Some universals of grammar
with particular reference to coding asymmetries (4)

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1. The eight theoretical questions of linguistics

cf. Tinbergen's (1963) four explanatory questions of behavioural biology

Tinbergen's four questions

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Tinbergen's four questions, named after Nikolaas Tinbergen and based on Aristotle's four causes, are complementary categories of explanations for behaviour. These are also commonly referred to as **levels of analysis**.[1] It suggests that an integrative understanding of behaviour must include both a proximate and ultimate (functional) analysis of behaviour, as well as an understanding of both phylogenetic/developmental history and the operation of current mechanisms.[2]

Table of categories [edit]

		Diachronic versus synchronic perspective	
		Dynamic view *Explanation of current form in terms of a historical sequence*	**Static view** *Explanation of the current form of species*
How vs. why questions	**Proximate view** *How* an individual organism's structures function	**Ontogeny (development)** Developmental explanations for changes in *individuals*, from DNA to their current form	**Mechanism (causation)** Mechanistic explanations for how an organism's structures work
	Ultimate (evolutionary) view *Why* a species evolved the structures (adaptations) it has	**Phylogeny (evolution)** The history of the evolution of sequential changes in a *species* over many generations	**Function (adaptation)** A species trait that solves a reproductive or survival problem in the **current** environment

– Like biologists, linguists can profit from accepting explanatory pluralism (or theoretical pluralism) as a foundational principle for their field.

– Different theoretical questions coexist and have answers at different levels of analysis, and none is reducible to the others.
The questions complement each other, and there is space for different methods and different subcommunities in the field whose approaches are not necessarily in tension.

theoretical linguistics ≠ general linguistics

• THEORETICAL QUESTIONS must be distinguished clearly from GENERAL QUESTIONS in linguistics (a distinction that is often neglected in practice).

• A theoretical question is a question about an explanation (not about data or about possible practical applications), and we can ask such questions either about PARTICULAR LANGUAGES, or about Human Language in general.

• A <u>general</u> question, by contrast, is a question about Human Language in general (and it will typically be a theoretical question, though applied linguists also have many general questions).

• we must distinguish between GENERAL LINGUISTICS
(e.g. de Saussure 1916; Robins 1964), which studies Human Language,
and THEORETICAL LINGUISTICS, which contrasts with applied linguistics.

the eight questions

		particular languages (particular linguistics)	Human Language (general linguistics)
proximate static	**mechanistic**	How does a particular language work?	How does language (in general) work?
proximate dynamic	**ontogenetic**	How is a particular language acquired by its speakers?	How does language grow in human children?
ultimate static	**functional-adaptive**	What are the functions of the parts of a particular language?	How is language adapted to its users' needs?
ultimate dynamic	**phylogenetic**	How did a particular language arise and change?	How does language evolve and change?

2. Mutational and functional-adaptive explanations

– Cristofaro (2013; 2014; 2017; 2019):
>   a range of cross-linguistic phenomena that have been given
>   functional-adaptive explanations (especially in terms of efficiency) are
>   better explained from a source-oriented perspective

– e.g. differential object marking (Cristofaro 2019: 28):

> This explanation, however, is not supported by the available diachronic evidence about the origins of the relevant grammatical configurations across languages. In many cases where accusative or ergative alignment is restricted to particular NP types, the relevant alignment pattern is a result of the development of an accusative or ergative marker through the reinterpretation of a pre-existing element with similar distributional restrictions. In some cases, for example, accusative markers restricted to pronominal, animate or definite direct objects are structurally identical to topic markers. This is illustrated in (2) for Kanuri.
>
> (2) Kanuri (Nilo-Saharan; Cyffer 1998: 52)
>
>   a. Músa shí-ga   cúro.
>   Musa 3SG-ACC saw
>
>   'Musa saw him.'
>
>   b. wú-ga
>   1SG-as.for
>
>   'as for me'
>
> In such cases, the accusative marker plausibly originates from the topic marker in contexts where the latter refers to a P argument and is reinterpreted as a marker for this argument ('As for X' > 'X ACC': see, for example, Rohlfs 1984 and Pen-

– Cristofaro does not talk about "constraints on change"
(= **mutational constraints**, cf. Haspelmath 2019), but if these source patterns are not *constrained* to be the only possible source patterns, then we have no explanation of the universal trends.

(cf. Collins 2019: "Some language universals are historical accidents" – this is impossible by definition)

– We saw earlier that coexpression universals are apparently often motivated by mutational constraints, rather than by the efficiency of particular coexpression patterns (or by biocognitive-representational constraints)

– and word order universals sometimes seem to be explained by mutational constraints as well.

– Dryer (2019): some Greenbergian ordering correlations seem to be due to the normal source constructions, especially:

the correlation between **adposition order** and **noun/verb order**
(in nominals and clauses)

e.g.   below the tree   <   be + low(N) + (of) the tree
         concerning the news   <   it concerns(V) the news

Table 1: Order of adposition and noun phrase in VO languages

	Africa	Eurasia	Oceania	N.America	S.America	TOTAL
VO & Po	10	6	3	5	15	39
VO & Pr	[37]	[25]	[48]	[27]	15	152

Table 2: Order of adposition and noun phrase in OV languages

	Africa	Eurasia	Oceania	N.America	S.America	TOTAL
OV & Po	[25]	[45]	[82]	[28]	[41]	221
OV & Pr	3	2	5	0	1	11

Table 6: Typical meanings associated with adpositions

Typical meanings associated with adpositions that come from verbs	Typical meanings associated with adpositions that come from nouns
benefactive ('for') instrumental ('with') comitative ('with') similative ('like') allative ('to, toward') general locations ('at') adpositions marking direct objects	specific locations like 'under', 'behind', 'in front of' 'because of'

Some languages have verb+object order and genitive + noun order, e.g.

Table 8: Prepositions and postpositions of Logba

Prepositions		Postpositions	
fɛ	'at'	nu	'inside'
na	'on'	etsi	'under'
kpɛ	'instrumental, comitative'	tsú	'on'
gu	'about'	ité	'in front of'
dzígu	'from'	zugbó	'on'
		yó	'surface contact' (e.g. on a wall)
		anú	'at tip of, at edge of'
		otsoe	'on the side of'
		amá	'behind'

But Dryer (2019) does not claim that all word order universals have a mutational explanation:

Table 19: Pairs of elements that correlate with the order of verb and object

Verb patterner	Object patterner	Example
verb	adpositional phrase	*slept + on the floor*
verb	manner adverb	*ran + slowly*
copula verb	predicate	*is + a teacher*
'want'	VP	*wants + to see Mary*
noun	relative clause	*movies + that we saw*
adjective	standard of comparison	*taller + than Bob*
complementizer	clause	*that + John is sick*
question particle	sentence	
adverbial subordinator	clause	*because + Bob has left*

For none of these pairs of elements that correlate with the order of verb and object is there a convincing explanation in terms of grammaticalization. For example, the order of verb and adpositional phrase most likely correlates with the order of verb and object because of semantic similarities between these two pairs of elements or because of processing factors. It is hard to imagine an explanation in terms of grammaticalization for this correlation.

See also Diessel (2019) on the order of adverbial clauses (conditional, temporal, causal, purposive), which may sometimes be explained by the earlier order, but not always.

Cost scale of explanatory factors (Haspelmath 2019: 16)

> What are we to do when there are several possible explanations, using different kinds of causal factors? For example, what do we do when word-order correlations can be explained either by functional adaptation (processing efficiency, Hawkins 2014) or by mutational constraints? Or when case-marking splits can be explained either by Universal Grammar (Kiparsky 2008: §2.3) or by efficiency of coding?
>
> The answer is that there is a COST SCALE of constraints:

(3)   less costly ⟵————————————————⟶ more costly

mutational > functional-adaptive > representational constraints

:

> The "cheapest" type of explanation is the mutational mode, because language change can be observed, and if we find that certain changes simply do not occur (for whatever reason), we do not need to make more far-reaching claims. Thus, Bybee (2010: 111) discusses the Greenbergian word order correlations and notes that "grammaticalization gives us the correct orders for free" – a formulation that reflects the assessment that mutational constraints do not involve any additional "cost".[13]

How do we know whether a functional-adaptive explanation is required?

Haspelmath (2019), Michaelis (2019):

When there is **multi-convergence** of diachronic pathways – i.e. when different kinds of source constructions give rise to the same kind of adapted outcome.

How does asymmetric coding arise?
 – by phonetic shortening of the more frequent form
 – by lengthening of the less frequent form

e.g. Michaelis (2019):

Table 1: Some types of correspondences of dependent and independent person-forms

Pattern type	Language	Dependent person-form	Independent person-form	Source
identical	Mandarin Chinese	*wo de shu* I GEN book 'my book'	*wo de* I GEN 'mine'	
additional marker	Lezgian	*zi ktab* I.GEN book 'my book'	*zi-di* I.GEN-SUBST 'mine'	Haspelmath (1993: 110)
additional stem	Kanuri	*fewá-ndé* COW-1PL.POSS 'our cows'	*kaá-nde* INDEP-1PL 'ours'	Cyffer (1998: 31f.)
additional article	Italian	*mia sorella* 'my sister'	*la mia* 'mine'	Schwarze (1988: 44,286f.)
longer form	Coptic	*p-ek-ran* ART-2SG-name 'your name'	*p-ô-k* ART-INDEP-2SG 'yours'	Haspelmath (2015: 277)

We see multi-convergence in many different kinds of phenomena, e.g. in differential object marking, which can be due to *differential preservation* of an old contrast:

e.g. German	*der Linguist*		*der Bovist* ‚puffball'
	den Linguist-en		*den Bovist*
	der Bote	'messenger'	*der Knoten* ‚knot'
	den Bote-n		*den Knoten*

The source construction cannot always provide an explanation

Another example is differential A marking – in some Indic languages, the locuphoric (1st/2nd person) independent pronouns lack an ergative marker, e.g. Punjabi:

maĩ	*kamm*	*kita*	'I did the work'
o-ne	*kamm*	*kita*	'She did the work.'

https://www.ling.uni-konstanz.de/typo3temp/secure_downloads/
82196/0/6fdd288ee18f859e78c57e79e16fca8a2d788a60/Ergativity_in_Indo-Aryan.htm

The ergative construction in Hindi-Urdu and Punjabi (two closely related languages) arose from a passive-like construction with an oblique agent. All agents must have been marked oblique at the beginning.

Outcomes can be explained adaptively even if the nature of the change is unclear.

Functional-adaptive explanations need not **demonstrate** that the functional-adaptive causal force was present when the construction arose.

> [I]n language universals, causal factors are linguistic changes that create particular synchronic states, and the existence of massive cross-language similarity in synchronic states implies powerful parallels in linguistic change. … the validity of a principle as explanatory can only be maintained if it can be shown that the same principle that generalizes over the data also plays a role in the establishment of the conventions described by the generalization. (Bybee 1988: 352)

– but Bybee seems to see the changes as causal factors – she does not seem to envisage the possibility of a "pull force" that increases the probability of a change toward a particular kind of outcome

– Bybee formulates the requirement that one should be able to demonstrate that the functional-adaptive plays a role in the change, but this is too strong.

– The primary evidence for a functional-adaptive explanation is the fit between the causal factor and the observed outcome (Haspelmath 2019: 14).

Cristofaro (2019: 39) doubts the synchronic usefulness:

> In evolutionary biology, however, there is direct evidence for adaptiveness, in that particular genetic traits make it demonstrably more likely for the organisms carrying them to survive and pass them on to their descendants. For languages, on the other hand, there is generally no evidence that the fact that some grammatical configuration conforms to the principles postulated in result-oriented explanations, for example economy, makes it more likely for that configuration to spread and survive in a speech community. In fact, there is a long tradition of

But there is quite a bit of evidence from psycholinguistic experiments showing that certain word orders are easier to process than others, and also that certain markers are preferably used when they are needed (e.g. Fedzechkina et al. 2012 on differential object markers).

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