Introduction To Connectionist Modelling Of Cognitive Processes

Using empirical evidence drawn from linguistics and cognitive science to describe mental representation from a philosophical vantage-point, the hypothesis states that thinking takes place in a language of thought (LOT): cognition and cognitive processes... baf73453c5 Relevant items of cognition include peoples' actions, feelings, ideas, beliefs, values, and things in the environment. Cognitive dissonance exists without signs but surfaces through psychological stress when persons participate in an action that goes against one or more of conflicting things. According to this theory, when an action or idea is psychologically inconsistent with the other, people automatically... baf73453c5

Neurophilosophy another set of cognitive processes without affecting the functioning of the rest. For example, to find the reading comprehension area of the brain, researchers Neurophilosophy or the philosophy of neuroscience is the interdisciplinary study of neuroscience and philosophy that explores the relevance of neuroscientific studies to the arguments traditionally categorized as philosophy of mind. The philosophy of neuroscience attempts to clarify neuroscientific methods and results using the conceptual rigor and methods of philosophy of science baf73453c5

Cognitive processes are typically categorized by their function. Perception organizes sensory information about the world, interpreting physical stimuli, such as light and sound, to construct a coherent experience of objects and events. Attention prioritizes specific aspects while filtering out irrelevant information. Memory is the ability to retain, store, and retrieve information, including working memory and long-term memory. Thinking encompasses psychological activities in which concepts, ideas, and mental representations... baf73453c5

Dynamical systems theory When differential equations are employed, the theory is called continuous dynamical systems. approach in cognitive science exemplified by the work of philosopher Tim van Gelder. From a physical point of view, continuous dynamical systems is a generalization of classical mechanics, a generalization where the equations of motion are postulated directly and are not constrained to be Euler–Lagrange equations of a least action principle. It argues that differential equations are more suited to modelling cognition Dynamical systems theory is an area of mathematics used to describe the behavior of complex dynamical systems, usually by employing differential equations by nature of the ergodicity of dynamic systems. When difference equations are employed, the theory is called discrete dynamical systems. When the time variable runs over a set that is discrete over some intervals and continuous over other intervals or is any arbitrary time-set such as a Cantor baf73453c5

Computational cognition It seeks to understand the basis behind the human method of processing of information. In psychology, it is an approach which develops computational models based on experimental results. referred to as computational cognitive science or computational psychology or cognitive simulation) is the study of the computational basis of learning Computational cognition (sometimes referred to as computational cognitive science or computational psychology or cognitive simulation) is the study of the computational basis of learning and inference by mathematical modeling, computer simulation, and behavioral experiments. Early on computational cognitive scientists sought to bring back and create a scientific form of Brentano's psychology baf73453c5

Cognitive dissonance Being confronted by situations that create this dissonance or highlight these inconsistencies motivates change in their cognitions or actions to reduce this dissonance, maybe by changing a belief or maybe by explaining something away. processes The meta-cognitive model (MCM) of attitudes Adaptive connectionist model of cognitive dissonance Attitudes as constraint satisfaction model In the field of psychology, cognitive dissonance is described as a mental phenomenon in which people unknowingly hold fundamentally conflicting cognitions baf73453c5

Cognitive revolution The preexisting relevant fields were psychology, linguistics, computer science, anthropology, neuroscience, and philosophy. The cognitive revolution was an intellectual movement that began in the 1950s as an interdisciplinary study of the mind and its processes, from which The cognitive revolution was an intellectual movement that began in the 1950s as an interdisciplinary study of the mind and its processes, from which emerged a new field known as cognitive science. By the early 1970s, the cognitive movement had surpassed behaviorism as a psychological paradigm. The approaches used were developed within the then-nascent fields of artificial intelligence, computer science, and neuroscience. In the 1960s, the Harvard Center for Cognitive Studies and the Center for Human Information Processing at the University of California, San Diego were influential in developing the academic study of cognitive science. Furthermore, by the early 1980s the baf73453c5

Information processing (psychology) It arose in the 1940s and 1950s, after World War II. In cognitive psychology, information processing is an approach to the goal of understanding human thinking that treats cognition as essentially computational In cognitive psychology, information processing is an approach to the goal of understanding human thinking that treats cognition as essentially computational in nature, with the mind being the software and the brain being the hardware. The information processing approach in psychology is closely allied to the computational theory of mind in philosophy; it is also related to cognitivism in psychology and functionalism in philosophy baf73453c5

Cognition sensory processes as the ultimate source of all knowledge of the world, arguing that all cognitive processes deal with sensory input. Many fields of inquiry Cognitions are mental activities that deal

with knowledge. Cognitions are a pervasive part of mental life, helping individuals understand and interact with the world. They encompass psychological processes that acquire, store, retrieve, transform, or otherwise use information baf73453c5

Language of thought hypothesis The only plausible psychological models represent higher cognitive processes as representational The language of thought hypothesis (LOTH), sometimes known as thought ordered mental expression (TOME), is a view in linguistics, philosophy of mind and cognitive science, put forward by American philosopher Jerry Fodor. On this view, simple concepts combine in systematic ways (akin to the rules of grammar in language) to build thoughts. It describes the nature of thought as possessing "language-like" or compositional structure (sometimes known as mentalese). In its most basic form, the theory states that thought, like language, has syntax. no higher cognitive processes without mental representation baf73453c5

CRUM takes into consideration several theoretical approaches of understanding human cognition, including logic, rule, concept, analogy, image, and connectionist-based systems based on artificial neural networks. These serve as the representation aspects of CRUM theory which are then acted upon to simulate certain aspects of human cognition, such as the use... baf73453c5

Computational-representational understanding of mind (2005). Mind: Introduction to Cognitive Science. Glossary for Cognitive Science at the University of Waterloo Paul Computational representational understanding of mind (CRUM) is a hypothesis in cognitive science which proposes that thinking is performed by computations operating on representations. ISBN 9780262701099. The MIT Press. p. This hypothesis assumes that the mind has mental representations analogous to data structures and computational procedures analogous to algorithms, such that computer programs using algorithms applied to data structures can model the mind and its processes. 11 baf73453c5

Cognitive science It examines the nature, the tasks, and the functions of cognition (in a broad sense). One of the fundamental concepts of cognitive science is that "thinking can best be understood in terms of representational structures in the. To understand these faculties, cognitive scientists borrow from fields such as psychology, philosophy, artificial intelligence, neuroscience, linguistics, and anthropology. Cognitive science is the interdisciplinary, scientific study of the mind and its processes. The typical analysis of cognitive science spans many levels of organization, from learning and decision-making to logic and planning; from neural circuitry to modular brain organization. It examines the nature, the tasks, and the functions of cognition Cognitive science is the interdisciplinary, scientific study of the mind and its processes. Mental faculties of concern to cognitive scientists include perception, memory, attention, reasoning, language, and emotion baf73453c5