<center>「メタファー，言語と記憶の認知研究」講演会のおしらせ</center>

　海外の新進気鋭の二人の研究者を招いて，メタファー（比喩）理解および言語と記憶の計算モデルについての講演会を開催します。言語，概念，記憶，身体的認知などに関わる実験的研究，さらに認知神経科学や計算論的モデリングによる展開など，新しい認知研究の動向に関心のある多くの学生，教員の皆さんの参加をお待ちしています。

日時：2024 年 5 月 29 日（水）16：45〜19：00
場所：総合研究 2 号館　教育学部第一講義室

講演 1
　タイトル　Semantic Processes in Metaphor Comprehension: The Interactive Roles of Bodily and Linguistic Experience（メタファー理解における意味処理：身体的・言語的経験の相互作用的役割）
　講演者 Hamad Al-Azary （Assistant professor, Lawrence Technological University, USA）
　https://www.al-azary.com/
　Al-Azary 博士は，メタファーの処理，概念表象，そして抽象化について研究しており，特に私たちがどのようにメタファーを理解したり作り出すかについて検討している。心理言語学的実験を進めるとともに，認知神経科学と計算論的モデリングによる展開に関心を持っている。

講演 2
　タイトル：Modelling the intersection of language and memory（言語と記憶の相互作用のモデリング）
　講演者：Nick Reid（Assistant professor, University of Northern British Columbia, Canada）
　https://www2.unbc.ca/people/reid-dr-nick
　Reid 博士は，言語，概念，記憶を理解するための計算手法に重点を置いた認知心理学の分野で研究を行っている。Western 大学にて，メタファーやイディオムなどの複雑な言語を含む言語が記憶の中でどのように表現されるかをより深く理解するための研究を行った後，Manitoba 大学にて博士研究員として，意味記憶とエピソード記憶を統合した記憶の計算モデルを開発した。現在は，単語の知覚的特徴（単語の音と綴り）が記憶における意味的特徴とどのように相互作用し，正再認と虚再認の両方を促進するかを研究している。また，概念，知覚，言語処理における異文化・異言語間の差異を探るため、海外の研究者とも共同研究を行っている。

講演要旨 1

The Semantics of Metaphorical Meaning: The Interactive Roles of Bodily and Linguistic Experience

Hamad Al-Azary （Assistant professor, Lawrence Technological University）

Metaphors are commonly encountered in daily life and have the potential to facilitate cognition, communication, and social interaction. Characterizing the mechanisms involved in metaphor processing is critical for cognitive science. In this talk, I will describe the centrality of metaphor in human experience, and then describe the cognitive mechanisms involved in metaphor processing. I will focus on key semantic variables. Understanding a metaphor, such as language is a bridge, involves an interaction between the semantic representations of the words language and bridge. However, semantic representations vary widely, which raises questions regarding their role in metaphor processing. In this talk, I will review a series of semantic variables that, through my research program, I have found to affect metaphor processing. I will focus on key semantic variables I have identified in my research program. The semantic variables in question are associated with both bodily and linguistic experience and contribute to a word's overall semantic richness. Words can be semantically rich because they denote concrete concepts that are easy to imagine, such as pen, or less-rich because they denote abstract concepts that are relatively difficult to imagine, such as idea. Moreover, some concrete concepts are semantically rich because they denote concepts that are easy to interact with, such as bicycle, whereas others are less-rich because they denote concepts that are relatively difficult to interact with, such as butterfly. Finally, some words are semantically rich because they have many semantic neighbors, such as castle whereas others are less-rich because they have few semantic neighbors, such as lighthouse (for example, castle's semantic neighbors, such as fortress and palace are highly related, whereas lighthouse's semantic neighbors, such as tower and pier are less related). I will describe several psycholinguistic experiments involving behavioral and neuroscientific techniques that address how the aforementioned variables affect metaphor processing. I will conclude that semantic richness is critical for characterizing metaphor processes, and describe future directions involving cognitive neuroscience and computational modeling.

講演要旨 2

Modelling the intersection of language and memory

Dr. J. Nick Reid （Assistant professor, University of Northern British Columbia, Canada）

Language and memory are two fundamental aspects of human cognition that are intimately connected. Memory is necessarily for language as we use memory to retrieve the meanings of words, to learn grammatical structure, and to communicate about our personal experiences. Language also shapes how we interpret and make sense of the world, which in turn influences how we encode and retrieve information from memory. Despite these connections, language and memory have traditionally been studied separately. This is especially true of computational models of language and memory. Whereas models of memory provide insights into how information is encoded, stored, and retrieved, they say little about the content of this information, such as how specific words or ideas are represented in memory. In contrast, models of language provide insights into the meanings of words and how they are represented, but they do not speak to how people operate on these representations to remember and retrieve ideas from memory.

My research bridges this gap by bringing together the worlds of language and memory modelling. The goal of my research is to create realistic models of human memory that take seriously not only the processes of memory, but also its content. To that end, I have developed the MINERVA S model, which integrates semantic representations from distributional semantic models with MINERVA 2, a classic process model of memory (MINERVA 2; Hintzman, 1986).

In this talk, I will describe a series of simulations with MINERVA S examining how the model "remembers" words, sentences, and metaphor expressions, and show that these simulations closely align with human behavior. Interestingly, the model not only aligns with how people correctly remember language instances, but also predicts their memory errors, such as misremembering the word "cold" when the word "ice" was read or misremembering the phrase "time is money" when the phrase "budget your hours" was read. Importantly, these errors depend on both the connections between words and concepts （captured by the language model） and how these connections interact with memory processes （captured by the memory model）. As such, these simulations highlight the importance of considering the interaction between language and memory in creating realistic models of human memory and cognition.