NEURO - CONTEMPLATION ON MANAGERIAL DECISION

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Abstract

How do we know where we are, where we have been and where we are going? It's important to understand intricacy of managerial brain. Brain is main organ of nervous system. It has the same general structure as brains of other mammals, but with developed cerebral cortex. Size of brain comes from cerebral cortex, especially frontal lobes, which are associated with executive functions . The area of cerebral cortex devoted to vision, visual cortex, greatly enlarged as compared to other animals. Basic structural design of brain is constructed through a process that begins early in life and continues into adulthood. Simpler circuits come first and more obscure brain circuits endow with basic blueprint. Experiences influence how or whether genes are expressed. Imaging studies suggest that differences in cognition and behaviour (might) relate to differences in brain connectivity. Perceptive the coverage to which two brains can differ is crucial in basic neuroscience research.

***Key Words*:** Neuromanagement, Brain, Neuro - Management Decision

Introduction

Decision making is one of the important aspects of behavioural manifestations that every organism has to enterprise. Human decision making process is an outcome of both neuroscientific approach and environmental counterpart. The perspective of decision making revealed the idea, that focused on the observations, of what people actually choose (or state that they will choose) on the basis of their biological and psycho-social point of view. Managers make decision in complex situations. 'Neuromanagerial decision needs decision maker (Manager) responsible for decision. This maker has number of alternatives and must choose the best alternative (or, optimised combination). When made, events may have occurred (maker has no control). Each (combination) of alternatives, followed by an event, leads to a result with some quantifiable significance. Cognitive research suggests that diverse preference orderings and decisions surface depending on which brain circuits are activated. This perchance contradicts micro postulate that complete preference ordering provide sufficient information to predict decision.

Origin of decision management is traced to Smith's *The Wealth of Nations* (1776). Smith described a phenomenon, based on ad hoc rules that explain how features of environment influenced behaviour, critical for appreciating decision behaviour and aggregation of decisions. One thought is that regularities in behaviour could (*ceteris paribus*) provide psychological basis to manage decision fluctuations. What followed were series of theorems which extend scope of revealed - preference to decisions with uncertain outcomes. Interesting is that they demonstrate one who obeys ' as if ' he has continuous utility function that relates subjective value of any gain to its objective value and 'as if' his actions were aimed at maximising total obtained utility. These form basis to anticipate analysis unique to decision management. This was a landmark event to predict decisions from single neuron activity. Contributions characterised the idea that complex decision problems can be modeled through use of simple rationality model (maximise utility function of decision variables which signify preferences). Question is under what conditions such functions exist?

Consistency properties are internal to Neuro decision functions that describe behaviour. Samuelson's Revealed Preference formulation is scientifically respectable if behaviour is consistent, then it must be possible to explain behaviour without reference to anything other than behaviour. Sen (2002) identifies 'internal consistency' approach and 'self-interest pursuit' approach. Internal consistency model explains behaviour by finding regularities in observed behaviour that enable consistency without reference to anything other than (or external to) observed behaviour. In order to predict Neuro decisions, researchers work out which preferences are consistent by checking whether agents' do or do not violate certain

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axioms of revealed preference. Added approach is 'self-interest pursuit' approach. It is assumed that self-interest, represented by complete preference ordering, dominates motivations in coherent matrix. 'Rational' behaviour consist in pursuit of self-interest. This provides basis for application of utility theory in coherent analysis which represents chooser's preferences and explains how preferences determine Neuro decisions. Internal consistency is neither sufficient nor necessary condition of Neuro decision. It is not sufficient because '[a] person who always chooses things he values least and hates most would have consistency of behaviour.

Interpretation of managerial activity in terms of neuroscience is typically concerned with neurophysiological underpinnings of Managerial neurodecision behaviours. One key insight is modularity of human brain (not all brain circuits get activated when executing response to given circumstances). Same stimuli may generate different behavioural responses depending on which brain circuits are activated. If hypothesis is accurate, different brain circuits guide to different decisions depending on which brain structures and circuits are activated. Consequently, there would be various (possibly conflicting) preference orderings. Furthermore, if particular brain circuit act relatively insulated, distinctive preference ordering result (closed system).

Human resources rely on cautious mock-up of 'neuromanagerial decision making. Tactic consists in construction models to display relationship between cause and neuro incongruity. Freedom provided by introspection technique lead to selection problem. Neuro - decision making result in selection of path of action among alternative circumstances. Each process is regarded as incessant process integrated with situation. Investigation is concerned with rationale of 'neuro decision making, reasonableness and invariant decision making. These reflect compensatory interface of brain structure potentiates traits and framework. Therefore, decision making is reasoning or emotional process which can be rational or irrational, based on explicit / tacit assumptions. This leads to formulation of a 'neuromanagerial decision paradox'. Explorations on brain mechanisms juxtapose link between brain and behaviour to study neuronal activities, connections between neurons, plasticity of brain and relationship between brain and behaviour. These inherit methods as how brain encodes, processes information, stores representation in mind to craft actions in reaction to stimuli. These embrace sensation and perception of information, interface linking information in dissimilar modalities, matrix of memory and dispensation of information. Deduction is based on postulation that individual cognitive functions are based on neural activities in brain.

Somatic Markers: Neuro-management has primarily challenged the standard management assumption that decision making is a unitary process-a simple matter of integrated and coherent utility maximization. The goal is a mathematical theory of how brain implements decisions that is tied to behaviour. This theory is likely to show some decisions for which rational- decision making theory is a good approximation (particularly for evolutionarily sculpted or highly learned decision makings), provide a deeper level of distinction among competing neuro alternatives and provide empirical inspiration to incorporate nuanced ideas about endogeneity of preferences, individual differences, emotions and endogenous regulation. Research has begun to investigate central parameters viz. neural bases of decision predictability and value in theory of expected utility.

Somatic-marker hypothesis (SMH) was first proposed by Demasio (1996), to explain process of decision-making, while incorporating role of emotion. This hypothesis developed after working with neuro patients who had damage to prefrontal region, specifically in ventral and medial regions and presented severe impairments in decision making abilities (Damasio, 1979, 1994). In complex situations, cognitive processes become overloaded and unable to provide informed option. In these, Somatic Markers aid decision process. In environment, reinforcing stimuli induce associated physiological affective state. These types of associations are stored as Somatic Markers, possibly in ventromedial prefrontal cortex (VMPFC). Somatic-Marker associations are reinstated physiologically and bias cognitive processing. In cases where complex and uncertain decisions need to be made, Somatic Markers are summed to produce net Somatic state. This state is used to direct (or bias) selection of appropriate action. This biasing process occur covertly (unconsciously), via brainstem and ventral striatum, or overtly (consciously), engaging higher cortical cognitive processing.

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In view of the importance of avoiding a general tendency towards either kind of imbalance in neurodecision behaviour, it might be argued that unit of analysis should be presumably structural elements that require attention if problem is to be overcome. This is undeniably correct but objective is less to overcome problems of imbalance. The central factor involved in diagnosing either extreme at individual level is temporal horizon since this correlates highly with influence of impulsive and/or executive systems. This is best considered, however, after the way in which cognitive language is used in neuro - behavioural decision theory, which brings understanding of role of temporal horizon in decision-making. It suggests a means of overcoming problems of impulsive-hyperactivity and executive-hypo activity at individual level which must be evaluated before solution can be proposed and appraised.

There are four requirements of any candidate for cognitive component of neuro- behavioural decision. It must first be capable of filling need for a personal level explanation of causes of neurodecision Managerial behaviour. Second, it must provide an intentional explanation. Third, it should be capable of linking to the neurodecision Managerial economic behavioural management and Neuromanagement analyses. And, finally, it must relate philosophically to broader disciplinary concerns.

A cognitive explanation is required to provide understanding of the ways in which individuals subjectively respond to circumstances which influence their neurodecision behaviour towards rewards that may have short-term benefits but which entail longer-term deleterious consequences. Being able to characterize what individuals' desire and believe in these situations, what they perceive and how they feel, provide indication of underlying disposition to respond in a particular way at different times. This is of course a highly theoretical enterprise; in order to avoid undue speculation and conjecture, therefore, it is important that the cognitive requirements of neuro- behavioural decision theory are provided by a coherent body of knowledge relating personal level factors to situations that promote consumption.

The required personal level exposition must indicate the particular intentional terms that are applicable to the explanation of normal and addictive neurodecision Managerial economic behaviours within the framework of an overall theory that can systematically relate the two antipodal behaviour patterns. It must also be capable of explaining how intentional entities like beliefs and desires, perceptions and emotions would act upon the impulsion towards fulfillment of immediate wants, such as consumption of an addictive substance, in order to bring about a more advantageous long-term result. This calls for a well-worked out theory of human behaviour over continuum of normal to addictive neurodecision Managerial economic behaviours rather than an ad hoc application of intentional language on the basis of rapid observation of an individual's neurodecision Managerial behaviour.

Chaos: The decision field theory indicates that, the decision maker deliberates over these courses of action by thinking about the various possible consequences of each action. From moment to moment, different consequences come to mind over a period of time. For example, at one moment the decision maker may remember something (e.g., the kind face of the offender) that makes her think the offender can be reformed, and then she is appalled by the thought wasting his life, locked behind bars for 30 years. But at another moment, she may recall a recent story in which a parolee committed a horrible crime, and she may feel a cold fear arise from the idea of releasing another on the streets in a few years. At each moment, the affective reactions to the consequences of each action are evaluated and compared, and these comparisons are accumulated over time to form a preference state. The preference state for an action represents the integration of all the preceding affective reactions produced by thinking about that action during deliberation. This deliberation process continues until the accumulated preference for one action reaches a threshold, which determines the choice and the deliberation time of the decision .The threshold bound for the decision process, symbolized, is a key parameter for controlling speed and accuracy tradeoffs. If is set to a low threshold, then only a weak preference is required to make a choice. In this case, decisions are made very quickly, which may be reasonable for trivial decisions of small consequence. However, a low threshold would cause the decision to be based on little thought about the consequences, which is likely to lead to a choice with bad unforeseen outcomes. For more serious decisions, is set to a very high threshold, so that a very strong preference is

required to make a decision. In this case, deliberation takes longer, but the decision is based on a more thoughtful evaluation of all the consequences, producing a choice that is more

Quite often it is argued that in the microscopic world of quantum mechanics the uncertain principle makes the world non-deterministic. And due to chaos in Managerial decision making similar things does appear in the macroscopic world of daily life. Beside the fact that both statements are wrong they are not helpful. Due to chaos in Managerial decision making, small causes may evolve in time and have tremendous effects. It leads to important effects with implications for management and business. This paper discusses possible causes of chaos in Managerial decision making from a Managerial perspective. In decision making logic there are some rules how and when chaos in Managerial decision making is easy to describe. Almost everybody might have some understanding of the word chaos in Managerial decision making. At least in the sense as an ordinary dictionary defines it (great disorder or confusion). There is also a more elaborate definition of chaos in Managerial decision making in decision making logic. About 25 years ago inundation of publications dealing with chaos in Managerial decision making has come into motion. Unlike in many other such cases, they have left traces in 'daily life'. Recently, chaos in Managerial decision making was used to show that Taylor's management theory can't be correct.

The present paper gives hints where logical considerations of chaos in Managerial decision making will become important for business / management. Which system will show chaos in Managerial decision making and which won't is one central question in most logical work about chaos in Managerial decision making. (The second question is how to describe it, if it is chaotic. It will be the central question of my next paper.) Unfortunately, a global answer to the question has not been found yet. In decision making logic and math systems are normally defined by a set of equations. If all equations are entirely linear, chaos in Managerial decision making won't appear. This is obvious, because in a linear world everything is proportional to everything. The good news is that it will disappear, if nonlinearities are small enough. I.e. one can give (for certain classes of equations) exact proofs, whether their nonlinearity is big enough to cause chaos in Managerial decision making. For two reasons this is not too helpful for the present purpose. Firstly, the proofs are different for each class of equations and, evidentially, the infinite number of classes of equations couldn't have been considered. Secondly, in management we often have rules how systems will evolve.

Conclusion: When it is required to make decisions, one should always weigh the positive and negative business consequences and should favour the positive outcomes. This avoids the possible losses to the organization and keeps the company running with a sustained growth. Sometimes, avoiding decision making seems easier; especially, when somebody get into a lot of confrontation after making the tough decision. But, making the decisions and accepting its consequences is the only way to stay in control of the corporate life and time. Brain encodes all information and thus deals with decision making accordingly. It uses a variety of mechanisms to filter information in a constrained optimal way. The important thing to see is what techniques are being used to study the brain.

Neuro human resources model will soon play a crucial role in building of new reliable theories capable of explaining and predicting individual behaviour and strategic choices. Main message is that individual is not one coherent body. Brain is a multi-system entity (with conflicting objectives, restricted information, etc.) and therefore choice-maker must be modeled. Before the modern model, organisations were modeled as individual players characterised by an input-output production function. Systematic study of interactions between agents and choice processes within organisations (acknowledging informational asymmetries, incentive problems, restricted communications channels, hierarchical structures, etc.) led to novel insights. Applying a similar methodology to study individual choice-making is the way to understand bonds of rationality.

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