



## In Cognitive Neuroscience, Experts Discuss the Constraints of Researching Individual Brains

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### Introduction

Scientists argue in a recent research that efforts to comprehend human cognition should go beyond studying individual brains. To better understand how people think, they urge neuroscientists to include findings from social science disciplines.

The researchers said in a paper published in the journal *Frontiers in Systems Neuroscience* that growing evidence suggests that memory, reasoning, decision-making, and other higher-level activities occur across persons. Cognition expands into the physical environment as well as other people's heads [1].

Researchers aimed to address the limits of studying brains in isolation, out of context and without the resources that they rely on for optimal function. Consider how people frequently "outsource" the process of comprehending or reaching conclusions about complex subject matter, relying on the knowledge of others to guide their own decision-making [2].

"Most individuals will agree that smoking increases the risk of lung cancer - without necessarily knowing how this happens," "Moreover, doctors do not impart all of their knowledge to their patients while diagnosing and treating sickness. Patients instead rely on doctors to advise them on the best course of action.

"Our views would become untethered from the social traditions and scientific data that are necessary to maintain them if we didn't rely on specialists in our community," he said. "For example, it would be uncertain whether 'smoking causes lung cancer,' casting doubt on the reality of our beliefs and the motive for our acts." The researchers wrote that it is vital to look beyond the individual and examine the community in order to comprehend the role of knowledge in human intellect [3].

"To a considerable extent, cognition is a communal activity, not an individual activity," Sloman added. "People rely on others to reason, judge, and make decisions for them. This component of cognitive processing is beyond the scope of cognitive neuroscience. "The Knowledge Illusion: Why We Never Think Alone," a book Sloman co-wrote with Phil Fernbach, a cognitive scientist and professor of marketing at the University of Colorado, explores the limitations of individual knowledge and human reliance on others for understanding.

"The difficulty for cognitive neuroscience is to collect knowledge that is not stored in the individual brain but is outsourced to the community,"

Functional MRI, for example, was developed to detect activity in one brain at a time and has limited capacity for capturing the dynamics that occur when people interact in big groups, he explained [4]. This is a constraint that some neuroscientists are attempting to overcome. Researchers in a recent study put two participants in a scanner face to face and recorded their brain activity and eye movements as they conversed. Other groups utilise a technology known as "hyperscanning," which allows for the simultaneous recording of brain activity in people who are physically separated yet communicate online.

Such efforts have observed proof suggesting that the identical mind regions are activated in folks who are successfully communicating with one another or cooperating on a task, these studies also are displaying how brains function differently from each other, relying at the form of interaction and the context.

Numerous fields of studies are beforehand of neuroscience in understanding and embracing the collective, collaborative nature of understanding, Patterson stated. for instance, "social epistemology" recognizes that understanding is a social phenomenon that relies upon on network norms, a shared language and a dependable approach for testing the trustworthiness of ability assets

"Philosophers analyzing natural language additionally illustrate how knowledge relies at the community," Patterson said. "As an example, in step with 'externalism,' the means of phrases depends on how they are used and represented within a social context. Thus, the which means of the word and its correct use depends on gathered expertise that extends beyond the character."

To address those shortfalls, neuroscientists can appearance to other social science fields, Barbey stated.

"We want to include now not handiest neuroscience evidence, however also evidence from social psychology, social anthropology and different disciplines which can be higher placed to take a look at the community of knowledge" [5].

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Received September 20, 2021; Accepted October 05, 2021; Published October 13, 2021

Citation: Fletcher S (2021) In Cognitive Neuroscience, Experts Discuss the Constraints of Researching Individual Brains. *Clin Neuropsychol* 4:122.

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