What Can We Learn from How a Parrot Learns to Speak Like a Human? A Model for Referential Communication Learning

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In this paper, I propose a model of how animals learn to communicate referentially, which highlights the importance of social context when thinking about communicative behaviours and capacities. Contrary to some theories that emphasize recursion, my model represents key factors for acquiring referential communication without presupposing capacities for recursion. The model emphasizes the importance of motivation in the form of social and ecological incentives, demonstrating the usefulness of referentiality to the learner, learning within a socially interactive context, and sufficient exposure.

I present evidence that my model applies to mammals and parrots who are cognitively capable of acquiring referential communication. My analysis examines the research of Irene Pepperberg and Nicolas Giret et al. Both the Pepperberg and Giret labs trained grey parrots to communicate using words. While parrots in the Pepperberg lab successfully learned to use many words referentially, parrots in the Giret labs did not. Pepperberg's subjects learned to communicate referentially via various training methods that emphasized social context and interaction. To introduce new words, Pepperberg primarily used a Model/Rival technique in which two human trainers demonstrate the reference and functionality of target words, while providing social interaction. After the parrot attempted to vocalize a new word in the presence of the referent object, trainers would repeat the word in different sentences to clarify its pronunciation, reminiscent of how human parents talk to young children. In this way, parrots acquired the referential use of words through techniques similar to how humans learn to speak. I show that the model applies also to other species trained by humans to communicate referentially, as well as to the referentially specific communication of animals found in nature.

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