

Neuromanagement as a flourishing area in Management Science: A Literature Analysis

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Abstract

Technological developments in neurology has led the emergence of neuroscience as an independent scientific field and together with the increasing usage of fMRI devices in social sciences, many sub-disciplines have been flourished such as neuropsychology and neuroeconomics. This study aims to examine “neuromanagement” as one of the newly appeared sub-disciplines of neuroscience, and to discuss the possible impacts to management sciences. Literature analysis has been made by using Ege University Library Search Engine, which has an open access to neuroscience and management journals. According to the analysis, it was found that two different academicians groups separately have concentrated on neuromanagement as a field. First group of academicians are from Zhejiang University, China, under Neuromanagement Laboratory and School of Management and focus on generally event-related potential (ERP) and the relations to management subjects. Second group of academicians are from universities in Milano, mainly from psychology departments and focus on some management subjects under neuroscience experiments.

Keywords: Neuromanagement, Management Sciences, Neuroscience

1. Introduction

It has been always mysterious for human kind how human brains work. Not only scientific studies both also philosophical thinking question the differences between body and mind, and how human have consciousness to their existence. The developments in the field of medical technology and neurology has made it possible for scientists to acquire empirical data on how the brain works. In accordance with these developments, neuroscience as an independent scientific field has emerged and together with the increasing usage of fMRI devices in social sciences, many sub-disciplines have been flourished such as neuropsychology, neuroeconomics and neuromarketing. These developments has led the emergence of Neuroscience as a distinct scientific field and many lots of studies have been made starting from mid of 20th century.

Neuromanagement is a scientific field of study, which placed under neuroscience, by using neuroscience methodology to management sciences' subjects (Venturella et al., 2017). In this study, we aim to examine this newly appeared area by analyzing current literature in order to take the picture of current situation and to analyze the possible effects to the management sciences.

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2. Literature review

The intensive use of fMRI (Functional Magnetic Resonance Imaging) devices since the 1990s has led to the use of brain imaging data as an empirical basis in social sciences. The first emergence of neuroscience studies into social sciences is work in the field of neuropsychology (Lindstrom, 2010: 18). These studies, which examine the relationship between human behavior and mind processes, have influenced all other areas of social science related to behavior. Neuropsychological studies in human behavior and decision-making, especially in the field of behavioral economics (Camerer et al., 2005; Clithero et al., 2008), and neuromarketing studies in the field of consumer behavior under marketing have led to the gradual introduction of neuroscience studies into business discipline (Healey and Hodgkinson, 2014).

When we come to the management field, we can see that these studies started to be discussed after 2000's; but it will not be wrong to say that the main intensification in the summer is the post-2010 period (Erkal et.al, 2017). When we look at the scientific positioning of management and organization, economy based theories are effective at the macro level and that basic assumptions of many mainstream theories are taken from economy theories (Erkal, 2017: 118). From this point of view, studies in the field of neurosciences have made it possible to create new debates in the field of management and have shown important implications in the discussions on the future direction of their theorization.

3. Problem definition/formulation

This study aims to problematize the progress of neuromanagement, a newly appeared distinct field in neuroscience and analyze the possible effects to management sciences literature. Neuroscience studies has already been effective in management and organizational studies especially in organizational and behavioral studies. These studies generally have used the second hand data from neurosciences experiments and tried to relate management subjects with these data (Erkal et. al, 2017). Different from these studies in management literature, current neuromanagement studies have a tendency to be distinct field in neuroscience like neuroeconomics and neuromarketing by using specific experiment constructions. Therefore, it is worth to analyze current literature both taking the picture of current situation and also questioning what can be the possible implications to management literature.

4. Method of analysis (Experimental procedure/ Numerical experiments)

Keyword search and content analysis have been used in this study as a method of literature analysis. "Neuromanagement" as a keyword was written to Ege University Library Search Engine, which has an open access to both neuroscience and management journals, and related articles listed from this search. We reached ten articles that neuromanagement was the one of the keyword of the study. Due to be reached less number of articles, content

analysis has been chosen as a method and articles have been read in detail in order to take the picture of current situation of literature. According to the information analyzed from articles, future implications to management literature have been interpreted.

5. Results and discussion

According to the analysis, first of all we can say that there have been two different academician groups separately concentrated on neuromanagement as a field. First group of academicians are generally located in Zhejiang University in China, and they are all working in the special institution related with neuromanagement called Neuromanagement Laboratory and School of Management together. It is easily seemed that they are working together in their studies and their studies mainly focus on event-related potential (ERP) as a theoretical paradigm. The articles of these group of academicians generally are related with the verification of ERP model with the different kind of experiment settings. Xiaoyi Wang and Quingguo Ma are one of the leading researchers in this group and they are generally the first writer of the articles.

Second group of academicians are from universities in Milano, mainly from psychology departments and focus on some management subjects under neuroscience experiments. Their studies collected in one journal, Neuropsychological Trends as a special issue in 2017. Michela Balconi and Irene Venturella are one of the leading researchers and they are member of psychology department and have an interest to management subjects and neuromanagement as a distinct area in neuroscience.

The other result that we can reach from literature analysis is the exhibition of management subjects studied at the articles. The result can be shown at figure 1:

Management Subjects	Articles
Brand Extention	(Wang et al., 2012a) (Shang et al., 2017)
Aestehic	(Wang et al., 2012b) (Ma et al., 2015a)
Framing Effect	(Ma et al., 2015b)
Occupational Health	(Ma et al., 2016)
Communication	(Balconi & Venturella, 2017)
Agency & Business Models	(Balconi et al., 2017)
Change Management & Training	(Salati & Leoni, 2017)
Leadership	(Venturella et al., 2017)

Figure 1: Management Subjects and Articles

If we interpret the results, it can be said that Chinese researchers have generally focused on the subjects closed to the neuromarketing. Compare to the other subjects in management sciences, brand extension, aesthetic and framing effect are closer subjects to field of marketing. When we look at the Italian researchers, they have a tendency to focus more western type of management subjects such as leadership, change management. These differences can be read as geographically or traditionally.

6. Conclusion

When we evaluate management literature and neuroscience studies from a wider perspective, it will not be wrong to say that these studies will provide important contributions to the management field in the macro sense in the future. We can say that subject-based approaches are increasingly influential, both in the philosophy of science and in the paradigmatic shift in management and organization. In this context, neuroscience studies will be one of the key pillars for human-based viewpoints, with the potential to solve the mental working mechanism of human behavior.

Being a sub-discipline of Neurosciences, Neuromanagement has a potential to flourish within management sciences by introducing empirical data to the literature. Looking at the general qualifications of researchers in management sciences, it can be seen that many researchers have had business administration background and to receive empirical data from neuromanagement experiment settings have quite far from their data collection traditions. Therefore, it can be assumed that in the future more multi-disciplined management researcher can be placed under management schools.

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