

Endoscopic View of Neuro - Preference Connectionism

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*The only skills you need to be a cogent and practical manager
: an ability to fail, an ability to have ideas, to sell those ideas, to execute on those ideas
and to be persistent so even as you fail you learn and move onto the next adventure.
..... James Altucher*

Prelude

Since ancient times scholars at many levels of reduction have studied preference-making. Over the last three decades, social and natural scientists have tried to appreciate how we make preferences, using different strategies. Since the 90s, groups of inter - related scholars have begun to combine social and natural scientific approaches to study preference in an emerging discipline called '**Neuromanageerial Management**'. Assumption is that by combining theoretical and empirical tools from neuromanageerial science, psychology and management into a single approach, resulting synthesis will offer insights valuable to all three-parent disciplines. Studies seem to support that conclusion. Theories have begun to restructure neuromanageerial appreciating of preference-making, and findings suggest constraints on theoretical models developed in management and psychological domains.

At a lower level of reduction, psychologists studying mechanisms of judgement and preference seek to appreciate mental constructs that guide preference making at process-based level of analysis. Mental processes form algorithmic components of psychological models of preference. These models seek not just to predict comportment but capture accurately mental events that precede preference. As such, they are complicated that management models. Although this convolution often makes them more realistic it does so at a cost, because these models are hard to test completely. At a yet lower level of reduction, neuromanageerial researchers have been trying to appreciate neural pathways and computations that give rise to preference - making comportment. These scientists have sought to appreciate, at a physical level, how it is that the brain achieves preference by studying computational architecture of the brain. Of course, challenge is one of scale. Appreciating how preferences are made simply by tracing neural pathways has constrained studying simple preferences.

Judgement is a calculated progression that marks commitment to an uncompromising intention. There are two 'forces', upon balancing of which entirety functions. They are 'positive' and 'negative' powers of nature, or 'subjective' and 'objective' sides of experience. There are two sides: one, which 'receives' and another which is 'received'. Judgement neuroscience offers a novel approach to study of individual and interactive judgement making by combining methods of emotional experiments, functional neuroimaging and formal models. Despite extensive research, researchers still do not know exactly how brain works and what it hides in its darkest corners. What is our brain capable of? In addition, as humanity's reliance on technology and computers grows stronger, can progress make brains weaker? How do cogent and practical managers make (better) business judgements? How can effective cogent and practical managers change judgement attitudes? What determinants act and interact to produce comportment? What are they good at in the environments? How do they work and how brain does implement them? How does this implementation constrain comportment? Can cogent and practical managers separate contributions of each for business judgement making? Can players replace principled notion of 'au fait consent'? What are the 'traps' that prevent from making best business judgements? How to set priorities, generate alternatives and evaluate alternatives in order to choose the best? What information is desired to help make the finest judgement-making process? What are the effective styles in business judgement making framework? Finally, concern of mind - brain relationship needs to be investigated.

In light of discussing theories and applications in business judgement, it is important to decide on techniques being used. Can we modulate comportment affecting brain? How to resolve reservations with need for business judgement? What are the constituent processes underlying cogent and practical managerial efficacy task performance? Are different cogent and practical managerial efficacy's uniquely linked to different brain regions? How do changes in brain efficacy contribute to changes in cogent and practical managerial efficacy? Risk and return; are they related? What are cogent and practical managerial efficacy issues? Can risk be managed? Is it possible to identify risk-prone and risk-averse persons? How cogent and practical managers do choose risky prospects? Do cogent and practical managers use judgement aids when working with risk estimations? What symptoms of cogent and practical managerial efficacy issues find it hard to figure out how to get started on a task? Should management be concerned with such notions at all? Which courses of action are under consideration in business judgement set? How do rules and analogies feature? If the two business judgement problems are clearly described, how can we predict which will be more difficult. How do they affect probability as well as just judgements? Do groups make business judgements that are fundamentally different from individuals? Do groups make better business judgements? Which should we choose? What are the alternatives to consequentialist models of business judgement processes? Should these concerns be of interest to explore? Proposition builds strongly on prescriptive review on business judgement making. Descriptive view focuses on how business judgements are essentially made. Attempt (perhaps) contributes towards providing a conceptual review framework for appreciating intersection of neuroscience, management and psychology. This is to offer through review of brain activity at time of cogent and practical managerial judgement making, describe standard brain - based models capable of envisaging observed cogent and practical managerial comportment. These include exploring anatomy of neuro - discourses to functions of 'neuro - biologism'.

Ordinary life is full of preferences and preferences. An important concern for many researchers is how people make (management) preferences. Specifically, researchers are interested in the assumptions, beliefs, habits, and tactics that people use to make everyday preferences. Research suggests that brain considers various sources of information before making a preference. Traditional approach is to compare judgement or a preference to a standard or 'benchmark.' The comparison enables evaluation of whether a particular judgement is 'good' or 'bad' relative to the standard. Normative models which offer standards are important because clear sets of rules or axioms, such as those derived from comportment economics (expected utility theory) can be used to test predictions about human comportment. When comportment deviates from the predictions of normative models attempts can be made to ascertain why and, often, techniques for overcoming such biases. This approach with its focus on deviations from normative models contrasts the ideal of a homo comportment economics with the apparent reality of a cognitive miser (or even loser) and has been enormously influential and useful. However, how does it do this? In addition, why does the process sometimes go awry, causing impulsive, indecisive, and confused preferences; that lead to perilous and potentially dangerous comportments? Human comportment is not the product of a single process, but rather reflects interaction of different specialized subsystems. These systems usually interact seamlessly to determine comportment, but at times, they compete. Result is that brain sometimes argues with itself, as these distinct systems come to different conclusions about what we should do. Human comportment is not under constant and detailed control of careful and accurate hedonic calculations. It is product of an unstable and irrational and practical complex of reflex actions, impulses, instincts and habits. The bottom concern is; *How to model the judgement-making process?*

Cogent and practical managerial efficacy is cognitive capacity necessary to manage judgement, sentiment and procedures. It refers to high-level cognitive skill to manage and direct cognitive ability and comportments. This study was designed to help appreciate what effective cogent and practical managers really do. Study examines personage difference in conjecture of psyche and cogent and practical managerial functions to explain variation in severity of efficacy symptoms that account for inconsistency in comportments symptoms. This model consists of continuum ranging from quantity - oriented cogent and practical manager (observed to display significant activities and performance) to quality - oriented traditional cogent and practical manager (observed to exhibit interface with outsiders, controlling and planning activities and perceived to have quality performance). This descriptive model helps identify needed cogent and practical managerial activities and skills for quantity and quality performance in today's organisations. These findings are discussed in terms of a proposed distinction between aspects of model of mind and related executive control skills.

Key Words: Brain Maneuvers, Cogent Efficacy, Cognitive Capacity and Managerial Judgement Skills.

Introduction

*'It takes three to tango':
Brain, cognition and cogent and practical managerial enhancement
..... Pérez-Centeno, Víctor*

Every person is a cogent and practical manager. Cogent and practical managership is a occupied assertiveness, a approach of thinking, a concrete everyday practice and increasingly an identity marker for ways of being and living within liquid modernity. Cogent and practical managership is nowadays a broadly endorsed and accepted signifier for forms of organising that targets human, organisational, and economic renewal and growth. Organisational neuro - cogent and practical managership is an emerging field in management and organisational psychology that studies the role of brain in workplace comportment. The aim is to investigate how neurocogent and practical managership and its methodological toolkit advance theory and research in organisational comportment. Cogent and practical managership is unique and stimulating humanoid endeavour. Conjecture of brain is propensity to characteristic mental states; attitude, intents, requirements, pretends comprehension, etc. to oneself and others furthermore to appreciate that others have beliefs, desires, intentions and perspectives that are dissimilar from one's own. Conjecture of brain is a surmise insofar as the brain is not directly evident. The supposition that others have brain is termed a conjecture as each human can barely perceive subsistence of his / her own brain through mediation. No one has unswerving admittance to brain of another. It is characteristically implicit that others have brains by parallel with one's own. This assumption is based on shared nature of interface, efficacies and perceptive of others sentiment and dealings.

Preference research has been influenced by homo comportment economics metaphor with emphasis on normative models and deviations from predictions of those models. In contrast, principal metaphor of cognitive psychology conceptualizes humans as 'information processors'. Pollination between the two areas is important. A wide range of models and metaphors has been proposed to explain and describe 'preference making in ingenious ways. This encourages cross-fertilization between cognitive psychology and preference research by providing an overview of current perspectives that continues to highlight benefits of synergistic approach: cognitive modelling of multi-attribute preference making. Expansion of neuromanagement management parallels development of cognitive science. Neuromanagement management has bridged contrasting fields of management and psychology. Management, psychology and neuromanagement science converge into a single, unified discipline with ultimate aim of providing single, general theory of human comportment. This is the field in which consilience operates. Researchers and psychologists offer conceptual tools for appreciating and modelling comportment. Neuromanagement researchers offer tools for the study of mechanism. The goal is to appreciate processes that connect sensation and action by revealing neuromanagement mechanisms by which preferences are made.

Humans share an organisational sphere and it is possible for people on one side of the world to cause huge harm to others' judgement processes on other side. Fissure amongst judiciousness - based scrutiny that adopts utility-maximizing proxies and real anthropological comportment has been acknowledged in economics, psychology and other social sciences. In recent years, there has been developing attention in shepherding comportmental exploration across sub - areas to address this gap. In one direction, some control perceptions on judgement making. In the other, computational tools help gain appreciating comportment to learn about comportment models from user - generated data. Entrepreneurs have unique approach to judgement making, deal with high uncertainty, ambiguity, time pressure and emotional stress. Making cogent tactical judgements is a management action. Traditional management relies on revealed preferences to appreciate desires of individuals and predict an action adds observation of underlying circuits leading to judgements. Neuroimaging has transitioned from mapping confined effects to evolving extrapolative models of perceptual events that assimilate data scattered across brain structures. Neuromanagement is a fledgling discipline investigating role of brain for judgement making in management perspective by using neuro - tactical signatures (hereafter, NTS) to build models that explain and predict circuit of comportment. It aims to investigate how brain behaves in circuit of higher cognitive functions. Research reveals neural basis of judgement based on NTS links to management activity. By modeling NTS, it is possible to provide for predilections that form representation of

preferences. This opens direction for experimental investigation in NTS management. NTS management models rely on judgement makers' utility functions satisfying well - defined axioms. Though these account for observed comportment, anomalies are identified in state of uncertainty circuits. Issue is how to optimise judgement making?

Having conjecture of brain allow one to element judgement, requirements and intention to others, forecast or elucidate actions and hypothesise intentions. As initially distinct, it enables to value that psychological state can be root of, explicate and calculate comportment of others. Being able to feature mental states and perceptive them as cause of comportment implies that the brain as an author of representation. If a cogent and practical manager does not have conjecture of brain, it may be a symptom of cognitive or developmental mutilation. Existing deliberations have ancestry in cogent and practical debate (Descartes' Second Meditation) that set basis for making allowance for discipline of brain dynamics. Familiar divergent approach in philosophical journalism, to conjecture of brain is conjecture-conjecture and simulation - conjecture. Conjecture-theorist envisions absolute conjecture to cogent and practical about others' brains. Conjecture is developed mechanically and instinctively, though instantiated interactions. It is intimately associated perception that quality mind, actions, effectiveness, properties, realization and link to corporeal body (brain). Mind - body rapport dilemma is generally seen as key concern in philosophy of mind.

Cogent and practical managerial efficacy (cognitive influence and cogent and practical managerial - attention organism) is umbrella term for management (regulation, power) of cognitive processes. Cogent and practical managerial scheme is a theorised cognitive structure that directs cognitive processes. Prefrontal areas of frontal lobe are necessary but not solely sufficient for hauling out this efficacy. Conventionally, cogent and practical managerial efficacy has been synchronised by prefrontal regions of frontal lobes. Nevertheless it is a matter of unending contest. Frontal and non-frontal regions are essential for integral efficacy. Probably, frontal lobes need to play a part in fundamentally the whole efficacy. Cogent and practical managerial system is ideated to be profoundly drawn in handling situations exterior domain of mechanical processes that explain imitation of set comportments; those that engross scheduling or 'managvation' oriented judgement - making, those involve inaccuracy rectification, where response are not well-rehearsed, in principle tricky situations and that necessitate overcoming of tough response.

Reviews of Works

New brain imaging technologies have motivated neuromanagement studies of internal order of the mind and its links within spectrum of human managerial choices from managerial choice making among fixed gambles to managerial choice making mediated by market and other institutional rules. We are only at the beginning of the enterprise, but its promise suggests a fundamental change in how we think, observe and model managerial choice in all its contexts.
..... Vernon Smith

Technovation (technovation + 'managvation') is a crucial factor for survival and competitive strength of organizations. For manufacturing units, technovations of the product system and of the processes generating these products are essential. Majority of literature focuses either on product technovation or on process technovation. Referring to the convolution and inherent dynamics of industrial technovation process judgement-making in technovation management is a challenging job. In addition to numerous interactions with the environment, convolution of technovation processes in manufacturing units results from interactions between product and process technovation. This paper provides modeling dynamics of technovation processes reflecting the interdependencies of the product-process technovation system. The model gives an insight into the dynamic consequences of actions in technovation management and allows testing different technovation strategies. Conclusions concerning the implementation of product and process technovations in manufacturing units are drawn (Satpathy; 2008).

Business 'managvation' models represent a multi-dimensional phenomenon which spans across various units, functions and processes of organisations (DaSilva and Trkman, 2013; Baden-Fuller, 2010). Concurrent research on 'managvation' reflects this multi-dimensional nature and investigates 'managvation' business models from different viewpoints in separate streams which so far fail to converge into a common appreciating of 'managvation' (George, and Bock, 2011). While scholars operational and practical 'managvation' - business models as system-level unit of analysis to appreciate how firms create and deliver value to gain 'managvation' competitive advantage (Teece, 2010), studies in 'managvation' management field focus more on role of business models for bringing new products, 'managvation' and technologies to

markets (Spieth, Schneckenberg and Ricart, 2014; Zott, Amit and Massa, 2011). At the same time, cogent and practical managers struggle to efficiently develop and implement new business models in corporate practice (Chesbrough, 2012). In short, topic of business 'managvation' models is both important for research and practice, and it offers range of avenues for further 'managvation' research which conceptualises and integrates its key components of 'managvation' into a common framework.

Goal of Neuromanerial management is to combine approaches into a discipline that employs constraints and to inspire analysis. Combination has been largely restricted to combining neuromanerial science, psychology and management to organise biological insights into a unified conceptual framework. Expected Utility or Neuromanerial Game Theory define computational goal of neural architecture for preference-making. Neuromanerial insights into algorithms by which preference is accomplished can be expected to serve as constraints. While nearly all neuromanerial researchers recognise impact management theory has had on biological studies of preference, mainstream researchers doubt that the second stage will (or even should) occur. Social scientists doubt, in a general way, that reductive program of the natural sciences can be extended to social sciences. During the past two decades, empirical studies of managerial preferences in which uncertainty, inconsistency and incomplete information are present have produced rich findings. Since late 90s, inter - related scholars have combined social and natural scientific approaches to study of preference making into 'Neuromanerial management'. In 1998 less than 20 papers a year were published that included 'brain' and 'preference-making' as keywords. In 2008, nearly 200 articles bearing those keywords have been published. Central assumption is that by combining both theoretical and empirical tools into a single approach, resulting synthesis offers valuable insights. Theories have begun to restructure neuromanerial appreciating of preference - making and neuromanerial biological findings are beginning to suggest constraints on theoretical models of preference making developed in management and psychological domains.

Probably the first paper to combine neuromanerial scientific data and rigorous mathematical theory was Shizgal and Kent Conover (1996) review in 'On Neural Computation of Utility'. The paper sought to describe neuromanerial biological substrate for preference making using normative theory. In 1999 this was followed by Platt and Glimcher's publication of 'Neural correlates of preference variables in parietal cortex' which argued that: 'Neuromanerial researchers have begun to focus increasingly on study of sensory-motor processing, but many describe these processes remain rooted in classic reflex' and went on to 'describe a formal management-mathematical approach for physiological study of sensory-motor process, or preference-making'. This paper was rapidly followed by papers uniting management and psychological theories of preference making with measurements in human brains. Kahneman employed psychological Prospect Theory of Preference Making via brain scanning experiment. The experiment revealed that brain activation in ventral striatum matched predicted subjective valuations. The second reflected collaboration between McCabe and Smith. This represented use of game theory in human experimental data. Critical insight that these papers offered was evidence that preference - making systems of brain can be viewed as fundamentally two-part system. Areas in frontal cortex and basal ganglia form first of these two parts. These areas learn and compute values of available actions and it is as a set of valuation structures that these areas principally contribute to preference-making. Outputs passed to fronto-parietal circuits that actually 'decide' between options based on these antecedent valuations and pass these preferences to motor system for execution. Subsequent studies have largely supported segregation of neural architecture into valuation and preference making systems. Levels of interconnection between these two are being explored (Wikipedia; 2019).

Forty years ago Neisser (1967) introduced the idea that intelligent organism operate in a perception-action cycle: the senses take in information from the environment, the mind / brain performs computations on that information and the outputs of those computations are used to channel subsequent goal-directed actions. A key facet of this 'information processing' metaphor is that biological organisms are capacity limited; there is a limit on how much information can be processed and thus the organism needs to be selective in what it attends to in the environment i.e., information taken in via the senses. In general, study of preference has been partitioned into three main approaches. For most researchers, goal of studying human preference comportment is prediction. These scientists seek to develop formal mathematical models, typically based on rigorous axiomatic foundation, which can predict preferences humans do, or should, make. These models typically take as inputs state of external world and generate as outputs actual preferences made by human choosers. For a mainstream researcher, a model is useful if it makes accurate predictions; whether or not the algorithm it employs mimics the actual process of preference - making is irrelevant to accomplishing this end. For this reason,

management studies of preference - making can be viewed as aimed towards achieving both; compact and abstract models of preference possible. The yield is high-level, and often normative, theories that state testable neuromanagement hypotheses.

Human performance has been subject of active research from several perspectives. Neuromanagement management explains human preference-making, ability to process multiple alternatives and choose an optimal course of action. It studies how management comportment shape appreciating of brain and guide models of management via. Neuromanagement science, neuromanagement management, cognitive and organisational psychology. As research in preference - making comportment becomes computational, it integrates approaches from theoretical biology, computer scholarship and arithmetic. Neuromanagement management adds by using methods in comportment and neural mechanisms. By using tools from various fields, Neuromanagement management offers an integrative way of appreciating preference making. If further proof were needed, neuromanagement management offers evidence to explain preference-making, ability to process multiple alternatives and choose optimal course of action. It studies how management comportment shape appreciating of brain and guide models of neuromanagement.

Deciphering brain - environment transactions requires mechanistic appreciating of neuromanagement processes that implement value-dependent preference-making. There is a crucial difference between 'thinking about thinking' and actually enhancing brain and mental processes by developing latent potential of each individual. Theoretical accounts posit that human brain accomplishes this through series of neural computations, in which expected future reward of different preference options are compared with one another and option with highest expected value is selected. This whistle-stop tour through some of the 'facts' about the cognitive system serves to orient our thinking about what needs to be considered when we attempt to build and implement cognitive models. Given that multi-attribute judgement is 'simply' another task performed by the system, it is important that our attempts to model how it is done are embedded both theoretically and empirically in what we already know about the operation of that system. Thus some key facets to consider are: capacity limitation, distinction between automatic and controlled processing and the role that memory plays in their interaction, ability to learn, translation of cause - effect learning to the development of categorization, and regulation of cognition. In the following sections we examine some of the ways in which these facets are incorporated into the models and metaphors proposed by the contributors to this issue. If human brain is often compared with a computer, goals for biological brains are determined by need for survival in uncertain and competitive environments. How to handle brains behind businesses in age of dramatic change and growing uncertainty? What then are the coherent brain dynamics underlying prediction, control and preference-making?

Quantification of preference has been a major area of research for neuromanagement scientists. This is, in part, due to the 'Matching Law' that stipulates that relative response rate on concurrently available alternatives 'match' available relative reinforcement rates. This theoretical construct describe response allocation in complex situations. People often fail to design 'rational' preferences. Management determinants are subject to multiple biases that affect events, act upon them and learn from experience. These comportments have disastrous consequences. When faced with complex preference, individuals engage in simplifying strategies. Adaptive preference making relies on strategic simplifications of preference problems. Yet, neural mechanisms that shape these remain largely unknown. Although brain encodes specific preference factors, much less is known about how brain selects among multiple strategies for managing computational demands of complex preference - making task. Advances in brain connectivity have made it possible to identify hubs; brain's connected regions. Such regions coordinate brain functions due to their connectivity with regions with variety of specializations. Current structural and functional connectivity methods generally agree that default mode network (DMN) regions have highest comprehensive brain connectivity. Control of comportment is fundamental to human preference making. Evidence suggests a front parietal brain network implements such control across diverse contexts. Lateral prefrontal cortex (LPFC) region predict performance in high control task and exhibit high connectivity. Critically, connectivity in this region show highly selective relationship with individual differences in fluid preference making. LPFC facilitates ability to implement control processes central to human preference making. The ability to rapidly reconfigure minds to perform tasks is important for adapting to an ever-changing world. Further, it is unclear how this kind of task preparation changes. Research suggests that prefrontal cortex is essential to perform tasks (Wikipedia; 2019).

Neuromanual preference - making is as a mental process (cognitive process) resulting in selection of a course of action among alternative scenarios. Every preference - making process produces a final preference. Process must be regarded as a continuous process integrated with environment concerned with logic of preference making, rationality and invariant preference making. This reflects interaction of preference making-related regions. Specific brain systems potentiate preference makings depending on strategies, traits and context. Therefore, preference making is a reasoning or emotional process which can be rational or irrational, based on explicit assumptions or tacit assumptions. This exhibits formulation of '*neuromanual preference making paradox*'. Management have always relied on careful modelling of preference making. They are described by utility functions that represent goals and interact at (Nash) equilibrium. Discrepancies between theoretical predictions and observed comportment mismatch led researchers to developed theories of preference - making that are a better fit for neuromanual data than traditional models. Methodology consists in building models to demonstrate relationship between cause and neuromanual anomaly.

Cogent and practical managers both respond to and help to create 'managvation' novelty. This 'managvation' novelty may involve new artefacts and ways of doing things, but also new ways of being and working. What are the relationships between cogent and practical managerial comportments, identities and contexts? As organizations continue to move into increasingly global 'managvation' arenas, 'managvation' competitiveness reaches new levels with continuous needs to change and improve quality and efficiency while controlling costs. Oftentimes, technology is seen as a solution to realizing competitive advantage. This 'managvation' approach is predicated on ability to integrate weakest, least reliable and most unpredictable component into the system; human. Anthropoid resources management can contribute to realizing an enterprise's 'managvation' strategy. The ability to harmonize humans into socio-technological 'managvation' systems is the lynch pin to drive global 'managvation' competitiveness

From another perspective, Granovetter (1992) viewed 'managvation' activity as embedded in 'managvation' contexts and markets as institutions resulting from socially situated individuals embedded in networks of personal relations, often with a mix of non-economic and 'managvation' economic goals. This interconnectedness between 'managvation' cogent and practical manager, activities and 'managvation' context means that cogent and practical managership can be understood as a 'managvation' process, not simply as an isolated individual 'managvation' activity (Gartner, 1985; Bygrave, 1989; Bygrave and Hofer, 1991). Following from this, we can also say that 'managvation' cogent and practical managerial identity is shaped by ongoing structures of 'managvation' relations as part of certain 'managvation' contexts ('managvation' contexts) e.g. Gartner (1985); Aldrich and Zimmer (1986); Carsrud and Johnson (1989); and Anderson (2000).

In 2003, Glimcher reviewed history of neuromanual science and argued that history was striking in its lack of normative models for higher cognitive function. Glimcher proposed that management could serve as source for normative theory. Camerer, Loewenstein and Prelec published on how neuromanual science can inform management (2005) which served as a manifesto from the management side. Camerer argued that failure of traditional management to make accurate predictions reflected inattention to mechanism. Appreciating how preferences are made yield algorithmic alternatives to neoclassical theory with enhanced predictive power. Faruk Gul and Pesendorfer published in 2008 'The Case for Mindless Management'. They suggested that neuromanual biological measurements, per se, lay entirely outside province of management. Second, they argued that while reductionist approaches that seek to link mechanistic insights to larger theoretical frameworks have been successful in natural sciences, these same reductionist approaches are unlikely to be able to relate natural scientific phenomena to social scientific theory. In essence, they argued that insights into biological mechanism are unlikely to have much impact on management theory.

One potential area where comportment economics can contribute is in appreciating the dynamic processes by which the brain coordinates its diverse systems to perform new, complex tasks. This problem has received remarkably little attention in neuroscience research, although it is well-explored terrain in comportment economics. Sanfey (2006) reviewed two general ways in which neuroeconomic attempt make important contributions to research on preference-making. First, incorporation into neuroscience and psychology of formal, rigorous economic modeling approach, and second, awareness within the economic community of evidence for multiple systems involved inpreference-making.

Current challenge is to ensure that researchers are communicating productively; often, terms such as 'preference', 'judgement' and 'preference' are used in different ways by different fields.

Due to the breakthrough of the neural network technology, there has been an increasing amount of neural network application research. Classification of publications reveals that a large amount of research has been published in the last five years. Researches by Raju S. Bapi, V. S. Chandrasekhar Pammi, K. P. Miyapuram centre around Cognitive and Computational Neuroscience perspective. Studies by Satpathy (20011-2014) centre around Issues in Neuro - Management Preference Making, Inquiry into Neuro- Economic Preference Modeling, Neuro - Preference Computational Modeling, Neuro Based Challenges, Neuro Management Perspective, Neuro - Perspectives in Sustainable Progression, Cognitive 'Paths' in Techno - Managerial Continuum, Explorations in Neuro - Preference Making, Paradigm Tectonics in Neuro - Preference Making, Reflections On Neuropsychological - Preference Making, Anthology on Managerial Neuro - Preference VUCA Architecture, Managerial Neuro - Preference Mechanism, Theoretical Challenges In Neuro - Preference Making and Paradoxical Issues in Neuromanagement of Preference - Making.

Key Concerns

Neuroscience is by far the most exciting branch of science because the brain is the most fascinating object in the universe. Every human brain is different - the brain makes each human unique and defines who he or she is.
Stanley B. Prusiner

Neurocogent and practical managership incorporates the interior characteristics of the cogent and practical managers to study neural basis of 'managvation'. Neurocogent and practical managership provides deeper appreciating of how they make their own 'managvation' oriented judgements, and how others decide. Are we hard-wired to be risk-averse or risk-seeking? How is a 'fair 'managvation' oriented judgement' evaluated by the brain? Is it possible today to predict the purchasing intentions? Can we modulate economic comportment affecting the brain? Effective management is a result of persistent efforts in multiple dimensions be it the formulation of strategies or the smooth functioning of day-to-day activities. The convolution in management partially arises due to how organisations juggle between the efforts that focus on long-term objectives and handling daily nitty-gritty. In order to ensure effective functioning of organisations, it becomes extremely important for organisations to invest time and effort in developing cogent and practical managerial competencies. A structured effort in this direction would not only lead to formulating successful organisational strategies but would also ensure proper execution of day to day operations (ASCI; Hyderabad).

Risk management and 'managvation' oriented judgement theory is a hopeful matrimony linking two completely significant characters of mind-boggling heredity. 'Managvation' oriented judgement presumption is conjecture about 'managvation' oriented judgements. The subject is not amalgamated one. To the converse, there are many diverse ways to conceive about 'managvation' oriented judgements with dissimilar traditions. To theorize about 'managvation' oriented judgements is approximately the same as to theorize about human activities. How to resolve reservations with need for 'managvation' oriented judgement, recalling that 'managvation' oriented judgement not to act in anticipation of more information is still an 'managvation' oriented judgement? Risk psychoanalysis and numerical 'managvation' oriented judgement supposition can make available various strategies. Capability bearings are inevitable part of individual activities with daily life being a sequence of capability bearings. Distinctively, researchers are interested in conventions, beliefs, conducts and strategies to make capability bearings. Any iteration of capability as an anthropological endeavour would need explanation of substrates, mechanisms and variable effects of emotional influence upon cogent and practical functions operative in capability bearing-making processes relevant and relative to ecological resources. Cognition considers sources of data before capability bearing. Nonetheless, how does it do this? Why does process sometimes go awry, causing impulsive, indecisive and confused capability bearings that lead to potentially dangerous comportments? Competence convolution - oriented neuro - cogent and practical managerial capability bearing making offers tools for modeling comportment. With different disciplines approaching through characteristically different techniques and substantial advances, concern of how we design and how we have to craft judgements / capability bearings has engaged for decades. This chapter analyses neural bases of capability bearing predictability and value, parameters in Capability of expected utility. Competence - multiple - systems approach to capability bearing - making, in turn, influences Capability, a perspective strongly rooted in organisational psychology and competence cogent

and practical managership. Integration of these offers exciting potential for construction of near - accurate models of capability bearing - making.

"How can a three-pound mass of jelly that you can hold in your palm imagine angels, contemplate the meaning of infinity, and even question its own place in the cosmos? Especially awe inspiring is the fact that any single brain, including yours, is made up of atoms that were forged in the hearts of countless, far-flung stars billions of years ago. These particles drifted for eons and light-years until gravity and change brought them together here, now. These atoms now form a conglomerate- your brain- that can not only ponder the very stars that gave it birth but can also think about its own ability to think and wonder about its own ability to wonder. With the arrival of humans, it has been said, the universe has suddenly become conscious of itself. This, truly, is the greatest mystery of all."

— V.S. Ramachandran,

Some key research issues in this context are; what are the constituent processes underlying cogent and practical managerial efficacy task performance? Are different cogent and practical managerial efficacy's uniquely linked to different brain regions? How do changes in brain efficacy contribute to changes in cogent and practical managerial efficacy? Risk and return - are they related? What are cogent and practical managerial efficacy issues? Can risk be managed? Is it possible to identify risk-prone and risk-averse persons? What diagnosed? What How cogent and practical managers do chose risky prospects? Do cogent and practical managers use any computer-based 'managvation' oriented judgement aids when working with risk estimations and/or 'managvation' oriented judgement problems? What symptoms of cogent and practical managerial Efficacy Issues Finds it hard to figure out how to get started on a task. Can focus on small details or the overall scenario, but not both at the same time? Has trouble figuring out how much time task requires. Does things either quickly and messily or slowly and incompletely. Finds it hard to incorporate feedback into work or an activity. Sticks with a plan, even when it's clear that the plan isn't working. Has trouble paying attention and is easily distracted. Loses a train of thought when interrupted. Needs to be told the directions many times. Has trouble making 'managvation' oriented judgements? Has a tough time switching gears from one activity to another. Doesn't always have the words to explain something in detail. Needs help processing what something feels/sounds/looks like. Isn't able to think about or do more than one thing at a time.

Neuro - Perception

New brain imaging technologies have motivated neuro - cogent and practical managerial studies of the internal order of the mind and its links with the spectrum of human 'managvation' oriented judgements from 'managvation' oriented judgement making among fixed gambles to 'managvation' oriented judgement making mediated by market and other institutional rules. We are only at the beginning of the enterprise, but its promise suggests a fundamental change in how we think, observe and model 'managvation' oriented judgement in all its contexts
..... (Smith; 2002).

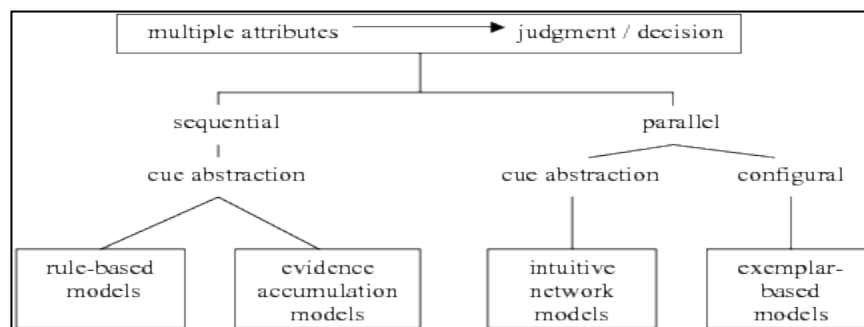
Capability bearings are inevitable part of cogent and practical managerial activities. Making cogent strategic preferences is a cogent and practical managerial action. Cogent and practical manager plays substantial role in gainful advance with initiative, skill and motivation to express and execute. Any iteration of capability, as an anthropological endeavour, would need some explanation of substrates, mechanisms and variable effects. Exploration on cogent and practical managerial neuro - oriented judgement has extended from neuro - oriented comportment to cogent and practical approach with focus on processes that ensue prior to response. Any prototype, in convolution continuum, accounts for verdicts that aid neuro - oriented 'deciding to decide', 'choosing to choose', 'deciding to choose' and 'choosing to decide'. These are 'bordered boundaries' wherein cogent and practical manager has to arrive at optimal judgement. Cogent and practical managers make judgements that involve optimising trade - offs to weigh merits and demerits of all alternatives. There are unresolved problems in state of convolution. Issue is how to optimize judgement-making in convolution arena? In this chapter, cogent and practical neurocogent and practical managership techniques have been incorporated to explain neural basis of cogent strategic preference - making and examine processes in cogent and practical manager's brain. Chapter emphasises on neuro - ophthalmic' perspectives to appreciate how eye movements articulate preference making regardless of vicissitudes.

How cogent and practical managerial 'managvation' is oriented judgement making processes carried out in brain? Do we interpret research findings when neurocogent and practical managerial logical results conflict? Knowing how brain is

working explains little about what mind produces; what we think, what we believe and how we craft 'managvation' oriented judgements. What are the general implications of neurocogent and practical managerial management? Neurocogent and practical managerial techniques permit to look inside brain while it experiences outcomes and crafts 'managvation' oriented judgements to examine implications. Central argument is that 'managvation' oriented judgement - making is at core of cogent and practical managerial functions and future of any organisation lies on vital 'managvation' oriented judgements made. 'Managvation' oriented judgement usually involves three steps: recognition of a need, dissatisfaction within oneself (void or need), 'managvation' oriented judgement to change (fill void or need) and conscious dedication to implement the 'managvation' oriented judgement. However, certain critical issues coupled with factors such as uncertainties, multiple objectives, interactive convolution and anxiety make 'managvation' oriented judgement making process difficult. At times when making a 'managvation' oriented judgement is complex or interests are at stake, and then need for strategic 'managvation' oriented judgement - making arises. Management is influenced by multiple-systems approach to 'managvation' oriented judgement-making, a perspective strongly rooted in psychology and neurocogent and practical managerial cogent and practical managership. The integration of these disparate methodologies offers exciting potential for construction of models of 'managvation' oriented judgement-making (Satpathy: 2012).

Concerns that need to be answered (Satpathy: 2012) include; how to choose in tough situations where stakes are high and there are multiple conflicting objectives? How should Cogent and practical managers' plan? How can we deal with risks and uncertainties involved in an 'managvation' oriented judgement? How can we create options that are better than the ones originally available? How can we become better 'managvation' oriented judgement makers? What resources will be invested in 'managvation' oriented judgement - making? What are the potential responses to a particular problem or opportunity? Who will make this 'managvation' oriented judgement? Every prospective action has strengths and weaknesses; how should they be evaluated? How will they decide? Which of the things that could happen would happen? 'Managvation' oriented judgement has been made. How can we ensure it will be carried out? These are the concerns neurocogent and practical managerial researchers suspect are most crucial for appreciating complex human comportments.

'Managvation' - Oriented Judgement



Relational Model

Preference making is one of the simplest act of human comportment mainly because in a days' time a person takes minimum a hundred preferences big and small; Impactful preferences those have influence on a large number of situations, time, people and resources need a thoughtful mind, capacity to appreciate the dynamics between seemingly unrelated variables and a high level of intellect and of course positive intentions. However, most of the day to day preferences are routine, short term and in general are not considered preferences at all. Cogent and practical managerial preferences specifically strategic preferences need systems thinking approach, a macro perspective, a kind of philosophical/spiritual detachment and a higher level thinking pattern where preferences have a higher order purpose and is beyond the personal / professional needs of individuals. It happens at the neuro level which means quite to a large extent it is beyond the control of individual manipulative comportment. Thus, high level preferences are expected from individuals those have professional personal maturity, integrity and the competence needed to see things beyond their life time. What we refer to as 'big scenario'. A high level preference making capability thus requires the capacity to process a fairly large amount of data, memory, learning, discarding /eliminating unwanted data and appropriate use of useful data

available while very well knowing that a part of data is still not available with preference makers. Thus the need to use gut feelings, emotions, intentions, become necessary to validate our thoughts and plan of action leading to concrete preferences and confidence in those preferences as well. Various parameters; tangible and intangible aspects have to be cognitively processed in order to arrive at robust a preference which affects large number of stakeholders.

How do cogent and practical managers make preferences? The dominant paradigm in empirical and theory work in cogent and practical managership is to assume that cogent and practical manager preferences are made by fully cogent and practical 'managvation' oriented judgement-makers. These models often assume cogent and practical managers seek to maximize the present value of current and future earnings, solve a dynamic optimization problem, and play a Bayesian Nash Equilibrium. An increasing amount of research, however, has documented that these (and other) standard assumptions are often violated. In their place, several formal models of alternative assumptions have been developed and tested (SSRN abstract; 2011559). 'Managvation' oriented judgement-making is regarded as cognitive scheme resulting in selection of belief or course of action in the middle of a number of substitute potential. Every 'managvation' oriented judgement-making process produces a final preference that may or may not prompt action. 'Managvation' oriented judgement-making is the study of identifying and choosing alternatives based on the values and preferences of the 'managvation' oriented judgement maker. 'Managvation' oriented judgement-making is one of the central activities of management and is a huge part of any process of implementation.

Organisations of today are in great need of improving their skills when it comes to 'managvation' oriented judgement making, and especially the designing of 'managvation' oriented judgements. By the designing of 'managvation' oriented judgements is meant the preparatory stages of 'managvation' oriented judgement making (Nutt; 1984). It is argued that the design of 'managvation' oriented judgements is a process that in many ways is shaped by factors such as identities, values, and influences. The task of the 'managvation' oriented judgement maker tends to be reduced to a preference between ready-made alternatives. To be able to appreciate how these factors impact organisational 'managvation' oriented judgements, the focus must be set on the management level. It is the management that shoulders the chief responsibility for designing collective actions, such as 'managvation' oriented judgements. Our propositions indicate that the following measures must be taken in order to improve the quality of organisational 'managvation' oriented judgements (Selart; 2014):

- Uniqueness of individuals occupied in 'managvation' oriented judgement making, affects value of 'managvation' oriented judgements and should be taken into explanation in plan of 'managvation' oriented judgements.
- 'Managvation' oriented judgement maker or designer of 'managvation' oriented judgements is supposed to fit into place members to craft a collective mental scenario.
- Getting members to articulate and carve up general values should perk up 'managvation' oriented judgement making process.

'Managvation' oriented judgement-making can also be regarded as a problem-solving activity terminated by a solution deemed to be satisfactory. It is, therefore, a reasoning or emotional process which can be cogent and practical or irrational and practical and can be based on explicit assumptions or tacit assumptions. Cogent and practical preference theory encompasses the notion that people try to maximize benefits while minimizing costs.

Human performance with regard to 'managvation' oriented judgements has been the subject of active research from several perspectives:

- Psychological: exploratory individual 'managvation' oriented judgements in framework of a set of needs, preferences and values the individual has or seeks.
- Cognitive: 'managvation' oriented judgement-making process regarded as a continuous process integrated in communication with the environment.
- Normative: the analysis of individual 'managvation' oriented judgements concerned with the logic of 'managvation' oriented judgement-making and judiciousness and the invariant preference it leads to.

Convolution - Orientation: Cogent and practical managers mark convolution - oriented capability bearing in complex situations. This marker has alternatives and must choose best alternative (optimised combination). When made, events

may have occurred (maker has no control). Each (combination) of alternatives result in some quantifiable significance. Diverse preference orderings and capability bearings possibly surface depending on which cognition paths are activated. This conceivably contradicts convolution - oriented neuro - cogent and practical managerial postulate that one complete preference ordering provides sufficient data to predict capability bearing and comportment.

Consistency properties are internal to convolution bearing that describes comportment. There are four requirements for cogent and practical component of convolution bearing. It must be capable of filling need for personal level explanation of causes of bearing. Second, it must provide intentional explanation. Third, it should be capable of linking convolution - oriented cogent and practical managerial capability. And, finally, it must relate philosophically to broader disciplinary concerns including competence physiology and operons. Samuelson's 'revealed preference formulation' is scientifically more respectable to explain comportment. Sen (2002) identifies 'internal consistency' approach and 'self-interest pursuit' approach by finding regularities in observed comportment that assess consistency. In order to predict convolution bearings, cogent and practical managers are consistent by checking whether determinants' do or do not violate certain axioms of revealed preference. Added approach is 'self-interest pursuit' approach, represented by complete preference ordering in coherent matrix. 'Cogent and practical' comportment provides basis for application of utility theory in coherent analysis that represents chooser's preferences and explains how preferences determine convolution bearings. Convolution bearing, based on 'menu-dependence', may modify attitude towards changing preference ordering.

How is managerial preference making processes carried out in brain? Do we interpret research findings when neuromanagement logical results conflict? Knowing how brain is working explains little about what mind produces; what we think, what we believe and how we craft preferences. What are the general implications of neuromanagement management? The concern of explicit intervention raises the perennial favourite issue in cognitive science; what about the homunculus? Who or what structure decides how to decide? Can we describe meta-rules or criteria which select or determine the actual information processing (strategy or evidence threshold or similarity functions) that is used in a specific preference situation? Unfortunately, cognitive models tend to become less specific and process descriptions become more anthropomorphic when higher order process like these are concerned. Some issues that surge out of the above are;

- What are the biological underpinnings of above interactions?
- What biological models capture capability bearing-making?
- What computational mechanisms allow the dynamics of mechanisms?

Focal point is to appreciate;

- Neural processes underlying how cogent and practical managers craft capability bearings ,
- Appreciate mechanisms of competence imaging methodologies, and
- Integrating inter - related chapter towards capability bearing cogent and practical managership.

Concerns that need to be answered include; how to choose in tough situations where stakes are high and there are multiple conflicting objectives? How should Managers' plan? How can we deal with risks and uncertainties involved in a preference? How can we create options that are better than the ones originally available? How can we become better preference makers? What resources will be invested in preference - making? What are the potential responses to a particular problem or opportunity? Who will make this preference? Every prospective action has strengths and weaknesses; how should they be evaluated? How will they decide? Which of the things that could happen would happen? The preference has been made. How can we ensure it will be carried out? These are the concerns neuromanagement researchers suspect are most crucial for appreciating complex human comportments.

Problem Analysis

- Analyze performance, what should the results be against what they actually are.

- Problems are merely deviations from performance standards.
- Problem must be precisely identified and described.
- Problems are caused by a change from a distinctive feature.
- Something can always be used to distinguish between what has and hasn't been affected by a cause.
- Causes to problems can be deducted from relevant changes found in analyzing the problem.
- Most likely cause to a problem is the one that exactly explains all the facts.

'managvation' Oriented Judgement

- Objectives must first be established.
- Objectives must be classified and placed in order of importance.
- Alternative actions must be developed.
- The alternative must be evaluated against all the objectives.
- The alternative that is able to achieve all the objectives is the tentative 'managvation' oriented judgement.
- The tentative 'managvation' oriented judgement is evaluated for more possible consequences.
- The decisive actions are taken, and additional actions are taken to prevent any adverse consequences from becoming problems and starting both systems (problem analysis and 'managvation' oriented judgement-making) all over again.
- There are steps that are generally followed that result in a 'managvation' oriented judgement model that can be used to determine an optimal production plan.
- In a situation featuring conflict, role-playing may be helpful for predicting 'managvation' oriented judgements to be made by involved parties.

Future Roadway

Cogent and practical managers have a rather unique approach to judgement making due to their innate or learned (Alvarez and Barney, 2004) capacity to deal with high uncertainty and ambiguity. Possible concerns could be:

- What are the underlying cognitive mechanisms of cogent and practical managerial judgements and effectiveness?
- What is the role of emotions, trust and fairness in cogent and practical managerial judgement-making?
- How do cogent and practical managerial cognitive aspects influence (or are influenced by) the environmental context?
- What are the links between cogent and practical managership and negotiation?
- Which and how do personal value a priority influence firm judgement making and out-comes?
- What is the role of negotiation and conflict management in fostering creativity and in-novation?
- How do cognitive biases affect cogent and practical managers?
- Conflict management and negotiation styles in SMEs, family businesses, and start-ups.
- The role of technology in judgement making and negotiation support systems.
- How is inter - cogent and practical succession negotiated, and how are inter - cogent and practical conflicts managed?
- How does spirituality or perspicacity impact on the way judgement makers' comportments?
- What is the impact of the diversity or alignment of values in group judgement-making?
- New perspectives on cogent and practical managerial intentions models.
- What are the genetic, endocrinological or neurophysiological bases of decision preference?

Contributions

The study of preference making and problem solving has attracted attention. Expanded research requires (model - based empirical) study of behavior and offer setting for basic research on how ill-structured problems are, and can be, solved. Managerial neuromanagerial preference making, which is much less well understood than individual preference - making and problem solving, can be studied with great profit using already established methods of inquiry, especially through intensive studies.

Anticipated Gap: Previous research has demonstrated that judgements of intent were significantly related to attitudinal, normative, and affective components of preference-making. The research failed to demonstrate distinctiveness of the components by obtaining convergent and discriminant validity measures. This limitation needs to be addressed. Purpose of this research is to elucidate principles and preference - making mechanism in brain. In organisational sciences, study of preference - making is an important preliminary step to offer foundation for analysis of equilibrium. Neuromanagerial analysis has been a fruitful development in this direction. Principal aim is to model neuromanagerial preference making by using tools from Neuro - management and cognitive neuroscience. This proposal aims at, first, incorporate neuromanagerial science and psychology of management modelling approach, and second, awareness of evidences for multiple systems involved in preference-making.

Through computational approaches, attempt will be to clarify how neural circuits realize 'mental simulation' in managerial preference-making. This plan ventures to offer a model about relationship between rationality, emotions and underlying neuromanagerial underpinnings involved in preference - making. By characterizing effect of these influences, this study expects to gain insight into how brain computes models for preference-making. This work would attempt to explore phenomena through individual action, preference-making, and reasoning processes on concept of cognitive models of preference - making. Principal aim of proposed study is to model neuromanagerial basis of preference making by using tools from Neuro - management and cognitive science. Purpose is to elucidate principles and preference - making mechanism in brain interaction between variables of neuromanagerial - management preference processes. Focal point is to appreciate neural processes underlying how Managers craft preferences and preferences, appreciate mechanisms of preference - making and integrating inter - related research towards contributing to neuromanagerial preference.

Neuromanagerial management offers solution through series of measurements of brain activity at the time of preferences. It offers conceptual and philosophical framework for appreciating and conducting research at intersection of neuromanagerial science, management and psychology. Neuromanagerial management theory proposes to build brain-based models capable of predicting observed comportment. Neuromanagerial management will shed light on causes of comportment (and neuromanagerial anomalies) and help build theories capable of explaining and predicting preferences. Measurement of brain activity offers information about underlying mechanisms brain during preference processes. Neuromanagerial preference modeling would help when new information is inconsistent with goals. Combining the above disciplines gives inter - related insight to define fundamentals of neuromanagerial preference making that has eluded researchers.

Conclusion

Until now, research has not systematically integrated influence of sub - systems of brain in preference-making. Evidence suggests that preference - making depends on methodical methods to analyse relevant brain processes. Due to its multidisciplinary nature, this investigation is subject to several kinds of misconceptions. Is the Neuromanagerial management study of preference - making processes relevant for management? The debate argues that the concern is of scientific interest and tools from management theory are well adapted to address it.

While there are several benefits of using neuromanagerial techniques in appreciating preference making, there are concerns that neuromanagerial science cannot answer by itself and needs help of experimental methodology and theories to appreciate how Managers decide. The key limitation is identifying different regions of brain in certain situations (VUCA). These techniques are not able to offer an explanation or a reason (neuromanagerial) as to why we respond in the manner that we do. What happens in brain or what is activated when Managers make preferences or are in process of making preferences or responding to outcomes? It does not give insight into why we make preferences and why we

respond in the manner that we do. This is where experimental methodology would help bolster appreciating. A synergy between neuromanagement techniques and experiments offer insight into appreciating Managerial preference making.

Goal of studying human judgement comportment is prediction. This research seeks to develop theoretical models, based on axiomatic foundation, which can predict managerial judgements. These models would take as inputs state of external world and generate as outputs actual judgements made by human choosers. For this reason, research would aim towards achieving compact and abstract models of judgement. To date, management model of judgement has not been informed by the way brain functions. Analysis of observations would include not only preferences between options, per se, but additional data, including length of time taken to make judgements, number of error in judgements and psychophysical model(s).

Including more than just observed judgements allows data to have an additional disciplining effect on theory. We extend this assumption of optimal comportment to analysis of brain process producing a judgement. To do this, we assume that there is an unobservable judgement that an determinant makes, consequences of which are reflected in all observable data that can be measured in the judgement process. That judgement is strength of effort devoted to processing information in reaching a judgement between options. As a conclusion, we propose a model that joins predictions of traditional psychological observations and predictions of relative brain activation dependent on exogenous characteristics of judgement environment.

Even as it is recognised that brain (and consequent comportment) does not operate perfectly optimally, there are several reasons why these assumptions can nevertheless be valuable. First, although complex forms of comportment might not be optimal, simpler evolutionarily conserved mechanisms might prove to be closer to optimal, or at least to have been so in the environment in which they evolved. Second, an assumption of optimality can be a crucial step in development of formal model. Formal model, in turn, enables generation of precise, testable predictions about Managerial comportment. Finally, even when comportment (or neural function) turns suboptimal, defining optimal performance can provide a useful benchmark against which to compare actual comportment. Identifying ways in which comportment systematically deviates from optimality can generate new insights into underlying mechanisms.

Neuromanagement management model will play a crucial role in building of new reliable theories capable of explaining and predicting individual comportment and strategic judgements. Main message is that individual is not one coherent body. Brain is a multi-system entity and therefore judgement-maker must be modelled as an organisation. Before the modern model, organisations were modelled as individual players characterised by an input-output production function. Systematic study of interactions between determinants and judgement processes within organisations lead to novel insights. Applying similar methodology to study managerial judgement - making is the way to appreciate bounds of rationality.

Applying comports - mental biases to cogent and practical managers are an important and growing area of study. It is recommended there are several particularly promising areas for future work, which we summarize below: Theory and lab research on the impact of fairness on a broader range of cogent and practical managerial 'managvation' oriented judgements, including welfare analysis. Theory and lab research on preferences, particularly in coordination games. Research on the effect of preferences on cogent and practical managerial comportment using data from the field in order to appreciate the broader applicability of the laboratory-generated results. Research on how alternative utility functions, aside from preferences, might affect cogent and practical managerial comportment. Examples include self control, context effects, inattention, and reference dependence. Research that applies the computational and equilibrium selection advantages of alternative solution concepts such as cognitive hierarchy to help solve coordination games, in theory and in structural empirical work. Field work that examines the conditions under which we observe bounded judiciousness by cogent managers in games, including disclosure games, entry games, technology adoption games, and others. Theory and lab work on the biological basis of economic comportment, which can in turn help discipline existing theory and inspire new models. Field work on the role of overconfidence in cogent and practical manager 'managvation' oriented judgements and firm performance. Theory and (especially) field work on the consequences of mixing cogent and practical and non-cogent and practical firms. While there has been substantial progress recently, there is much more work to be done to appreciate when and how comport - mental biases apply to cogent and practical managerial 'managvation' oriented judgement-making (SSRN Abstract; 2011559). In a sense cogent and practical managership researchers can look

at organisational neuroscience from cogent and practical managerial mindset to view it as a research opportunity to exploit. Just as second entrants can benefit from lessons learned, cogent and practical managerial scholars should be aware of what scholars have already done in leadership and other areas to build on their body of knowledge. The interest in connecting cogent and practical managership with neuroscience exists, but hefty challenges remain.

In short, the research on cognitive style in psychology suggests that some styles might operate at a superordinate metacognitive level, and such metastyles will determine the flexibility with which an individual chooses the most appropriate subordinate style for a particular situation. More generally, the research suggests that it is useful to organise styles hierarchically. Such an organisation consists of dimensions that relate to lower order cognitive processing, to higher order complex cognitive skills, and to metacognitive functioning. Moreover, cognitive style can be represented in a matrix form, with its vertical dimension representing different levels of information processing and horizontal dimension representing different cognitive style families.

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