

Neurostrategy

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INTRODUCTION

One of the most prominent and fascinating advances that have helped us to understand many of the facets of human behaviour in organizations is the rise of the interdisciplinary approach. This is especially true when it comes to the role played by management experts in formulating and implementing their organization's strategy, and in the subsequent results. Of all the disciplines that currently have implications for strategy, particularly notable is the interdisciplinary contribution from the field of neuroscience (Butler, 2014). Following the path opened up by the Human Genome Project, neuroscience took an exponential leap forward when the United States government declared the 1990s to be the Decade of the Brain. The rapid expansion in research continued during the first decade of the 21st century, known as the Decade of the Mind. The advances made in our understanding of the complex network of interconnections between the language of the brain and of the mind has radically expanded the frontiers of neuroscientific knowledge.

More advanced knowledge about the human brain has brought with it a deeper understanding of its internal functioning. At the same time, this has called into question the key premise of economics, which views people as utilitarian individuals who make completely rational economic decisions. Since economics has thus far been the most influential discipline behind strategy theory, managers should attempt to understand the principles of behavioural neuroscience (Glimcher & Rustichini, 2004; Lieberman, 2006). This field highlights the capabilities of the human brain; however, it also raises awareness of its inherent risks, habits and oversimplifications and their implications in terms of decision-making, given that they are behind a lot of bad economic and business decisions.

Although the study of the biological bases of human behaviour in organizations is still in its infancy (Zyphur et al., 2009: 70) and the application of this knowledge to managerial practice does not seem to be on the immediate horizon (Balthazard et al., 2012; Peterson et al., 2008; Waldman et al., 2011), there is a broad current of thought endorsing the benefits of neuroscientific decision-making research and the role played by emotions, gestures and symbols, semantic processing, human interactions and neuronal connections, almost to the point of putting knowledge of the human brain at the very core of modern management. In 2004, the magazine *Frontiers in Human Neuroscience* published a special issue on *Society, organizations and the brain*. In the field of management, it is worth mentioning the study on "Information, attention and decision making" published by the *Academy of Management Journal* in June 2015.

Hannah et al. (2013) describe a cognitive revolution driven by an understanding of the mental processes that explain people's behaviour and effectiveness. They argue that this paves the way for a multidisciplinary and multi-method approach to the conceptualization of organizations and their management. Neuroscientific research applied to human behaviour in organizations could thus be seen as providing profoundly innovative, heterodox and even radical ideas, and it may also give rise to new approaches and methods aimed at uncovering the human decision-making process, in a way that would otherwise be

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unattainable. This could represent a significant step forward in knowledge about how to more effectively design and govern social groups with predetermined objectives.

Neuroscience promises especially significant contributions to strategic management research and practice. This discipline is focused on studying the behaviour of a specific type of decision-makers and decisions: those of a strategic nature. There is an ongoing debate about the pros and cons of substantive collaboration between neuroscience and strategy, in a field referred to as **neurostrategy** (Powell, 2011; Ascher et al., 2018). An emerging literature has argued in favour of the potential of neuroscience to improve our understanding of the biology of the brain and how it links to economic and financial decisions (e.g., Camerer, Loewenstein & Prelec, 2005; Camerer, 2008). An emergent notion is that strategic management needs neuroscience and can benefit from its research in three ways: by validating constructs, testing theory, and informing strategic practice. But the intellectual boldness entailed in ideas about the neuroscience of behaviour, and the direct threat that these ideas pose to established, accepted paradigms have shaken certain disciplines, which claim such notions are incompatible with the conventional heuristic approaches of their fields of study. Therefore, there is a notable school of thought that has criticized the application of neuroscientific research to economic decision-making and to management and organization studies (Gul & Pesendorfer, 2008; Bernheim, 2009). Regarding the criticism of the application of neuroscientific research to organization studies, and by extension to strategic management, it poses some relevant theoretical and methodological challenges, rightly identified by Lee, Senior & Butler (2012). This line of criticism advocates a careful evaluation of the organizational applications of this field (Foxall, 2014), while some even directly rule out the notion that neuroscience can make a positive contribution to the advancement of management (Lindebaum, 2013; McLagan, 2013).

As Butler et al. (2016) point out, behavioural neuroscience “is at a crossroads in its theoretical development”. Healey & Hodgkinson (2014: 76) succinctly capture the state of affairs in the following terms: “At one extreme, advocates such as Becker et al. (2011) are calling for a new, biologically rooted, subfield that aims to map neural mechanisms as the prime causes of organizational behaviour (...) At the other extreme, scholars are warning that applying neuroscience to management and organization studies is a dangerous distraction”

This article presents a review of the literature that analyses the contributions of behavioural neuroscience to the study of managerial decision-making and offers a critical evaluation of its implications for management and organization studies, especially in the field of strategy. First, the paper explains the scope of Neuroscience as discipline and its developments applied to social sciences, with the purpose readers can understand its potential to explain human behaviour in general and the economic behaviour specially. Second, it reviews the most recent literature on neurostrategy by developing its implications to understand the mind of the strategy-maker and so approximating to the authentic expert judgement in strategy. The analysis continues by offering both an approximation to the possible applications of the neuroscientific knowledge to managerial practice with the objective to identify and prevent some problems as cognitive biases, and useful recommendations for decision-makers. The description of the forms of strategic behavior categorizes them into four models: rational, limited rationality, psychologically motivated and biologically induced. Finally, the paper maps out the main strands of the debate in the future.

BACKGROUND

Neuroscience is a relatively new discipline that seeks to better understand the neurological and cognitive bases of human decisions and actions. It incorporates the contributions of a set of scientific disciplines

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