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Title: Reframing Concepts: A Perception and Prediction-Based Account

This abstract proposes an innovative conceptualization that presents concepts as aggregates of expectations or predictions, thereby circumventing the philosophical conundrums that traditional approaches often encounter. This reframing moves away from referencing metaphysical or linguistic ontologies, offering an elucidation that is as dynamic as our evolving expectations.

By envisaging concepts as an aggregation of our anticipations pertaining to perceptual encounters with objects, we can illuminate this theory. Consider, for instance, the concept of 'water.' This concept embodies our collective expectations of the phenomenal characters of possible perceptual experiences induced by an object referred to as 'water.' Crucially, these expectations are not static but remain in a state of constant evolution, mirroring the fluidity of our concepts.

This fluidity becomes evident through an illustrative example of a person unacquainted with the solid state of water, perhaps due to residing in a tropical region. For such an individual, the concept of 'water' excludes any anticipation of perceiving a solid object. Consequently, presenting a piece of ice as 'water' defies their conceptual expectations, leading them to dismiss the ice as 'water.'

Significantly, this account sidesteps any reliance on abstract Fregean semantic entities or mental representations, thus circumventing the metaphysical problems associated with these theories. This perspective also contrasts with ability-based accounts of concepts, which, though capturing part of the truth about concepts through their application in perceptual activities, fall short in explaining the role of concepts in our imagination, desires, and other cognitive functions.

My account presents three fundamental strengths. Firstly, it offers a physicalist interpretation of concepts, robustly connected with perception, language, belief, and other cognitive faculties in a coherent and naturalistic way. Secondly, it explicates perceptual phenomena such as hallucinations, optical illusions, as well as the contemplation of non-existent objects. Thirdly, it elucidates the interconnectedness of word meanings, perceptual content, and the conceptual components of our sophisticated thoughts, basing everything on perception.

This theory lays out a hierarchical and interactive foundation for language and abstract cognitive activities, rooted in perception. It explains the intentionality of our perception, language, and other cognitive activities based on a prediction-based account of concepts and representation.

Furthermore, it aligns with recent neuroscientific findings, substantiating its consistency with the structure of the human brain.

An added benefit of this account is its potential applicability to machine learning models, suggesting algorithms that could enhance their reliability by establishing genuine conceptual connections with their environment. Beyond these direct implications, this account casts light on broader philosophical issues, including phenomenology, consciousness, language, hermeneutics, philosophy of science, and general artificial intelligence.

In the following discourse, I will demonstrate how this prediction-based account can a priori derive the intentional/representational property of human cognition, providing an innovative explanation for concepts. I will further present neuroscientific evidence and the predictive account of perception and the free energy theory, in support of my account.

Intentionality, the capacity of the brain to signify something other than itself, enables the representation of objects and states of affairs in the world. For instance, a meaningful sign (like a word) possesses intentional power because the information it conveys exceeds its physical characteristics. Similarly, the red light at an intersection, which prompts drivers to halt, establishes an intentional rather than causal relationship. Crucially, the representational or intentional quality of an entity necessitates its capacity for misrepresentation, implying inherent truth conditions.

Through this lens, the only way an entity could be representational or intentional is if it can make predictions about something not physically present in it. This characteristic gives representational power to our perception through the prediction-based functionality of its content. This concept can be used to elucidate how concepts are developed and employed in our beliefs and thoughts.

Substantiating this idea, the predictive coding theory of perception posits that our perceptual system always harbors some expectations, with the bottom-up information pathway reflecting the discrepancy between actual and predicted data. A wealth of neuroscientific evidence demonstrates the profound effect of our background knowledge and expectations on modulating neural activity levels in both perceptual and cognitive layers. These insights suggest that holding a concept, along with a belief about an instance of a concept in the external world, shapes our neural activities both before and after perception.

In conclusion, this paper offers a reimagined account of concepts, anchored in a predictive model of perception, that successfully negotiates historical philosophical dilemmas and brings fresh perspectives to numerous interrelated philosophical disciplines.