensitive to the ratio of presented to not-presented test probes. For those subjects who received predominantly presented probes and were therefore biased to use the direct retrieval strategy, there was a large difference in verification RT between presented and

not-presented statements, such that the not-presented were much slower. For those who received predominantly not-presented probes and were therefore biased to use the plausibility strategy, there was essentially no difference in verification RT between the presented and not-presented probes. Conversely, there was a large plausibility effect (difference in RT between highly and moderately plausible statements) for subjects biased to use the plausibility strategy, and only a very small effect for subjects biased to use direct retrieval. For the latter group, all of the plausibility effect came from those statements that could not be verified using direct retrieval.

This manipulation of varying the proportion of presented to not-presented statements was done only for the first 6 of the 10 stories in the experiment. Starting with the seventh story, the ratio of presented to not-presented reverted to the standard 50:50. For these last 4 stories, the results showed a return toward a moderate use of each strategy, that is, the bias functions converged. This is also evidence that subjects could adjust their strategies fairly rapidly. It should be pointed out that the bias manipulation and the shift back to neutral was never explicitly mentioned to the subjects.

Another experiment (Reder, 1987) was designed to see whether people can switch strategies at a moment's notice, depending on the advice they receive prior to the question. Again all subjects were asked to make plausibility judgments. However, before each question, they were told whether they would be better off searching for a specific fact in memory or better off trying to actually compute the plausibility of the statement. They were also warned that although the advice would usually be appropriate, it would not always be. When the advice was wrong, they were to still try to answer the question correctly (i.e., to use the other strategy). The advice was correct 80% of the time.

The results clearly indicated that subjects find it quite easy to follow advice and switch strategies from trial to trial. There were clear differences in RT pattern depending on which strategy had been recommended. For example, there was a much bigger RT difference between the moderately and highly plausible presented statements if the advice had been to compute the plausibility of the answer than if the advice had been to search for the fact in memory. Further, when the advised strategy would not produce the correct response, response times were much slower because subjects had to go on and adopt the second strategy as well. Subjects were especially slow for not-presented statements where the (wrong) advice had been to try direct retrieval.<sup>5</sup>

In summary, these experiments lend support to the theory of strategy selection for question answering. We can assess our feeling of knowing, which is sensitive to the recency of exposure to words and the extent of intersection in memory among the concepts referred to in the probe. Further, we integrate our initial

<sup>5</sup>It is worth noting that data such as these also argue against a simple parallel race model between the two competing strategies, confirming the view of a strategy-selection process.