



## Language learning as problem solving: Its role in culling linguistic universals

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What motivates individual children to learn the structural aspects of language – and hence its (critical) generativity? Parameter setting theories do not address motivation: “communication-drive” theories do not explain it as part of an adequate learning model. A general model of learning can explain both language learning motivation, and several kinds of attested language universals.

The hypothesis starts with the gestalt observation that for humans problem solving is cognitive “fun”, releasing the well-known “aha”, when a problem’s solution is intuitively recognized as a resolution of a mental conflict. The demonstrations include consideration of why folk aesthetic objects endure, such as “Goldilocks” (which started as quite a different story) and the appeal of “happy birthday” (which also started as quite a different song).

I review some well-known facts about early stages of syntax acquisition, as well as some new studies of artificial language learning that follow the principles of problem solving – first isolate superficially conflicting representations, then resolve them by accessing a more abstract level of representations. The language acquisition patterns demonstrate the initial induction over statistical regularities, and then the discovery of more abstract structures when the regularities are violated.

Every learnable language has a canonical surface form CFC. (e.g., *N, agreeing predicate, XP* in English) and canonical mappings of that onto thematic relations (e.g., *N...V...N -> Agent Predicate Other*, in English). This is a mysterious fact, completely unexplained by linguistic theory. But on the general learning-as-problem-solving model, the CFC is required to make languages learnable: it facilitates the early alternation (logically) between inductive hypothesis formation, and structural analysis of the hypothesis. A language without a Canonical Form, simply won't be learned.

EPP is a stipulated configurational filter in syntax on distant derivations, and accordingly violates the general principle that all syntactic constraints are “local” (be it in minimalist or connectionist frameworks). I show that EPP phenomena fall out of the canonical form constraint (CFC) on attested languages - This shows that EPP is not an actual principle of grammar or some other constraint on general communication patterns.

In addition, *this (rather traditional) learning model accounts for other phenomena as well, and supplements (some will say, obviates) parameter setting models in general.*