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When the brain decides

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Every day we have to make decisions that involve evaluating or choosing between options, often without much information to go on. So how we do it? How do we prevent analysis paralysis?

Psychological theory suggests that we often rely on the recognition heuristic, choosing the option that we recognize over the one we don't. So, as psychological scientist Christian Frings points out, if we have to predict whether Roger Federer or Michael Berrer will win a tennis match, we'll probably stick with Federer because he's a well-known name. We seem to have an innate preference for the familiar and research suggests that the recognition heuristic usually works in our favor, at least when it comes to things like predicting tennis matches.

But, according to his colleague Timm Rosburg, research still hasn't determined whether it's really "pure recognition" or something else that drives our preference for familiar over unknown options. So Rosburg, Frings and memory researcher Axel Mecklinger at Saarland University designed a study to explore the neurocognitive mechanisms that underlie the recognition heuristic. Their findings will be published in an upcoming issue of *Psychological Science*, a journal of the Association for Psychological Science.

Existing research has already established that the familiarity component of recognition memory is represented by specific brain activity that can be recorded using electroencephalography (EEG) as early as 300 to 450 milliseconds (ms) after someone is exposed to a familiar object. So Rosburg and his colleagues decided to examine whether this same brain

activity is associated with performance on the city-size comparison task, a task that is associated with the recognition heuristic. Participants were presented with pairs of city names and were asked to decide which city in the pair is larger. The authors found that they could indeed predict which city the participant chose based solely on brain activity in the 300-450 ms time window.

By connecting the behavioral processes associated with the recognition heuristic to the brain markers associated with familiarity-based memory, the authors were able to establish that the recognition heuristic really does seem to depend on pure recognition, or familiarity. Rosburg says that this kind of knowledge "allows us to understand both deficient decision making and the benefits of heuristics."

While the recognition heuristic may allow us to make decisions quickly and efficiently, it may not always lead us down the best path. Rosburg notes that the recognition heuristic may actually be disadvantageous when it comes to picking stocks for our investment portfolios. "For the stock market, there is some reason to believe that the investment returns correlate negatively (and not positively) with the recognition of a company. A lot of companies involved in the credit crunch crisis actually had highly familiar names and this familiarity might have persuaded investors to rely on their products and stocks."

So is there any way to ensure that we make decisions in which the recognition heuristic works for us and not against us? Rosburg contends that "decision makers will have to learn in which particular environments the feeling of familiarity will guide them to frugal decisions. Only when we, as deciders, realize that some of our choices are related to the feeling of familiarity, we might be able to develop a critical distance to this kind of 'gut' feeling."