

### **Informativeness and the Distinction Between ‘Basic-Level’ vs. Superordinate Verbs**

Classic work on categorization shows a “basic level” bias: when naming objects, people overwhelmingly prefer basic-level nouns (e.g., *dog*, *chair*) over more abstract superordinates (e.g., *animal*, *furniture*; Rosch, 1973). More recent work (e.g., AUTHORS, 2025) has argued that pragmatics contributes in part to the basic-level bias: speakers routinely adjust the specificity of the labels they choose, favoring forms that are informative. Superordinate nouns are typically judged as under-informative compared to basic-level labels but become acceptable when context makes them relevant (ibid.).

At present, much less is known about whether and how the basic-level bias (and its pragmatics) operates over verbs (Zhuang & Lignau, 2021). What we might call “superordinate verbs” (e.g., *move*, *work*, *perform*) do not stand in strict entailment relations to their basic-level counterparts (e.g., *run*, *teach*, *sing*). Unlike noun superordinates, which form logical subset–superset mappings, verb abstractions represent looser, context-sensitive generalizations over events: teaching is often, but not necessarily, a kind of working; singing may or may not constitute performing. As a result, verbs do not form coherent taxonomic hierarchies comparable to those in the nominal domain. Nevertheless, verbs do form meaning hierarchies, and contextual, along with logical entailment relations (Horn, 1972), can support informativeness calculations. In two experiments, we adapted the paradigm in AUTHORS (2025) to probe whether and how pragmatic expectations of informativeness apply to verbs.

In Experiment 1, 40 adults viewed a photograph of a person engaged in an action. A cartoon character, Mr. Lion, described the action with either a basic-level verb (e.g., “A woman is running”, see Fig.1) or a more abstract, “superordinate” verb (e.g., “A woman is moving”). Adults were asked to choose a small, medium or large cupcake to reward the speaker for his description. Of interest was whether superordinate verbs (similar to nouns) would be judged as underinformative (and elicit lower rewards) compared to a basic label. Indeed, superordinate verbs received significantly lower rewards compared to basic-level verbs ( $\beta=-1.77$ ,  $p<.001$ , Fig.3). Thus, even though verb pairs do not form strict entailments as noun hierarchies do, adults still treated superordinate verbs as underinformative labels.

Experiment 2 introduced contextual contrast by presenting a grid of four action images, with the one from Exp. 1 highlighted as the target. The images formed either (a) a *Same-superordinate* context, in which the target (running) and all other actions (e.g., jumping, walking, dancing) could plausibly be described by the same superordinate verb (e.g., *moving*; see Fig.2a), or (b) a *Different-superordinate* context, in which only the target (running) fit the superordinate verb (e.g., *moving*; the other images showing someone sitting, standing, or lying, see Fig.2b). Forty participants again judged Mr. Lion’s use of either the basic or superordinate verb to describe the target action as in Exp.1. (Both verb type and context were crossed within subjects.) Of interest was whether contrast would modulate adults’ judgment of superordinate verbs by highlighting relevant alternatives to what the speaker said. As in Exp.1, adults preferred basic-level verbs over superordinate ones across both Same-superordinate ( $\beta=4.50$ ,  $p<.0001$ ) and Different-superordinate contexts ( $\beta=0.80$ ,  $p=.017$ , Fig.3). We also observed a significant interaction between verb type and context ( $\beta=-3.70$ ,  $p<.0001$ ), indicating that the penalty for superordinate verbs was much larger in the Same-superordinate context where the superordinate description did not uniquely identify the target among the other 3 alternatives.

In sum, adults consistently preferred basic-level verb labels over superordinate alternatives, echoing patterns previously observed for nouns. Crucially, verb judgments were highly context-dependent. These findings suggest that expectations of informativeness guide speakers’ evaluation of verb meanings as well. Even though verbs form looser hierarchies and thus do not provide predetermined alternatives, listeners systematically generate context-driven alternatives to facilitate judgments. We argue that these patterns reflect the robustness of informativeness in pragmatic computation, guiding interpretation in semantic domains that are more malleable and structurally flexible than traditional (nominal) taxonomic categories.



Fig.1. A critical trial in Exp. 1. Mr. Lion says: “A woman is running” (basic-level verb), or “A woman is moving” (superordinate verb). Participants have to reward him by choosing one of the cupcakes.



Fig.2a. A critical trial in Exp. 2, Same-superordinate Context. Mr. Lion says: “A woman is running” (basic-level verb), or “A woman is moving” (superordinate verb).

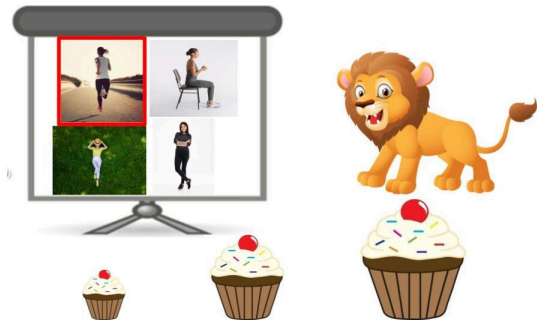


Fig.2b. A critical trial in Exp. 2, Different-superordinate Context. Mr. Lion says: “A woman is running” (basic-level verb), or “A woman is moving” (superordinate verb).

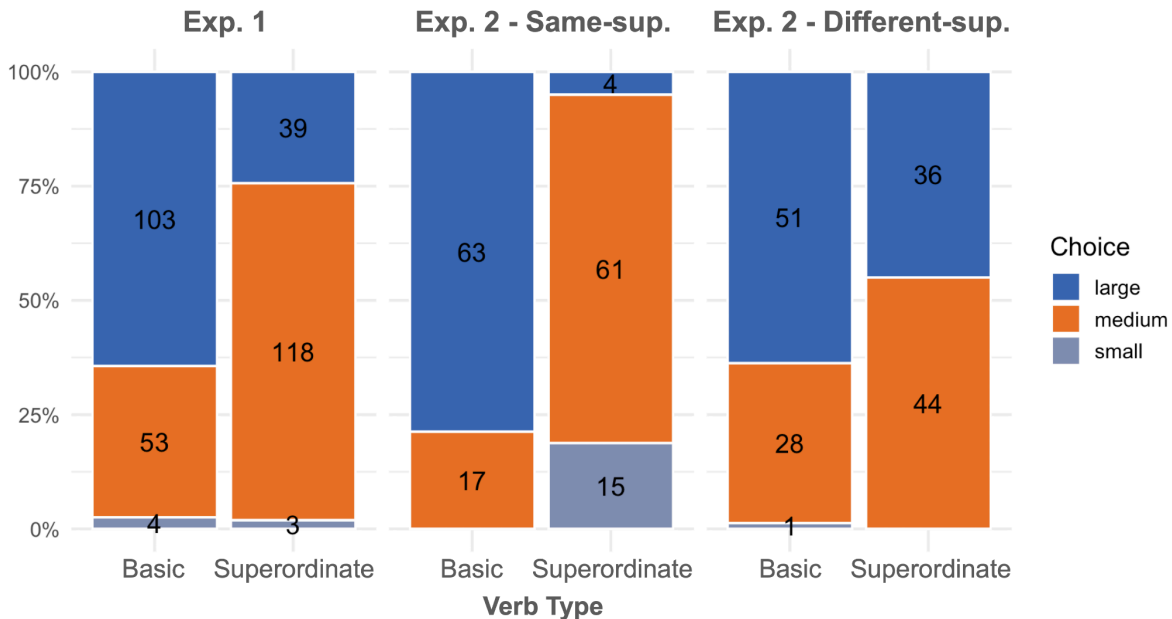


Fig.3. Distribution of reward choices for critical trials in Exp. 1 and 2 (Same- or Different-Superordinate).

### References

**AUTHORS (2025).** HSP presentation [anonymized].; **Horn, L. R. (1972).** *On the semantic properties of logical operators in English.* UCLA.; **Rosch, E. H. (1973).** Natural categories. *Cognitive Psychology*, 4(3), 328–350.; **Zhuang, T., & Lingnau, A. (2022).** The characterization of actions at the superordinate, basic and subordinate level. *Psychological Research*, 86(6), 1871-1891.