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Understanding Differences in Behaviour: The Role of Mental Models

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Why do some people tend to make snap judgements about another person based on a single behaviour, while others only make up their minds after repeated observations in different situations?

Take this scenario, for example. Sam was half an hour late for his job interview and had also forgotten to bring along a document that he knew was required. Nevertheless, at the interview he was articulate and could answer challenging questions with confidence. When the interviewers evaluated the candidates, one of them concluded that Sam was absentminded and a habitual latecomer. Another interviewer gave Sam the benefit of the doubt and wanted to include him in the next round of interviews. Given the same circumstances, why was one interviewer quick to dismiss Sam while the second interviewer wanted to assess him further?

In a real-life context, is it possible to predict how and when people make social judgments about others around them? Singapore Management University psychology professor Jennifer Tong attempts to shed new light on why people entertain different assumptions about the nature of human behaviour in a series of psychological studies with a difference. Her findings have practical implications for interactions in the office and at the personal level.

Measuring Mental Models

According to social psychologists and researchers, we possess certain mental models which help to explain and give meaning to people and phenomena we observe around us. These models form our assumptions or beliefs about external reality. They are usually 'automatic' processes and we are often unaware of their effects on our actions and decisions.

While a doctor can perform a CT scan to pinpoint a haemorrhage inside a patient's brain, for example, social psychologists and researchers face a different challenge in trying to examine what goes on in people's minds. Tong designed a study to unravel some of these intricate mental processes. "The objective was to see if participants could demonstrate in some explicit manner how people think about the relationship between behaviours and their causes," she said.

In Tong's first study, participants were provided with computerised drawing boards on which were shown the words 'situation', 'trait', 'intention' and 'behaviour'. They were asked to draw arrows between these four elements to indicate the inter-relationships between them. They could draw as many arrows as they wished. Unknown to the participants, the drawing process was being recorded by a screen capture programme attached to the computerised drawing boards. This allowed Tong to study the sequence in which the arrows were drawn. "The sequence indicates a tendency to favour one or more causal explanations. It taps the participant's habitual inclination to ascribe causal priorities to various links in his or her mental model," said Tong.

Existing measurements for such tests focus on the arrows themselves to show what participants thought were the causal relationships between the various elements. Tong's research brought in a new dimension altogether. Thus, the first few arrows to be drawn indicated causal relationships at the top of their minds, reflecting the participants' preference for these specific concepts to explain behaviours.

Tong found that the earliest (and most frequent) arrows drawn were often linked to behaviour i.e. trait to behaviour, situation to behaviour and intention to behaviour. The study also showed that people's mental models differed significantly from one another. Based on the results, she was able to derive three types of mental models; 'trait-centred', 'situation-centred' and 'intention-centred'. Trait-centred participants were those who linked trait to behaviour first, and situation and intention to behaviour. Similarly, situation-centred and intention-centred participants were those who linked situation and intention, respectively, to behaviour at an earlier stage.

Predicting Social Judgment

In her second study, carried out with participants from the US and Hong Kong, Tong wanted to find out if mental models could be used to predict people's social judgment processes. She set about testing if the different mental models could predict different tendencies to make a 'trait judgment', or to label someone based on a single behaviour. This "readiness to infer traits from behaviour" is known as spontaneous trait inference (STI). People who make these inferences are unaware that they are doing so.

Previous research suggests that cultural factors have an effect on STI; people from more individualistic (western) cultures show a greater propensity to label someone based on traits while people from more collectivist (eastern)

cultures are less likely to use trait terms to explain behaviours. Instead, they would use "social roles, obligations and situational factors" more frequently.

In this study, Tong adopted the 'false recognition' paradigm developed by Todorov and Uleman (2002). Participants previously involved in the drawing task were now engaged in a memory test which consisted of two phases. In the first phase, they were presented with faces of people which were accompanied by a sentence describing their behaviour, e.g. "Jeff picked out all the good pieces of chocolate for himself before his guests arrived".

In the second phase, participants were given a recognition test. The same faces were now attached to trait words, and participants had to decide if the trait word had appeared in the earlier behavioural sentence. Using the same example again, Jeff's face was now paired with the word 'selfish'. If participants had made a trait inference about Jeff's behaviour in phase one -- in other words, if they had unconsciously labelled Jeff's behaviour using a trait word -- the greater the likelihood they would recall the inferred term and falsely conclude that this word had indeed appeared in the behavioural sentence. Hence, the more mistakes participants made, the more likely they had inferred a trait when reading the sentences.

Tong hypothesised that trait-centred participants were more likely to engage in online judgements. They were likely to make a judgment based on the primary (the first 12) behaviours of the actors and, as such, would also recall more vividly these primary behaviours. In contrast, situation-centred participants were more likely to engage in memory-based judgements as, being more aware of situational constraints, they would prefer to gather more information before making a judgment. Such judgements would be based on the secondary (final 12) behaviours and how accurately they could remember those behaviours.


As predicted, Tong found that trait-centred participants recalled significantly more primary behaviours (online appraisal) while situation-centred participants recalled more final behaviours (memory-based appraisal). In addition, the degree to which a trait-centred participant actually liked the actor was linked to recall of the primary set of behaviours, whereas how much a situation-centred participant liked the actor was related to recall of the final set of behaviours.


Practical applications

Tong's research marks a new development in the measurement of mental models, and her findings provide initial evidence for the validity of mental model assessment.

According to Tong, "if measuring our mental models enables us to better understand our tendencies regarding social judgments, it would be possible for us to attenuate social judgment bias by actively adjusting our judgement processes." Back to the hypothetical interview with Sam, a trait-centred interviewer would tend to be more easily biased by information at the outset because initial impressions count more. In this case, the first interviewer thought that Sam was "absentminded" and a "habitual latecomer" and stuck to this evaluation despite Sam's confidence and skill in handling difficult questions. Such a person should exercise restraint in making early assessments, and pay more attention to information presented throughout the entire interview before coming to any conclusions.

Likewise, a situation-centred interviewer should not rely on memory recall, but aim for greater accuracy in making judgments by carefully noting down all relevant information during the course of the interview. If not, the result could be skewed by a tendency to recall the later part of the interview better than the earlier segment.

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