Dissertation Abstract: Ways in the Study of Words

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While theoretical linguistics has made significant progress in understanding the structure and acquisition of linguistic competence, discussions of the methodology of such a discipline have, when not absent entirely, relied on outdated philosophy of science. In my dissertation I aim to ameliorate this neglect by drawing on contemporary philosophy of science to provide a meta-theory for linguistics capable of providing better ways of understanding both its successes and failures.

Human language is both systematic and creative. Its systematicity is exemplified by the syntactic and semantic rules governing which sentences are grammatical under which interpretations. Contemporary linguistic theory has progressed largely by relating natural language to formal systems in which these rules can be stated explicitly. On the other hand, language use is characterized by the creativity with which rational human agents are able to apply and manipulate these rules. The puzzle for theorists of language is: how to capture both of these aspects of language? Inquiry focusing too closely on the systematicities of language fits badly with the repeated observations of violations of these rules. Inquiry focusing too closely on creativity misses out on generality and predictive/explanatory power.

For example, contemporary syntactic theory proposes rules of question formation that predict the unacceptability of certain sentences in which wh-expressions are pronounced within embedded clauses, such as *“James believes who left?”. Such rules are highly general and enable deep explanations of linguistic and cross-linguistic phenomena. However, in certain discourse situations, such questions are perfectly acceptable. This poses a dilemma for theorists: complexify and particularize the theories and make accurate predictions, or retain the simpler, more general theory and live with the anomalies. Similar trade-offs between generality and empirical coverage arise throughout linguistics.

My approach, developed in chapter one (forthcoming in *Synthese*), centers on the notion of the explanatory economy: the collection of dependencies that hold between distinct models of the linguistic system. I argue that particular linguistic theories can retain general and deep rules in the face of apparent counter-examples by accruing debts to other areas of inquiry. For example, deviations between acceptability and grammaticality can be treated as the purview of psychological theories of processing, rather than linguistic theory per se. This approach enables us to maximize explanatory depth and generality in particular theories, while still remaining, as a collective, responsive to all the data.

Heavy NP-shift provides an example. This is the phenomenon wherein noun-phrase arguments appear to distribute differently based on how ‘complex’ they are. For example, verbal adjuncts typically must follow the direct object of the verb they modify (compare “I sold the book for a high price” and *“I sold for a high price the book”*). However, when the direct object is complex, this pattern is much less pronounced (“I sold for a high price the book about quantum electrodynamics”). Faced with such facts, linguists could, and have, posited grammatical rules that target expressions based on their complexity. However, this makes grammars much more complicated, and leads to various difficulties concerning language acquisition. The explanatory debts approach, however, enables us to retain the simpler grammar, making no reference to complexity, as long as such phenomena can be explained by other factors, such as parsing strategies or discourse structure.

This approach differs from prominent discussions of theory confirmation in philosophy centrally in that it is collectivist, rather than competitive. Traditional theories asked, of a
particular theory, how confirmed it is in contrast to competing theories. The explanatory economy, however, stresses the way in which non-competing theories, of different phenomena, must be evaluated collectively, as they cover complementary sets of observations. When what appears to be anomalous from the perspective of one theory can in fact be explained by another non-competing theory the empirical credentials of the first can be increased rather than, as on the standard theory, diminished.

The aim is to evaluate the collection of applicable theories as a whole to see what is genuinely anomalous and what is simply outside the scope of particular approaches. Chapters one through three of the dissertation involve the application of this approach to developmental theories of language, syntax (as discussed above), and semantics, respectively.

Perhaps the central debate within the developmental literature is about the degree to which language acquisition is innately driven. Chapter two describes this debate within the context of the explanatory economy. Nativists argue that much of the structure of the developed language faculty is determined by species-universal biological traits. Empiricists argue instead that linguistic rules are acquired by abstracting them from environmental stimuli. Nativists have trouble explaining the apparent socially-dependent variation of language, while empiricists have yet to respond adequately to poverty of the stimulus arguments, suggesting that certain acquired linguistic rules are absent from the environment. The explanatory economy can show how these two approaches can work in tandem. In particular, by viewing human language acquisition as involving both the internally-driven development of innate structure and the extraction of environmental linguistic patterns, the deep difficulties with each approach taken alone can be resolved as debts accrued by each to be discharged by the other. Constraints on language seemingly absent from the environment can be explained by nativist models, while the learned exceptions to broadly universal linguistic generalizations can be explained by empiricist models. This complementary approach highlights the strengths of each stance, and shows how apparent problems are really reflective of the underlying diversity of causal factors, not in failures of the particular proposals to accurately describe their target systems.

One of the central debates in semantic theory centers on the role and extent of context in determining truth-conditions. Intuitive judgments show a high sensitivity to contextual features such as speaker’s intentions, relevance, etc. This poses a problem for semantic theory: either incorporate such contextual features, and complicate the theory, or ignore them and create a disparity between the evidence (speaker’s judgments) and the theory. Both options have been defended in the literature. However, I argue in chapter three (revised and resubmitted to *Inquiry*) that the explanatory economy enables us to avoid this dilemma. Simple invariantist models of meaning can be proposed, but will face apparent counter-examples. These counter-examples can be treated as debts to be discharged by more complex contextualist models, incorporating a wider range of determinants of meaning. Again, this collaborative approach enables us to maximize our theoretical virtues by proliferating models, rather than attempting to select the uniquely correct one.

Chapter four, Compositionality and Inference to the Best Explanation responds to a worry with this pluralistic approach: it seems to violate the assumption of compositionality, that complex expressions’ semantics are determined by that of their simple parts. I argue, drawing an analogy to evolutionary theory, that the standard arguments for compositionality are unsuccessful.