Predicative Minds

The Social Ontogeny of Propositional Thinking

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Introduction

When conscious and explicit, human thoughts have a number of singular properties. One of them is being predicative. In a predicative mode, one can think and say of a house that it is big, a car that it is to the left of the house, a cat that it is about to jump, a hypothesis that it is plausible, this book that it is worth reading, or the like. The idea, in this formulation, is that a predicative mind singles out and represents an item (thing, agent, event, situation, and so on) in order to attribute to it—or to direct at it, as I prefer to put it—the representation of another item (be it property, relation, action, evaluation, and so forth).

Puzzling Thoughts

The mental practice of predication may not look like big deal, but I think it is. It is an immensely big deal and quite puzzling too, in evolutionary, psychological, and philosophical terms. Predication is *evolutionarily* puzzling because it is not practiced by other animal minds—at least not according to the analysis proposed here. Predication is *developmentally* puzzling because the thoughts of young children begin like those of other animals, operating in imperative and nonpredicative forms, yet when they turn descriptive and predicative, around the age of two or so, the transition looks less like a gradual maturation from simpler precursors and more like a rather revolutionary change. Finally, predication is *philosophically* puzzling, for several reasons. The oldest and best-known reason is that a predication is more than the sum of its parts. The thought that the lawn is green represents more then the parts—lawn, green, is—represent separately, as a conjunction or mere list. Another reason why predication is philosophically or (perhaps better said) cognitive-scientifically puzzling is that it is not reducible to, and hence cannot be explained by, its conceptual, logical, grammatical, semantic, and even pragmatic properties, as was and still is assumed by most theorists of predication. Or so I will argue.

Predication marks a sharp divide between animal and human minds, and between the minds of young children and those of older children and adults. Predication is also at the heart of conscious, deliberate, explicit, and language-based human thinking. Predicative thoughts are the fuel of higher mental activities, such as deliberation, reflective

planning, hypothetical reasoning, introspection, counterfactual imagination, theorizing, reflective self-control, and more. Predicative minds are the only ones that create art, technology, culture, and science. So many reasons, then, to ask the question—the central question of this book: what explains predication as a mental competence?

Many Faces

Predication is a multifaceted phenomenon. It operates as a mental representation, which can also take a linguistic form—hence as a thought and sentence, respectively—and is thus the output of a family of mental acts produced by the exercise of a mental competence. To understand the competence, it is important to approach its manifest outputs from the right angle, with the right notions. To this end, chapter 1 begins with a distinction between two sets of dimensions that characterize predicative outputs and therefore the mental acts that generate them. One set contains the standard dimensions, to be called *S-dimensions*, such as language, formal structure, concepts, and truth conditions. The other set contains less visible but as important dimensions, to be called *P-dimensions*, such as predicate- to-subject directedness, topic-comment-presupposition format, and intended descriptiveness. This distinction suggests a parallel one about propositions as contents of thoughts. A predicative proposition, I will argue, is one that satisfies both sets of dimensions, whereas a proposition that has only the standard S-dimensions represents only (what I will call) a *coinstantiation* of an object and a property, an agent and an action, or the like. To understand the difference between coinstantiation and predication is to understand the essential contribution of the P-dimensions to the acts of predication. This is also the difference between the approach taken in this book and most other accounts of predication.

Different Answers about Coinstantiation

Chapter 2 turns to some major accounts of predication that aim to explain predication, but as far as I can see, end up explaining only coinstantiation. First examined are classical accounts and in particular Gottlob Frege's— notorious for its indifference to psychology and yet influential beyond philosophy. The chapter then looks at several

psychologically sensitive accounts of predication. One account, shared by many philosophers and linguists, insists on predication being inherent in the syntactic formalism of a language, whether mental or natural. Another account derives the predicative format of animal thoughts from possessing and joining the concepts of objects, properties, relations, and so on. A third account finds the roots of predicative propositions in the naive psychology that inter- prets other minds. A fourth holds that the predicative format of thinking and communication is inherent in how visual perception works. Still another and somewhat related psychological account is that the predica- tive format is inherent in how attention works. Finally, a pragmatic account focuses on one central P-dimension (the topic-comment format), but ignores the others and stops short of exploring the mental underpinnings of predication. There are other versions as well, but the ones explored in chapter 2 are among the most influential and plausible. As far as I can see, none really explains the mental competence for predication, and most are about coinstantiation. Predication is thus in need of a different explanation, concerned primarily with its three most critical P-dimensions, the ones that really make the difference.

The Hypothesis

If I were to place my hypothesis in a philosophical lineage, I would note that David Hume and Immanuel Kant may have been the first major phi- losophers to treat the problem of predication under a psychologically relevant angle, in terms of how the mind works. Reacting to Hume's skepticism about how the mind unites distinct representations (i.e., only through coinstantiation by association, in my terms), Kant posited spontaneously active and purposeful judgments as mental unifiers, and in particular as acts of predication. Donald Davidson notes that unlike Hume, Kant was not aware that he had not addressed, let alone solved, the problem of the unity of predication. The unity problem, according to Davidson (2005, 99), is to explain what the mind adds to the components of a predication— e.g., lawn, green, is—to produce the predicative judgment that the lawn is green. Nevertheless, I think that Kant had the right insight: predication *is* a mental construction, a spontaneously active and purposeful judgment, made possible by certain abilities of the human mind. The unity itself, I will contend in chapter 3, results from how the P-dimensions, reflecting these abilities,

animate and organize predicative judgments. The psychological question, then, is what mental abilities are responsible for this accomplishment.

My hypothesis is that these P-abilities (as I will call them) are assembled gradually and cumulatively out of developments originating in disparate faculties that operate in disparate domains, for a variety of reasons that are initially unrelated to predication. These faculties constitute the main roots of predication, according to chapter 4. The first root is the adult-infant physiological coregulation, which later takes a psychological turn as bilateral and intersubjective communication by shared meaning. A second root is the young child's imperative and world-bound communication that treats adults as a means to the child's goals. A third root is the child's development of a sense of other minds, which builds mostly on the bilateral mental sharing of infancy and later on a growing naive psychology (or theory of mind).

The contribution of these roots to predication takes the form of an *onto-genetic staircase* leading successively to the child's sense of communicative meaning, prelinguistic coreference, and finally word coreference introduced by the adult's explicit acts of naming in contexts of shared attention. The child's mental scheme of explicit and shared word coreference becomes the source and template for the child's earliest predicative judgments.

The developmental process that generates this ontogenetic staircase is, according to chapter 5, one of *assembly*—as opposed to either maturation out of an innate base dedicated to predication, or learning by association and imitation. On this assembly view, distinct abilities and dispositions are recruited, joined, and blended together by successive challenges—some of them adult inspired or guided—that the young child's mind encounters and must handle adaptively, as it advances on the ontogenetic staircase to shared attention, then word acquisition, and finally predication.

Although chapter 5 concludes the developmental story of predication, it is worth meditating on its possible historical and neuropsychological implications, which is the topic of chapter 6. Since the abilities and dispositions that contribute to predication originate in separate faculties operating in separate domains (the roots of predication), and have initial functions unrelated to predication, it looks like the competence for predication may have first evolved as an *incidental* effect of selection for more basic onto- genetic adaptations for

interpersonal coregulation, communication, language acquisition, and the assimilation of culture. The selection in question may have at first been mostly sexual and conducive to a revolution in parenting, probably rather recent historically. This parental revolution would explain the intense and intricate communicational interactions between children and adults, and the escalating arms race during which new mental acquisitions of the child are met with new challenges, mostly linguistic and cultural, initiated by adults. The responses of the young minds may have begun as improvisations, whose successful versions may have ended up genetically assimilated as ontogenetic adaptations.
In a nutshell, then, this book maintains that humans develop predicative minds for several disparate reasons, mostly noncognitive, which bear initially on physiological coregulation, affective and manipulative communication, and the acquisition of words. Once developed, the competence for predication in turn redesigns human thinking and linguistic communication. This is why understanding the uniqueness and representational power of the human mind requires an explanation of why and how predication came to be. This book proposes such an explanation.

Credits

The search for an explanation took my inquiry into quite disparate territories—from the philosophy of mind and language to psycholinguistics and developmental psychology—that is, wherever I thought the empirical evidence was relevant and the theoretical insights useful. Along the way, at critical junctures, the search had some good guides. Thus, it was helped considerably by the bright and illuminating signposts first planted by Lev Vygotsky and his school several decades ago, which revealed some essential psychosocial contours of the human mind. These signposts were later rearranged more tightly, around the narrower area of the child's intersubjective communication, naive psychology, and language acquisition, by a cluster of broad-minded interdisciplinary developmentalists, ranging from Jerome Bruner to Peter Hobson and Michael Tomasello. But the ontogeny of predication being what I think it is—a mosaic of interacting ontogenetic adaptations—the search also took my inquiry into the territory of the child's (mostly) imperative communication, which was superbly mapped by Elizabeth Bates, working mostly with the tools of the

alternative Piagetian tradition. Equally insightful was David Olson's pioneering analysis of the ontogenesis of propositions. Martha Gibson's survey of philosophical theories of predication was a useful guide to a large, complicated, but alas psychologically unilluminating literature. Other debts will of course be credited in the text. But the ones just cited deserve early recognition, as they paved the way to my understanding of the mental side of predication.