

Social Neuroscience and HR: An Introductory Perspective

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journals.sagepub.com/home/nhr**Shruti Tewari¹ and Gopal P. Mahapatra²**

Abstract

Human resource management (HRM) has evolved over the years and is constantly adapting to the advanced technologies and research endeavours to address the complexities of the corporate environment and aspirations of the stakeholders. In this article, the authors explain the relevance of neuroscientific research for HRM practices. Interdisciplinary nature and landmarks of social neuroscience and newly evolved discipline of organisational cognitive neuroscience are discussed. The nexus of Neuro–HR has phenomenal research and application opportunities to progress and enhance the quality of HRM for effective organisations leading to a healthier society. A significant use of neuroscience in HRM appears to be an interesting journey full of opportunities and challenges ahead.

Keywords

Neuroscience, human resource management (HRM), Neuro–HR, organizational cognitive neuroscience (OCN)

Introduction

Technological advancement and neuroscience have transformed the way we live, think and work.¹ Using these, medicine science has seen revolutionary advancement in the diagnosis and treatment of maladaptive behaviour and diseases. The precision in diagnosis and treatment has reached an astonishing level. Extending it to social processes and behaviour, social neuroscience (SN) investigates the role of biological systems in implementing social processes and behavioural practices. Brain-mapping studies, particularly within the field of social, cognitive and affective neuroscience have provided underlying insights that can be directly applied to workplace (Lieberman, 2007). Researches on attention, memory, mindfulness, emotional regulation, habit formation, social comparison, prejudice, empathy, social pain, imitation, mirror neurons, fairness, collaboration, social categorisation, persuasion, morality, trust and goal pursuit have high potentials for human resource management (HRM) practitioners.

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Social Neuroscience and Allied Disciplines

Neuroscience refers to the scientific study of the nervous system. The nervous system is responsible for process alteration, coordination and adaptation to the environment. Our effective adaptability is a function of how well we are in sync with the environment.

As an interdisciplinary field, SN aims to refine our understanding of humans as a ‘social being’. SN attempts to resolve all possible problems and issues related to human behaviour using the neuroscientific method. Through these methods, we can investigate underlying neural pathways, studying which area in the brain gets activated during specific responses. For example, functional magnetic resonance imaging (fMRI) shows activity in a specific brain area using the metric of blood flow in the brain, electroencephalography monitors the electrical activity of the brain centres and the most recent method called transcranial magnetic stimulation is a non-invasive procedure in which we can stimulate/inhibit a specific area by placing a magnetic coil on the scalp and study its effect on specific responses. Neuroimaging works on the principles of ‘functional connectivity’. It refers to the functionally integrated relationship between spatially separated brain regions (Friston, 2011). By using this principle, SN helps us to understand associations among different emotional, behavioural and cognitive responses based on precise neurometric parameters instead of survey or interviews. Social desirability and response bias are not an issue when we use the neuroscientific method. Many academic centres in India have neuroscientific research labs (e.g., National Brain Research Centre [NBRC], National Institute of Mental Health and Neuro-Sciences [NIMHANS] and Centre of Behavioural and Cognitive Sciences [CBCS] at Allahabad University so on and so forth). The advance technique and analytic precision come from expertise. Therefore, these methods can only be used by trained experts such as neuroscientists or behavioural/cognitive scientists. However, the insights from social neuroscientific researches are available in the form of academic journals, books and magazine articles. With conceptual understanding, these insights can be translated into testable hypothesis and training programmes.

SN gave rise to associative interdisciplinary fields such as organisational cognitive neuroscience (OCN) and consumer neuroscience (CN). CN has become a well-established field that uses neuroscientific methods to study consumer decision-making, advertising and branding so on and so forth. On the other hand, OCN was introduced in 2007 in the special issue of the *Annals of the New York Academy of Science* (Butler & Senior, 2007). OCN was established as an applied form of SN. OCN refers to the field that applies neuroscientific methods to analyse and understand human behaviour within the applied setting of organisations at various levels—from micro to macro. It combines all the fields of behavioural sciences with business and management.

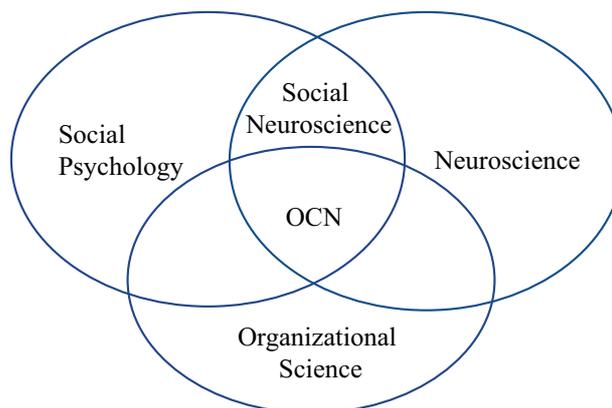


Figure 1. Interdisciplinary Fields to Study HRM Practices Using Neuroscience

Source: The Authors.

OCN is not limited only to the demonstration of neuroscientific evidences for existing theories, but it also goes beyond that and incorporate the knowledge of brain systems to develop new hypotheses about relevant organisational issues, including HRM.

How SN/OCN Can Leverage HRM Practices?

Human resources are one of the essential resources for organisations. To adapt with rapid changes in the volatile, uncertain, complex and ambiguous (VUCA) corporate environment, HRM practices need to be progressed with time and technology. The history of HRM highlights its evolution, sustainability and transformation in alignment with the changing times and stakeholder expectations (Ulrich & Dulebohn, 2015). HRM has gone through a long evolutionary process. The field has seen radical changes, starting from industrial revolution, where employees were perceived as means to economic gains to perceiving employees as valued resources—having heart and mind with focus on the holistic growth of the employees. According to D. J. Cohen of Society for Human Resource Management, ‘HR’s past is relatively long and humble. The present is both positive and challenging, and the future of HR presents the profession with opportunities and even more thought-provoking challenges’ (Cohen, 2015).

The typical cycle of the HRM process and subprocesses starting from talent acquisition to exit can be pictorially represented simply as shown in Figure 2.

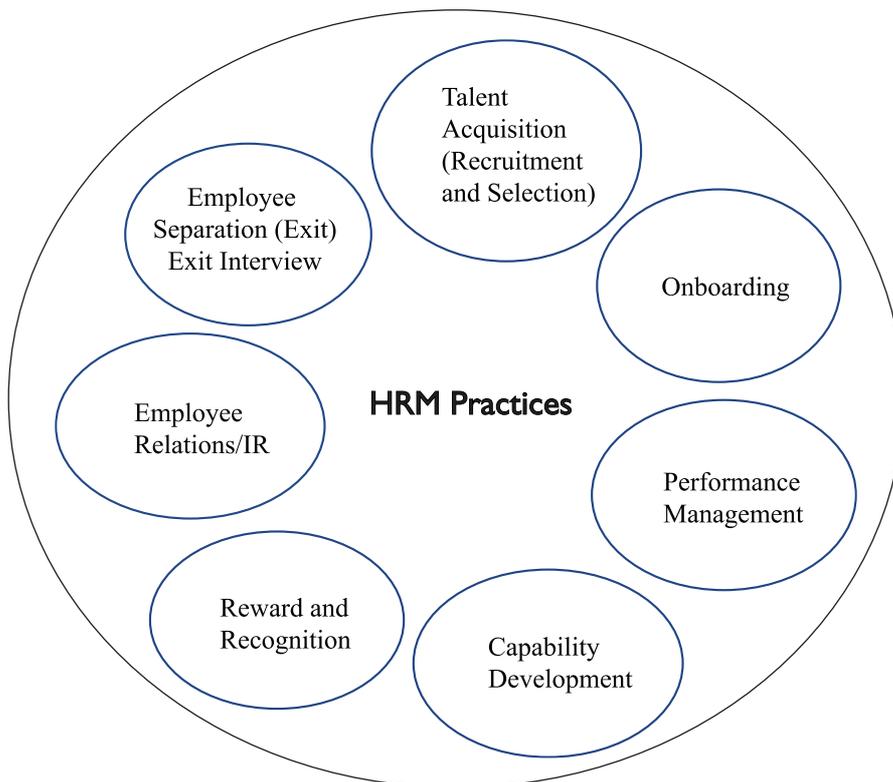


Figure 2. HRM Processes Overview

Source: The Authors.

The HRM processes can be broadly classified into seven stages: starting from talent acquisition, socialisation and training, on boarding, performance management (PM), capability development, reward and recognition, and fostering employee relations in order to prepare the employee for a comfortable separation from the organisation. On the basis of these HRM processes, understanding of human cognition and behaviour becomes a stepping stone to effective HRM practices. Growing neuroscience researches and initiatives have made noteworthy advancements in the understanding and prediction of human cognition and behaviour. Neuroscientific methods and analytics add tremendous opportunities to explore the unsolved puzzle of HRM. OCN provides fertile opportunity for research on various organisational theories and practices which can be directly applied by practitioners. One of the offshoots of OCN has been translated into leadership consultancy and coaching. David Rock (2008), the founder director of the NeuroLeadership Institute, not only popularised the term 'NeuroLeadership' but also brought neuroscience from academic journals to practices at the workplace. His 'brain-based model of collaborating with and influencing others' emphasises five domains of experience and responses crucial for both individual and organisational effectiveness. These domains are status, certainty, autonomy, relatedness and fairness, commonly known as 'SCARF'. Status is defined as relative importance to others, certainty as tendency to predict the future, autonomy as the sense of control over events, relatedness as relations with others and fairness as the perception of equality. Rock advocates creating SCARF profiling to assess relative importance and value distribution of these domains. People vary on these domains. For example, status may be more important for one, whereas others may give more value to relatedness. Rock explains the use of SCARF profiling for both individuals and organisations to promote effective social interactions through stimulating these drivers of reward or threat centres (Rock and Cox, 2012).

This model is based on insights into long-standing social neuroscientific researches on emotion, motivation, decision-making and performance. The roots lie in Walter Cannon's (1915) work on 'bodily changes in pain, hunger, fear and rage'. He discussed 'Flight or Fight' responses leading to the legacy of the 'approach and avoidance motivation' literature. Survival and effective adaptation depends on choices we make: approach or avoid. Neuroscience has investigated the biology behind approach-avoidance responses. Strong empirical evidences support that our brain reacts differently towards 'threat' or 'reward' stimuli from the social and psychological environments (Gordon, Barnett, Cooper, Tran, & Williams, 2008).

In an organisation, the way we communicate information, the way we interact with others (including the leader) and the way others interact with us do matter. These do matter because they trigger either threat or reward centres in our brain. Neuroscientific researches have discovered around 30 such centres commonly known as neural networks. The neural network refers to a functional unit that comprises brain areas responsible for specific tasks. Neuroscience leverages our understanding of specific cognitive, emotional and behavioural responses through studying these neural networks. Some of the neural networks popular in management are control, reward, affect, default and strategic. Insights into functioning and association of these networks can provide a rich understanding of effective performance. The discovery of two contrast networks, default and control networks, proves to be remarkable in redesigning physical and psychological infrastructures of global organisations. The default network, which is activated in free time but does not sleep, also known as the zoning out network, is associated with creative and innovative thinking and the control network, which is activated when directed to a task, is associated with goal-directed performance (Waytz & Mason, 2013). This discovery inspired Google to provide the policy of 'free time' for employees and Twitter to introduce 'Hack Week' to think creatively without any directives. These insights are proven to be a helpful basis for developing new hypothesis, recommendations and training programmes for people management in order to make organisations effective.

In the area of PM, the complexities have grown with increased expectations and challenges. Neuroscientific insights have revealed that the number-based PM process is complex and obsolete.

Rock, Davis and Jones (2014) discovered two problems with the PM system. The first problem is the evaluation of people with any numerical rating or ranking which sometimes creates a bias or discrimination in the judgement. The second problem belongs to the people with a fixed mindset which holds them back; it gets in the way of learning and growth. He called it a 'mental paralysis associated with a fixed mindset' responsible for lowering down performance. Neuroscience recommends PM models which in turn cultivate trust, satisfaction, engagement and retention to engage employees and reduce conflicts (Rock, Davis & Jones, 2014).

Employee engagement has been gaining greater attention in the 21st century given the technical and socio-political disruptions. Neuroscientific methods can help an emergent leader in determining the level of employee engagement during the team processes in organisations. According to Waldman et al. (2013), individuals were assessed neurologically to determine the higher level of individuals and team engagement in the course of emerging transformational leadership. Neuroscience theory helps leaders in recognising the pattern of employee's behaviour and also enables the leaders to transform knowledge into positive behavioural change, which in turn enhances the effectiveness of coaching (Rock & Donde, 2008). Research also highlights the importance of meaningful work associated with employee's intrinsic motivation, which in turn boosts the level of performance, emotions and engagement. It appears that neuroscience can help organisations to discover the drivers of motivation, engagement and performance.

In a series of fMRI studies, Boyatzis, Jack, Cesaro, Passarelli, and Khawaja (2010) showed that resonant leaders activate specific neural pathways in their employees' brains that encourage engagement and positive working relationships. In another fMRI study, Boyatzis et al. (2012) interviewed senior executives and asked them to recall their critical past incidences and associated interaction with resonant and dissonant leaders. After few weeks, brain mapping of these executives was done through fMRI. They responded simple questions related to critical episodes they recalled in interviews. Results showed that specific neural circuits of the executives' brains were activated when they recalled their interaction with resonant leaders. These circuits have been shown to be involved in the mirror neuron network that gets activated when a person imitates another's actions. Completely different neural pathways were found to be active when executives were responding to questions based on events with dissonant leaders. In this case, the social network was significantly deactivated or suppressed. It reflects that recalling interactions with resonant leaders revives a person and puts him/her back into a positive and open mindset, associated with relationships, creativity and approach motivation. Such empirical evidences are important and precisely define underlying reasons for creating positive culture in an organisation. As Schaufenbuel rightly pointed out:

Neuroscience findings are helping to connect the dots between human interaction and effective leadership practices. As the mapping of the human brain continues, we can expect to learn more about how the brain functions and how leaders can use this knowledge to best lead people and organizations. (Schaufenbuel, 2014)

A big chunk of neurological studies emphasised the role of attention, emotion and habits on HR practices. The operative use of these cognitive processes in HRM can be tested and understood by combining existing neuroscientific insights and HR-focused studies. Collaboration has been considered the key to optimal human and organisational functioning. We are social animals and have innate predisposition to work in a group. Neuroscience claims that the innate collaborative human nature needs to be preserved by filtering negative and threatening stimuli from the organisation. A genuine and positive environment may lead to collaborative behaviour incorporating a collective gain. Neuroscientific evidences suggest that stress and anxiety management (Robertson, 2017), creating a fear-free organisation (Brown, Kingsley, & Paterson, 2015) and building trust (Zak, 2017), can significantly contribute to change management in the organisation.

Challenges and Issues

Can neuroscience affect the way we actually work in an organisation? We have just started unfolding the brain mysteries. Still a long way to go in order to explain complex group interactions using neuroscience. The universal appeal of neuroscientific methods has potential to resolve HR issues in global organisations. The wide range applications of neuroscience in HR comes along with challenges in execution. There are twofold challenges and issues related to the use of neuroscience in a workplace. The first challenge is dealing with myths associated with the term 'neuroscience'. More and more awareness need to be spread about what is neuroscience and how organisations can be benefited by neuroscientific insights. HR leaders need to have conceptual clarity on how to interpret neuroscientific data. It is not possible without having specific knowledge of minute details of any of the neuroscientific methods. The second challenge comes up when an organisation wants to solve unique HR problems specific to the organisation using these methodologies. The solution lies in recruitment, training and collaboration with experts who can come up with tailor-made solutions of HR problems for specific organisations. It does not mean that every HR personnel need to have neuroscience training or a degree in it. The expertise can be outsourced through collaborating with neuroconsultancy firms or neuroscience experts. Another way is to start a neuroscience analytics department in the organisation. Most of the MNCs including Google, Apple, Pepsico and Amazon have started the neuroscience research wings in their organisations. Another way of enhanced applications of neuroscience in selection, engagement and capability development (training) could be acquiring neuroscience certifications by HR practitioners—the way it has been extended in coaching. The gap between academia studying neuroscience and HR practitioners who can directly get benefited from the knowledge of neuroscience need to be abridged.

However, neuroimaging analytics have huge potentials for practice, use of these methods are also subject to ethical consideration. The balance and strict ethical consideration is responsibility of the organisations and researchers and it need to be taken very seriously. The declaration of Helsinki (World Medical Association, 2013) safeguards the ethical principles regarding human experimentation. The way it is mandatory for researchers and academics to go through the ethical approval process before starting data collection, such regularisation need to be maintained for practitioners who want to use human experimentation. Joint efforts from academics and practitioners will be adequate to address issues related to ethical and legal aspects of neuroscientific experimentation in theory and practice. Hence, significant use of neuroscience in HRM appears to be an interesting journey full of opportunities and challenges ahead.

In summary, to the authors, leaving the dry essence of cellular explanation of biological science, SN and organisational cognitive neuroscience have already extended to the areas of leadership, innovation, trust, mindfulness, stress at workplace, workplace wellness, coaching, employee engagement, change management and the like. The nexus of neuro–HR has phenomenal research and application opportunities to progress and enhance the quality of HRM for effective organisations, leading to a healthier society.

Declaration of Conflicting Interests

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Note

1. The views expressed in this article are authors' own and not necessarily that of the institutions they work for.

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