



Heuristics in sport: A scoping review

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ABSTRACT

Judgement and decision-making under uncertainty often rely on simplistic “rules of thumb”, known as “heuristics”. The purpose of this scoping review is to explore the extant literature focussed on heuristics and sport. This study employed a five-stage scoping review methodology. The databases searched were Scopus, Web of Science, SPORTDiscus, and PsycInfo. The search terms were sport*, heuristic* (and its synonyms: cognitive shortcut, shortcut, rule of thumb, mental rule, cognitive rule) plus cognitive bias. The search identified 2019 studies, of which 38 were included in the analysis. Studies based in USA and Germany were most common. The use of heuristics by players were most common, while football (soccer) and basketball were the most frequently researched sport contexts. Both males and females were commonly included in most studies, but there were no studies with an explicit focus on females. The research was contextualized within several academic disciplines (e.g., psychology, forecasting, JDM, organization behavior, sports marketing and sponsorship, coaching science, risk analysis and sociology). Approximately 80 % of the studies were quantitative. Sixteen studies examined the fast and frugal heuristics approach (i.e., take-the-first heuristic (n = 8), recognition heuristic (n = 7), or gut instinct (n = 1), whereas eleven articles embraced the heuristics and biases approach. Future research should pursue a greater variety of heuristics, investigate the use of heuristics by selectors and boards of directors, and how best to design, implement, and evaluate heuristic education programs.

1. Introduction

Judgement and decision-making (JDM) is important for understanding the behaviour of athletes, coaches, referees, and managers (Raab, Bar-Eli, Plessner, & Araújo, 2019; Raab, MacMahon, Avugos, & Bar-Eli, 2019; Bar-Eli, Plessner, & Raab, 2011). Heuristics are frequently deployed when time, information, and information processing capabilities are limited (Guercini & Milanesi, 2020). Rather than employing a systematic approach to every decision, people utilise heuristics to simplify the retrieval and storage of information in their memories (Dale, 2015). Simply put, heuristics are mental shortcuts or rules of thumb (Kahneman, 2011). Hjeij and Vilks (2023) identified three distinct phases of heuristics research. Initially emerging in the 1950s, Herbert Simon’s notion of bounded rationality was extended by Daniel Kahneman and Amos Tversky in the 1970s into the heuristics and biases framework. Subsequently, during the 1990s, Gigerenzer promoted the utility of ‘fast-and-frugal’ heuristics (FFH).

There is a disagreement as to whether heuristics help or hinder JDM. FFH prioritizes speed and resource conservation over exhaustive

analysis and complex models (Gigerenzer & Gaissmaier, 2011). Advocates of the FFH believe that heuristics 1) conserve cognitive resources by reducing the mental effort and time required for decision making; 2) are necessary when individuals have incomplete or imperfect knowledge; and 3) allow for adaptation to changes in the decision environment, enhancing their practicality and usefulness. In contrast, advocates from within the “heuristics and biases” school considers heuristics to be a source of cognitive bias that hinders JDM (Tversky & Kahneman, 1974). For them, decision-makers who invoke heuristics do not consider the full complexity of the decision context, resulting in suboptimal decisions. Despite these opposing views, both schools agree that heuristics are suitable when there significant time constraints (Gigerenzer, 2008; Tversky & Kahneman, 1974), and when outcomes and their probabilities cannot be computed rationally due to cognitive limitations (Mousavi & Gigerenzer, 2017). Members of the “heuristics and biases” school, are not likely to view heuristics as inherently unacceptable. Rather they encourage heuristic-informed decision-makers to understand the biases and limitations associated with heuristics, make corrections or adjustments to mitigate known biases associated with the selected heuristic,

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