

Typology 3

Universals I: Types of Universals, Greenberg's Universals

1. Survey

Preliminary remarks: - strongly empiricist approach
- an unattested language is not necessarily an impossible language

1.1. Unrestricted and implicational universals

Unrestricted universals: All languages belong to a particular type/value on some parameter, and the other type(s) on the same parameter is/are not attested (or extremely rare).

Implicational universals: This type of universals states a dependency between two logically independent parameters (with one parameter usually consisting of two types/values). From the four logically possible types only three are attested.

Absolute universals: Universals which apply to all the languages of the world, that is, exceptionless universals

Statistical universals: Universals that apply to a large degree (some 95%), but not to 100%.

	unrestricted	implicational
absolute	Type A	Type C
statistical	Type B	Type D

Table 1: Types of universals

Type A:

- (1) All the languages of the world have vowels and consonants.
- (2) All the languages of the world have yes/no-questions.
- (3) Greenberg's Universal 42 (Greenberg 1966:96):
All languages have pronominal categories involving at least three persons and two numbers.

On a more abstract level, the assumption on the language capacity in terms of Chomsky also belong to this type. The properties of Universal Grammar applies to all the languages of the world.

Type B:

- (4) All most all the languages have nasal consonants. (Exceptions: Salish)
- (5) Greenberg's Universal 1 (Greenberg 1966:77):
In declarative sentences with nominal subject and object, the dominant order is almost always one in which the subject precedes the object.

Types C and D:

Standard implicational universals are based on two mutually independent parameters P and Q which can both be true or false from a logical perspective in the sense of attested or unattested in the world's languages. Thus there are four logical possibilities:

- (6) a. P & Q
b. P & -Q
c. -P & Q
d. -P & -Q

All the options except (6b) P & -Q are possible. Also see the tetrachoric table below:

	P	-P
Q	+	+
-Q	-	+

Table 2: standard implicational universal

Implicational universals represent an application of propositional logic to typology. The pattern in the tetrachoric table basically matches the values of „true“ and „false“ in the truth table for implication. As we have seen above, standard implicational universals allow for all the combinations of P and Q but P & -Q. This parallels propositional logic in which an assertion consisting of Q and P is false iff the first part of the assertion is true and the second is false. In this sense, we can say in typology that P implies Q ($P \supset Q$). Consequently, a standard implicational universal is not reversible, $Q \supset P$ is false, because there is also -P & Q (cf. table 7). However, $-Q \supset -P$ is true.

(7) Linguistically attested types			Truth table (T = True, F = False)			
P	Q	combination/type attested	P	Q	$P \supset Q$	
a.	yes	yes	yes	T	T	T
b.	yes	no	no	T	F	F
c.	no	yes	yes	F	T	T
d.	no	no	yes	F	F	T

Example:

- (9) Hawkins (1983): Universal (IX'): $NG \supset NRel$
If in a language the genitive follows the noun, then the relative clause follows likewise.

	NG	GN
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NRel	+	+
RelN	-	+

Table 3: tetrachoric representation of Hawkins' (1983) universal VI'

(10) NG & NRel: Thai

a. *bâan khun-pho^o^o*
 house father
 ',father's house'

b. *bâan [thîi pho&m jàag-cà? sy<y]*
 house REL I want buy
 ',the house I want to buy'

(11) GN & RelN: Chinese

a. [*fûqin de*] *fángzi*
 father ATTR house
 ',father's house'

b. [*wò& yào ma&i de*] *fángzi*
 I want buy ATTR house
 ',the house I want to buy'

(12) GN & NRel: German

a. *das Haus des Vaters*

b. *das Haus, das ich kaufen möchte*

Another type of implicational universals: **Reversible implicational universals**: logical relation of equivalence, that is, the combination of two assertions P and Q is true only if both have the same truth value. The formal representation of equivalence relations is $P \equiv Q$.

	P	-P
Q	+	-
-Q	-	+

Table 4: Tetrachoric representation of a reversible implicational universal

(13) Linguistically attested types

Truth table (T = True, F = False)

	P	Q	combination/type attested	P	Q	$P \equiv Q$
a.	yes	yes	yes	T	T	T
b.	yes	no	no	T	F	F
c.	no	yes	no	F	T	F
d.	no	no	yes	F	F	W

Example:

(14) Greenberg's Universal 2 (1966: 78):

In languages with prepositions, the genitive almost always follows the governing noun, while in languages with postpositions it almost always precedes.

	NG	GN
Prep	+	-
Postp	-	+

Table 5: Greenberg's (1966) universal 2 in a tetrachoric table

- (15) NG & Prep: German
 a. das Haus des Direktors
 b. vor dem Haus
- (16) GN & Postp: Turkish
 a. müdür-ün ev-i
 director-GEN house-POSS:3s
 ,the house of the director'
 b. ev-in ön-ün-de
 house-GEN front-GEN-LOC
 ,in front of the house'

1.2. Hierarchies

Implicational universals can be combined to chains of implicational hierarchies:

- (17) Universal (III) (Hawkins 1983: 66):

If a language has Prep word order, then if the adjective follows the noun, the genitive follows the noun; i.e., Prep \supset (NA \supset NG).

- (18) Universal (XIV): PREPOSITIONAL NOUN MODIFIER HIERARCHY (PrNMH)

Prep \supset ((NDem/NNum \supset NA) & (NA \supset NG) & (NG \supset NRel))

For details cf. handout 4, p. 3)

- (18') Rel < Gen < Adj < {Dem, Num}

Other hierarchies:

- (19) Singular < Plural < Dual < Trial¹

- (20) Accessibility hierarchy (on an example of that hierarchy, cf. later):

Subject < Object < Oblique

¹ Universal 34: No language has a trial number unless it has a dual. No language has a dual unless it has a plural. (Greenberg 1963/1966:94)

(21) Animacy hierarchy (on an example of that hierarchy, cf. later):

1/2 person < 3 [+human] < 3. [+animate] < 3. [-animate]

1.3. Semantic maps

Specific functions are arranged within a semantic or functional space. Those functions which are expressed by a single marker in at least one language take adjacent positions in that space. Thus, the concept of the semantic map is based on the idea that it is really possible to draw a map which applies to all the languages of the world. Semantic maps do not only show semantic similarities between different uses of one and the same marker, they also provide testable predictions about possible language systems. Moreover, semantic maps can be used to project diachronic developments (e.g. processes of grammaticalization).

Example: Intransitive predication (also cf. handout 1, pp. 10 – 14; Stassen 1997)

As we have seen, there are four different subcategories of intransitive predication:

- Location Predicate (L)
- Event Predicate (V)
- Class-Membership Predicate (N)
- Property-Concept Predicate (A)

How can we arrange these four subcategories within a conceptual space/semantic map?

Stassen's (1997: 578 – 581) arranges these subcategories in a two-dimensional space with the following two coordinates:

Vertical axis: Time stability

- Event (V) [-time stable]	increasing time stability	↓	V
- Property (A) [±time stable]		A	
- Class (N) [+time stable]		↓	N

Horizontal axis: Locational specification

Location is about as time stable as Event, but it differs from the other three categories because it situates an argument in real space.

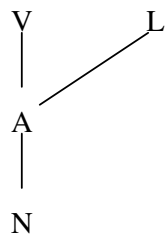


Figure 1: Semantic map (Stassen 1997: 581)

2. Language typology and research on universals

At first glance, typology and research on universals seem to exclude each other. Typology deals with variation, research on universals deals with invariance. In reality, both approaches are mutually dependent (Comrie 1981/1989):

- Typology matters for research on universals: Without knowing individual types of structural variation it is impossible to find out which logically possible structural variants cannot cooccur.
- Research on universals matters for typology: If language typology tries to set up classificational criteria for all the languages of the world, it can only do this on the basis of parameters which are universal.
- It is only possible to find universal abstractions if the parameters are adequate. The selection of the parameters at the beginning of a research project has a lot to do with good intuition.

3. Greenberg (1966)

3.1. Greenberg's sample

	VSO	Pr	NA	ND	NNum
Basque	III	-	x	x	-
Berber	I	x	x	x	-
Burmese	III	-	x ¹	-	- ²
Burushaski	III	-	-	-	-
Chibcha	III	-	x	-	x

Finnish	II	-	-	-	-
Fulani	II	x	x	x	x
Greek	II	x	-	-	-
Guaraní	II	-	x	-	0
Hebrew	I	x	x	x	-
Hindi	III	-	-	-	-
Italian	II	x	x ³	-	-
Kannada	III	-	-	-	-
Japanese	III	-	-	-	- ²
Loritja	III	-	x	x	x
Malay	II	x	x	x	- ²
Maori	I	x	x	-	-
Masai	I	x	x	-	x
Maya	II	x	-	-	- ²
Norwegian	II	x	-	-	-
Nubian	III	-	x	-	x
Quechua	III	-	-	-	-
Serbian	II	x	-	-	-
Songhai	II	-	x	x	x
Swahili	II	x	x	x	x
Thai	II	x	x	x	- ²
Turkish	III	-	-	-	-
Welsh	I	x	x ³	x	-
Yoruba	II	x	x	x	x
Zapotec	I	x	x	x	-

I = VSO, II = SVO, III = SOV.

Footnotes (Greenberg 1966:108):

¹Participle of adjective-verb, however, precedes and is probably as common as adjective following.

²Numeral classifiers following numerals in each case. The construction numeral + classifier precedes in Burmese and Maya, follows in Japanese and Thai, and either precedes or follows in Malay.

³In Welsh and Italian a small number of adjectives usually precede.

3.2. *Some of Greenberg's universals*

3.2.1. On the positions of Subject, Object, Verb (S, O, V)

Logically possible word order types:

(17) SVO, SOV, VSO, VOS, OSV, OVS

Types attested in Greenberg's sample: VSO = 6, SVO = 13, SOV = 11.

Universal 1: In declarative sentences with nominal subject and object, the dominant order is almost always one in which the subject precedes the object.

(Greenberg 1966: 77)

On alternative word order types within one and the same language:

Universal 6: All languages with dominant VSO order have SVO as an alternative or as

the only alternative basic order. (Greenberg 1966: 79)

Universale 7: If in a language with dominant SOV order, there is no alternative basic order, or only OSV as the alternative, then all adverbial modifiers of the verb likewise precede the verb. (This is the rigid subtype of III.) (Greenberg 1966: 80)

Some correlations between basic word order (VSO = I, SVO = II, SOV = III) and adpositions (PR = preposition, Po = postposition), Genitive-Noun/Noun-Genitive

	VSO (I)	SVO (II)	SOV (III)
Po-A	0	1	6
Po-N	0	2	5
Pr-A	0	4	0
Pr-N	6	6	0

Table 6

Po = Postposition, Pr = Preposition, A = Adjective in front of Noun, N = Noun in front of Adjective.
 Po-A: Languages with Postpositions and the sequence Adjective-Noun
 Pr-N: Languages with prepositions and the sequence Noun-Adjective

Universal 3. Languages with dominant VSO order are always prepositional.²

Universal 4: With overwhelmingly greater than chance frequency, languages with normal SOV order are postpositional. (Greenberg 1963/1966:79)

The position of Gen correlates to a high degree with adpositions. Thus, one would expect SOV languages to have Genitive-Noun order. But there are some exceptions. However, what is remarkable is the fact that whenever the position of the genitive deviates from what is to be expected the position of the adjective does the same:

Universal 5: If a language has dominant SOV order and the genitive follows the governing noun, then the adjective likewise follows the noun. (Greenberg 1966:79)

Universal 17: With overwhelmingly more than chance frequency, languages with dominant order VSO have the adjective after the noun.
 (Greenberg 1966: 85)

As we know from French, the position of the adjective is not consistently the same in one and the same language. In French, the majority of adjectives follows the noun, but there is a minority which precedes it:

- (18) a. J'ai un pensionnaire *pauvre*.
 b. J'ai un *pauvre* pensionnaire.

Universal 19: When the general rule is that the descriptive adjective follows, there may be a minority of adjectives which usually precede, but when the general rule is that descriptive adjectives precede, there are no exceptions.
 (Greenberg 1966: 87)

² There are exceptions to this universal which are also mentioned by Greenberg (1966): Iraqw (South Cushitic), Khamti (Tai), Persian and Amharic.

On the position of Demonstratives and Numerals:

	NA	AN
Dem-N	12	7
N-Dem.	11	0
Num-N	8	10
N-Num.	11	0

Table 6: The positions of demonstratives/numerals in relation to AN/NA

Universal 18: When the descriptive adjective precedes the noun, the demonstrative and the numeral, with overwhelmingly more than chance frequency, do likewise. (Greenberg 1966: 86)

Universal 20: When any or all the items (demonstrative, numeral, and descriptive adjective) precede the noun, they are always found in that order. If they follow, the order is either the same or its exact opposite. (Greenberg 1966: 87)

Affixation and basic word order:

	VSO	SVO	SOV
Exclusively prefixing	0	1	0
Exclusively suffixing	0	2	10
Both	6	10	1
	Pr	Po	
Exclusively prefixing	1	0	
Exclusively suffixing	0	12	
Both	15	2	

Table 7: Prefixation/Suffixation and basic word order

Universal 27: If a language is exclusively suffixing, it is postpositional; if it is exclusively prefixing, it is prepositional. (Greenberg 1966:93)

3.3. Greenberg's explanations

- Dominance/recessivity, harmony/disharmony
- Proximity and logical/psychological explanations
- Discontinuity in hierarchies
- Iconicity
- *Parsing* with regard to the clause-final position
- Discourse (with regard to the position of topic)

I shall concentrate on dominance/recessivity and harmony/disharmony in this course.

Dominance: The dominant value/type of a parameter in an implicational universal is that value/type which can occur with both values of the other parameter. In table

3 (repeated below), NRel dominates ReIN, because it can occur with both values of the NG/GN parameter (ReIN can only occur with GN). In the NG/GN parameter, GN dominates NG, because it can occur with both values of the NRel/ReIN parameter (NG can occur only with NRel).

	NG	GN
NRel	+	+
ReIN	-	+

Table 3: tetrachoric representation of Hawkins' (1983) universal VI'

Recessivity: That value/type of a parameter which is not dominant is recessive.

Harmony/

Disharmony The value of one parameter is harmonic with the value of another cross-cutting parameter if it occurs *only* with that other value. In table 3, the following word-order types are harmonic:

NG is harmonic with NRel (NG cannot occur with ReIN)

ReIN is harmonic with GN (ReIN cannot occur with NG)

Harmonies are not reversible in standard implicational universals, that is, NRel is not harmonic with NG (because NRel can also occur with GN) and GN is not harmonic with ReIN (because GN can also occur with NRel).

The principles of dominance and harmony are competing motivations which account for the existence of variation in language types. In this model, no one language model is optimal because the principles governing the existence of language types are in conflict:

In Greenberg's word-order analysis, dominance favors some word order, such as NA, absolutely, while harmony will favor an alignment of the adjective with other modifiers. Since for some modifiers, modifier-noun order is dominant, and for others, noun-modifier order is dominant, a language cannot be harmonic without having some recessive orders. However, an order cannot be both recessive and disharmonic at the same time. This is the interaction between dominance and harmony that Greenberg described with his principle, and which accounts in a single stroke for the unattested types in the tetrachoric tables for word-order types.

(Croft 1990: 57)

The principle of harmony

With the principle of harmony one can account for universals 3 and 4 as follows:

For the moment it may be noted that the relations between types I, II, and III and Pr/Po may now be recapitulated in these terms: Type I has VS which is harmonic with prepositions, and SO which is likewise harmonic with prepositions. Further, prepositions are dominant. All languages of type I, in fact, are prepositional. Type II has SV which is harmonic with postpositions and VO which is harmonic with prepositions, and prepositions are dominant. In fact, a definite majority of

languages of type II have prepositions. Type III has SV and OV, both of which are harmonic with postpositions. However, prepositions are dominant. In fact, the preponderant majority of languages which have type III have postpositions, with but a handful of exceptions. (Greenberg 1966: 98)

Harmony and the order of VSO/SVO/SOV, NG/GN, VS/SV, VO/OV, NA/AN

We may summarize these results by stating that all of the following are directly or indirectly harmonic with each other: prepositions, NG, VS, VO, NA. We have here a general tendency to put modified before modifier, and the most highly 'polarized' languages in this direction are those of type I with NG and NA, a considerable group of languages. The opposite type is based on harmonic relations among postpositions, GN, SV, OV, and AN. This is also a very widespread type, as exemplified by Turkish and others in the present sample. On the other hand, the general dominance of NA order tends to make languages of the Basque type (i.e., III/Po/NA with GN order) very nearly as common as the Turkish type.

(Greenberg 1966:100)

Examples:

The type Prep, NG, VS, VO, NA: **Arabic**

- (19) a. fî@ l-bayt-i b. mina l-bayt-i
 in ART-house-GEN from ART-house-GEN
 'in the house' ,from the house'
- (20) ba@b-u l-bayt-i
 door-NOM ART-house-GEN
 'the door of the house'
- (21) yas&tag%ilu t5-t5a@lib-u.
 work:IMPV:3sm ART-student-NOM
 'The student is working.'
- (22) tata' allamu@na l-lug%a-t-a l-' arabi-yya-t-a.
 learn:IMPV:2pm ART-language-FEM-ACC ART-arab-ADJ-FEM-ACC
 You are learning Arabic.'
- (23) bayt-un kabî@r-un
 house-NOM:INDEF big-NOM:INDEF
 'a big house'

The type Postp, GN, SV, OV, AN: **Turkish:**

- (24) a. vapur ile b. yolculuk iCin
 boat with journey for
 'with a boat' 'for the journey'
- (25) ev-in bahCe-si
 Hose-GEN garden-POSS:3s
 'the garden of the house'
- (26) Ali gel-di.
 Ali come-PST:3s
 'Alicame.'

- (27) ev-in bahCe-si-n-i gör-dü-m.
 house-GEN garden-POSS:3s-C-ACC see-PST-1s
 'I saw the garden of the house.'
- (28) güzel bahCe
 beautiful garden
 'the beautiful garden'

The type Postp, GN, SOV, NA: **Basque**

- (29) a. asto-ari b. asto-rekin c. asto-aren-tzat
 donkey-to donkey-with donkey-GEN-for
 'to the donkey' 'with the donkey' 'for the donkey'
- (30) a. gizon-aren erlojua (2b) etxe-ko zakurra
 man-GEN watch house-GEN dog
 'the man's watch' 'the dog of the house' (genitive of location)
- (31) ni-k gizona-ri liburua d-a-kar-kio-t.
 I-ERG man-DAT book:ABS I.bring.it.to.him
 'I bring the man a book.'
- (32) a. buru handi b. zapata berri-ak
 head big shoe new-PL
 'a big head' 'new shoes'

The principle of dominance

The dominance of SV as well as of NA seems to be motivated by topic-comment structures:

It may be suggested, however, that noun-adjective predominance arises from the same factor as that which makes subject-verb the dominant order. In Hockett's terminology, there is a general tendency for comment to follow topic. There is some evidence that noun-adjective does parallel subject verb in this way. In many languages all adjectival notions are treated as intransitive verbs. The qualifying adjective is then a relative or participle of the verb. The tendency of relative clauses, it has been seen, is even stronger than that of adjectives to follow the noun. (Greenberg 1966:100)

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