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Linguistics 101

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What it All Means Writing Project

In the first chapter of *What it All Means*, Philippe Schlenker delves into the world of primate communication; from monkey calls to ape gestures. In order to learn about the inner workings of the communication systems of primates, it is crucial to utilize scientific research; field experiments, observations, and theories. By taking a look at the calls of Vervet and Diana monkeys, we can establish the existence of semantics in primates. Through experiments revolving around the alarm calls of Titi and Campbell's monkeys, we can argue for the presence of the Informativity Principle in our primate counterparts. Even more fascinating is the evidence for bilingualism across different species of primates. Schlenker guides us through putting together theories on the interactions between the primate semantics and pragmatics in the captivating first chapter of *What it All Means.*[1]

The first study explored in the book is from the 1980s, in which primatologists studied the calls of the Vervet monkeys of Africa. Three of these calls are associated with raptors, leopards, and snakes. In order to find out whether these calls are used to convey information or simply a physiological reaction, the researchers conducted an experiment. The primatologists hid loudspeakers in trees and played back alarm calls without any actual threat in the area to determine the purpose of the calls without outside interference.[2] The findings of the study showed that the monkeys responded accordingly to the calls. When a snake alarm call was played, the Vervets looked down. In response to the leopard alarm call, monkeys on the ground

1 [P. Schlenker, What it all means (Cambridge, MA: MIT Press, 2022)]

2 R. M. Seyfarth, D. L. Cheney, and P. Marler, "Monkey Responses to "ree Di#erent Alarm Calls: Evidence of Predator Classification and Semantic Communication," Science 210 (1980): 801–803.

either ran for cover or looked up for leopards in the trees. Vervets in trees would look down for eagles more often than Vervets on the ground. The results of this study establish the presence of primate semantics, of rules that dictate the meaning of expressions.

The Vervets are not the only monkeys that exhibit the existence of semantics. In another study, primatologists conducted three sub-experiments with Diana monkeys and observed their reactions to alarm calls.[3] During the first experiment, an eagle shriek was played from hidden loudspeakers, which caused the Dianas to produce eagle alarm calls. Five minutes later, another shriek was played, but no alarm calls were produced since the eagle presence was already known. During the second experiment, the Diana eagle alarm call was played, which caused the Dianas to produce eagle alarm calls. Similarly to the first experiment, when an eagle shriek was played five minutes later, no alarm calls were produced. For the final experiment, researchers played a Diana leopard alarm call, causing the Dianas to produce leopard alarm calls. Five minutes later, an eagle shriek was played, which caused the Dianas to produce eagle alarm calls since this was new information.

A major concept discussed in *What it All Means* is the Informativity Principle. The Informativity Principle states that a speaker will be as informative as possible, using the language that best communicates cooperatively to their audience. For example, when telling a friend that you loved a movie, you would say something like, “It was great!” rather than, “It was nice.” Though the latter may be true, it leads to your audience assuming that you did not like the movie as much as you truly did. Primatologists researched the Titi monkeys of Brazil and found that the Informativity Principle seemed to be at play in their alarm calls.[4] In their findings, the researchers observed that the monkeys had a B-call, which was used to mean “something is

3 K. Zuberbühler, Cheney, and R.M. Seyfarth, “Conceptual Semantics in a Nonhuman Primate,” Journal of Comparative Psychology 113, no. 1 (1999): 33–42.

4 C. Cäsar, K. Zuberbühler, R. J. Young, and R. W. Byrne, “Titi Monkey Call Sequences Vary with Predator Location and Type,” Biology Letters 9 (2013): 20130535.

happening." There was also an A-call, which seemed to mean "there is a serious threat above." In situations that involved a raptor in the canopy, the Titis used a sequence of repetitive A-calls (A+ sequence). In such a scenario, the B-call would be true, as there is indeed something happening. However, the A-call is much more informative, and would provide other Titis with valuable information in a life-or-death situation.

Moreover, by studying Campbell's monkeys, primatologists found that the Informativity Principle was present in their calls.[5] *Hok* was observed to be used as an alert for non-ground alerts, while *hok-oo* meant that the alert was non-serious. When *hok-oo* could not be used, *hok* was used, meaning that if the alert was not non-serious, it was a serious alarm. Primatologists also noticed there was a difference in meaning in the Tai forest of Ivory Coast versus on Tiwai island in Sierra Leone. *Krak* was used in the Tai forest as an alert for leopard presence, while on Tiwai island it was used as a general alarm. If we apply the same meaning to -oo as we have to *hok-oo*, then *krak-oo* refers to a weak alert while *krak* is used for general alerts. In the Tai forest, *krak* is used primarily for leopards as their main predators are eagles and leopards. If the threat was an eagle, *hok* would be more informative - Campbell's monkeys thus use the Informativity Principle and apply the most appropriate alarm call to the situation at hand.

Remarkably, it appears that our primate cousins can be bilingual - they are capable of understanding the language of other species. When primatologists played a series of Campbell's *krak* calls, Dianas reacted with their leopard alarm calls. Likewise, in response to hok calls, the Dianas responded with eagle alarm calls. Moreover, Dianas understood that *booms* in Campbell's were not a sign of predation. When *booms* were played preceding *kraks* or *hoks*, the Dianas did not react with alarm. However, when *booms* were played before Diana alarm calls, the monkeys

5 P. Schlenker, E. Chemla, K. Arnold, A. Lemasson, K. Ouattara, S. Keenan, C. Stephan, R. Ryder, and K. Zuberbühler, "Monkey Semantics: Two 'Dialects' of Campbell's Monkey Alarm Calls," Linguistics & Philosophy 37, no. 6 (2014): 439–501, https://doi.org/10.1007/s10988-014-9155-7.

disregarded the non-predation call as they understood that *booms* did not apply in the context of Diana sequences. This bilingualism goes both ways; when the Campbell's monkeys hear Diana alarm calls, they use their own calls to broadcast this information to the rest of their group.