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The Role of Experience in the Susceptibility to Confirmation Bias in Pilots

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Abstract

Confirmation bias refers to the tendency of an individual to prioritise and seek out evidence that confirms their theory or hypothesis and avoid or place little importance on disconfirming information. In the field of aviation, confirmation bias can have disastrous consequences and has been implicated in several aviation disasters. Despite the potentially fatal consequences, little research has systematically explored the underlying causes of confirmation bias in pilots. The following research examined the role of experience in the susceptibility to confirmation bias in pilots utilising an aviation themed location discovery task. To assess the relationship between flying experience and susceptibility to confirmation bias, 53 participants (23 non-pilots with no prior flying experience, 13 novice pilots with between 0-200 hours of logged flight time, and 17 experienced pilots with between 220-15000 hours of logged flight time) were asked to complete an online map-based location discovery task, which required participants to imagine that they were unsure of their location in four aviation themed scenarios. They then had to select, out of three features given, which feature would be the most useful for helping them to decide on their current location. Two out of the three features provided incorrect confirming (positive) tests of the pilot's hypothesised location and one feature provided the correct disconfirming (negative) test of their hypothesised location. Results indicated that overall, participants primarily utilised a hypothesis-confirming strategy on the task. No relationship between experience and a participant's susceptibility to confirmation bias was identified. A thematic analysis of the comments provided by participants was completed, which illustrated that participants were fairly consistent in the decision-making strategy that they used when reasoning about their location across each of the four scenarios. Interestingly, non-pilots and novice pilots primarily utilised a hypothesis-confirming approach most regularly in their feature selection. By contrast, it appears that the experienced pilot group primarily utilised a strategy that favoured the selection of manufactured objects and large objects. Future research should focus on discovering the mechanisms underlying confirmation bias and the identification of groups of people who are less susceptible to it. This information can then be used to create a model of confirmation bias outlining interventions that can be used to reduce or eliminate its effects.

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