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From sensorimotor categories to grounded symbols: The transition from praxis, pointing and pantomime to propositions

Cognition is mostly categorization: Doing the right (adaptive) thing with the right *kind* of thing. Some categories are inborn; most are acquired. Most species can acquire categories from direct trial and error experience, with corrective feedback. Some species can also acquire some categories by imitation. But only human beings can also acquire categories by "hearsay" – by combining and recombining the symbols that name the grounded sensorimotor categories they already have into *propositions* that describe or define new categories for those who don't yet have them.

Words are mostly arbitrary category names. Language was preceded by categories grounded in practical sensorimotor actions; in our highly social species, pointing and imitation grew into extended pantomime as a form of instrumental communication for transmitting categories. The familiar iconic gestures then shrank ergonomically into arbitrary signs associated with the sensorimotor categories. But the critical transition to language occurred when strings of these arbitrary category "names" came to be construed as propositions with truth values.

Under selective pressure from the dramatic adaptive advantages of the unprecedented and unlimited power of propositions to describe, transmit and receive categories, Baldwinian evolution "biased" our brains organically toward acquiring and using language, with an inborn compulsion to name and describe everything. Along with that came also the natural transition from the gestural modality to the advantages of the much more arbitrary and efficient oral modality.

Thereafter, all further linguistic changes – from writing to print to the latest development: our species' "Category Commons," the Web – were invented or learned via language itself, rather than being encoded in our species' genome.

Some selected prior papers of mine on this topic:

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