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Testable universals, the natural-kinds programme, and presupposed universals in grammatical theorizing

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Prologue:

What we probably all share at this conference:

- we are interested in theoretical linguistics (not in applied linguistics)
(DGfS > DGftS?)
- we are interested in Human Language, not just in particular languages (*p-languages*)
- in other words, we want to do **general linguistics** (*g-linguistics*)

but how do we solve the **general linguistics paradox**?

We want to explore and understand the nature of Human Language, but what we can observe directly is particular languages. (Haspelmath 2020b)

answer: – we study **universals**
[– alternatively: we study nonconventional aspects of Human Language]

Two ways of testing (or justifying) universals:

- on the basis of uniform measurement
- on the basis of hypothesized uniform building blocks (“natural-kinds programme”)

I. Measurement uniformity as a basis for testing universals

To compare languages, we need **uniform yardsticks for comparison**.

For example, to test the claim in (I), we need to determine the order of **adpossessor** and **noun**, and the order of **object** and **verb** in a representative set of the world’s languages.

(I) If the adnominal possessor precedes the noun, the object tends to precede the verb; and if the adnominal possessor follows the noun, the object tends to follow the verb.

- how do we measure “order”?
(Dryer 2005: dominant order = more than 67% of occurrences in texts)
- how do we “measure” “possessor”, “noun”, “object” and “verb”?
(Greenberg 1963: semantically)

NOTE: Comparison is not based on **the rules** of the languages
– because the rules do not make reference to text frequencies and to semantic notions

Compare economics:

We measure economic indicators (like inflation) by uniform yardsticks, while ignoring culture-specific rules about money and buying (let alone mental representations of money).

Comparison of phonological systems:

by means of **phonetic** properties, not phonological values

In general: comparison requires **comparative concepts**
not **descriptive categories** (Haspelmath 2010)

Measurement uniformity allows large-scale quantitative testing of universals.

2. Building-block uniformity as a basis for testing universals

Many generative linguists say that one needs to have “deeper”, non-surface descriptions as the basis for comparison:

Bobaljik (2015: 318)

“one of the hurdles to seeing more fruitful interaction between typological studies and formal generative approaches lies in the granularity of the questions being asked, and the degree to which we are ready to **look beyond the surface descriptions**, and to ask questions about patterns at a higher level of abstraction.”

Holmberg (2016: 363)

“as linguistic theory progresses..., the more confident we can be that the observations are accurate, and **the more abstract the properties** can be that are subject to typological research”

Roberts (2019: 12):

“From the perspective of generative grammar, much typological analysis seems excessively **surface-oriented**.”

“Deep” (as opposed to “surface-oriented”) descriptions can mean two things:

- broader generalizations that encompass **more phenomena**
- a description in terms of a hypothesized **innate grammar** blueprint (“UG”)

“Universal grammar consists of a set of atomic grammatical categories and relations that are the building blocks of the particular grammars of all human languages, over which syntactic structures and constraints on those structures are defined. A universal grammar would suggest that **all languages possess the same set of categories and relations.**”

(Barsky 2016)

And indeed, authors who prefer comparison based on “in-depth” or “abstract” analyses work with innate categories, e.g.

cf. Holmberg, Nayudu and Sheehan (2009):

BP, Finnish, and Marathi share the following properties:

(a) They do not have a [P] feature paired with [ϕ ,T]. This means that they allow null subjects in contexts where non-null subject languages such as English, French, Sindhi, etc. require a pronounced subject.

(b) They do not have a [uD] feature in T which could receive a value (a referential index) from a null A-topic (itself part of an A-topic chain), which it could pass on to a ϕ P subject via Agree and concomitant incorporation (Roberts 2007), thereby deriving a definite null subject chain headed by T and linked indirectly to an A-topic in the discourse context.

So de facto, “deep analysis” primarily means analysis in terms of innate categories – what is of interest is **uniformity of building blocks** (and this is ensured by assuming that the building blocks are innate).

But we do not know what the building blocks are – this is subject to **constant reevaluation**. Each new language may lead a researcher to make a new proposal about the innate building blocks.

Building-block uniformity does not allow large-scale quantitative testing of universals.

→ Universal-testing must proceed in a slow and piecemeal fashion...

cf. a recent interaction on Facebook with David Pesetsky (<https://dlc.hypotheses.org/2235>):

Martin: Many thanks for all these references! There’s a huge generative literature, I know – but again, almost of it has the problem that **it makes claims that are not readily testable**. You first need an “in-depth” analysis, based on the right theory (which we don’t have). This methodological problem does not go away, even if you cite 50 papers on individual languages.

David: You’ve hit the nail exactly on the head, but for some reason don’t agree that it’s a real nail and it needs to be hit on exactly that head. Yes indeed, the claims are not **readily testable**. And yes indeed, **you first need an “in-depth” analysis**. That’s the whole point of our work, and why what passes for “typology”, while sometimes useful in generating guesses about promising generalizations or correlations, often does not look like maximally useful research to people like me – since uncovering the real generalizations does require in-depth prior analysis. And (this is crucial) in-depth prior analysis works: you **can** learn

3. Untested architectural universals

In addition to **features and categories** (substantive universals: consonant/vowel, onset/coda, high/low, noun/verb, 1st/2nd, nominative/accusative, indicative/subjunctive, main/subordinate, finite non-finite, etc.),

innate building blocks also include **grammar components**:

levels and strata
 morphology and syntax
 PF and LF
 early and late insertion
 cycles

and **rule types**: movement, syncretism, zero, optimality violations,
 c-command, feature checking, unification, Merge and Agree

(grammar components + rule types: architectural universals)

Linguists often propose and illustrate these universals, but **they never test them systematically**.

Instead, linguists have a tendency to **assume** that they are true, and proceed on this basis – and often they choose to mix only with others who make the same assumptions.

For example, the morphology-syntax distinction is **simply assumed** by many or most morphologists.

“Any hard-and-fast definition of ‘word’, even in English, is likely to be problematic. Like most books on morphology, this book will ignore the problem. It will be assumed that orthographic words represent ‘words’ in the more general sense... This is far from ideal, but the only way of making any progress.” (Bauer 2019: 2)

If you only attend morphology conferences, and only submit to morphology journals, and only teach morphology classes, you can lead a happy life with this assumption.

But it remains **an assumption**, which may or may not be true.
 It would become **a hypothesis** if it could be tested.

Psychologists have a REPLICATION CRISIS:
 published hypothesis-testing results are often not replicable

Do linguists have a HYPOTHESIS-TESTING CRISIS?
 we have a large number of claims of universals, but we often simply presuppose their truth (by “adopting a framework”)

“Linguists need to establish a culture of hypothesis-testing, in addition to their existing culture of generating new hypotheses. As psychologists have found out, there is no guarantee that proposed generalizations will hold up after more testing.” (from my abstract)

4. The natural-kinds programme

Generative linguistics has one type of programme that promises broader success, because it may lead to concrete proposals about the innate building blocks.

“The parametric model is a very powerful model of both **linguistic diversity** and **language universals**. More specifically, it provides a solution to Plato’s Problem, the logical problem of language acquisition, in that the otherwise formidable task of language acquisition is reduced to a matter of parameter-setting. Moreover, it makes predictions about language typology: **parameters make predictions about (possible) language types** ... Furthermore, it sets the agenda for research on language change, in that syntactic change can be seen as parameter change ... Finally, it draws research on different languages together as part of **a general enterprise of discovering the precise nature of UG**: we can discover properties of the English grammatical system (a particular set of parameter values) by investigating Chinese (or any other language), without knowing a word of English at all (and vice versa, of course).” (Huang & Roberts 2016)

Baker (2001) compared this research programme to the identification of chemical elements in the 19th century.

Just as Mendeleev discovered the Periodic Table of Elements, by studying diverse chemical compounds, linguists can search for the innate building blocks of UG by studying diverse languages.

Both chemical elements and innate building blocks of language systems are **natural kinds** – categories of nature that are independent of human observation.

However:

Noam Chomsky **has given up this programme**, because he thinks that Darwin’s Problem (“How can Human Language have evolved?”) rules out a rich innate grammar blueprint (e.g. Berwick & Chomsky 2016).

Many generative linguists agree with Chomsky, e.g. Julie Anne Legate:

“I have now convinced myself of a framework whereby merge is innate, but any (other) **language-specific innate properties are highly suspect** and require significant evidence. (This is due to Noam’s writings on evolution finally sinking in, and due to my accumulating knowledge about the extent of language variation.) Case, both the distribution of noun phrases and the case morphology, is not universal, varies considerably across languages, and so must be learned.” (2018; see <https://dlc.hypotheses.org/1392>)

Thus, the 21st century Chomskyan thinking is incompatible with the natural-kinds programme. If there are few innate properties (beyond “merge”), then there is **no justification** for the idea of universals-testing on the basis of building-block uniformity, or for the natural-kinds programme (cf. Haspelmath 2020a).

A 21st century Chomskyan must resort to the measurement uniformity approach in order to test universal claims.

5. Nonconventional aspects of Human Language

recall **general linguistics paradox?**

We want to explore and understand the nature of Human Language, but what we can observe directly is particular languages. (Haspelmath 2020b)

answer: (– we study **universals**)

– alternatively: we study nonconventional aspects of Human Language

“Alternatively, in order to demonstrate an innate grammar toolbox, one needs to establish **correspondences between stimulus poverty and universals observed in languages**. Arguments from the poverty of the stimulus are often invoked in general terms (e.g. Lasnik & Lidz 2016), but it is rarely clear what exactly is predicted and explained by such considerations.” (from my abstract)

6. Conclusion

- General linguists **must study universals** (or nonconventional aspects of language).
- Universals **must be tested** – it is not enough to assume them (and lead a happy life).
- Testing can happen through **uniform measurements**, or through hypothesized **innate building blocks** (the latter is extremely laborious).
- Innate building blocks can perhaps be discovered through a Bakerian **natural-kinds programme**, but this programme was given up by Chomsky in the 21st century

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