

# Expertise Effects on the Biological Basic Level

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In the 1970s, anthropologists studying the folk-biological taxonomies of traditional cultures noted a cross-cultural consistency: in naming natural objects, one level of category exhibited special status (Berlin, Breedlove, & Raven, 1975). This "folk-generic" category roughly corresponded to the scientific genus and bore a linguistic marker of frequent use (a monolexemic form), suggesting that it was both an obvious and useful category. Psychologist Eleanor Rosch and her colleagues termed this level *the basic level* and operationalized it using a set of theoretically driven measures (Rosch, Mervis, Gray, Johnson, & Boyes-Braem, 1976). While these measures clearly identified the anticipated privileged level for non-biological categories, the basic level for biological categories proved to be more abstract than anticipated (e.g. "tree" was privileged, not "maple").

One possible explanation for this discrepancy is expertise—for biological categories, Rosch's urban participants' limited experience with natural kinds may have affected which categories were most meaningful to them. Subsequent research has shown effects of expertise on several of Rosch's measures, but the present study is the first to compare expert and novice performance on the "signal detection" task. This task assesses the effect of different levels of primes on subjects' ability to detect an obscured and briefly presented image. The goals of the study were threefold: replicate Rosch's results for non-biological categories, extend the task to biological categories, and compare expert-novice performance. Three populations participated: tree experts, experienced bird-watchers, and undergraduates. The replication with non-biological categories was largely successful. However, for biological categories, our results were not consistent with Rosch's findings. Instead of a more abstract category serving as basic, no level satisfied the criteria of the basic level.

## References

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- Rosch, E., Mervis, C. B., Gray, W. D., Johnson, D. M., & Boyes-Braem, P. (1976). Basic objects in natural categories. *Cognitive Psychology*, 8, 382-439.