

Variability of languages in time and space

Typology of syntactic features

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Word order across languages

One of the primary ways in which languages differ from one another is in the order of constituents, or, as it is most commonly termed, their word order. (Dryer 2007)

Does zoology include people? It includes all the animal ancestors from whom man derived his instincts. That paper deals with the instincts of predators. What you might call the criminal class of the animal world. Lady animals figure very largely as predators. Put on the overhead light if you like. The switch is by the door. If the storm worries you that much, I'll get you something to drink.

Schließt Zoologie auch Menschen ein? Sie schließt alle Tiere ein, von denen der Mensch seine Instinkte hat. In der Abhandlung geht es um Raubtiere. Die Verbrecher der Tierwelt. Weibchen spielen bei Raubtieren eine große Rolle. Schalten Sie ruhig das Oberlicht an. Der Schalter ist neben der Tür. Warum setzen Sie sich nicht? Falls der Sturm Sie sorgt, besorge ich Ihnen etwas zu trinken.

Zahrnuje zoologie i lidi? Zahrnuje všechny živočišné předky, od kterých člověk zdědil své instinkty. Ten článek se zabývá predátory. Zločineckou třídou živočišného světa. Samice živočichů figurují velmi výrazně jako predátoři. Rozsviňte si světlo, jestli chcete. Vypínač je u dveří. Proč se neposadíte? Jestli vás ta bouře tak znervózňuje, přinesu vám něco na pití. (InterCorp via KonText)

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- Word order typology
 - subject, verb, object
- Splitting the triplet
- Correlations between the word order type and other features

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Word order typology

Joseph H. Greenberg: *Universals of Language*. MIT Press 1963.

the order of 3 sentence elements in indicative sentences: subject S, verb V, object O

- En. (a) *Julia.S saw.V a dog.O in the garden.*
(b) *In the garden, Julia.S saw.V a dog.O.*
(c) *A dog.O Julia.S saw.V in the garden.*
(d) **A dog.O saw.V Julia.S in the garden.*
(e) **Julia.S a dog.O saw.V in the garden.*
(f) **Saw.V Julia.S a dog.O in the garden.*
(g) **Saw.V a dog.O Julia.S in the garden.*

- Ger. (a) *Julia sah einen Hund im Garten.*
(b) *Im Garten sah Julia einen Hund.*
(c) *Einen Hund Julia sah im Garten.*
(d) *Einen Hund sah Julia im Garten.*
(e) **Julia einen Hund sah im Garten.*
(f) **Sah Julia einen Hund im Garten.*
(g) **Sah einen Hund Julia im Garten.*

- Cz. (a) *Julie viděla psa na zahradě.*
(b) *Na zahradě Julie viděla psa.*
(c) *Psa Julie viděla na zahradě.*
(d) *Psa viděla Julie na zahradě.*
(e) *Julie psa viděla na zahradě.*
(f) *Viděla Julie psa na zahradě.*
(g) *Viděla psa Julie na zahradě.*

Basic word order and sentence elements

- more than one word order for at least some pairs of elements in most languages
- comparison focuses on the basic word order of three basic sentence elements
- what is basic word order?
 - has a higher frequency
En. *Paul, I like vs I like Paul*
Ger. *des Vaters wegen vs für den Vater*
 - is not restricted in distribution
En. *a tall woman vs a woman taller (than the man)*
- what are basic sentence elements?
 - subject and object defined semantically
 - subject as Actor with a transitive verb in active voice
 - object as Patient with a transitive verb in active voice
 - En. *The kid draws a picture.*

Types of basic word order

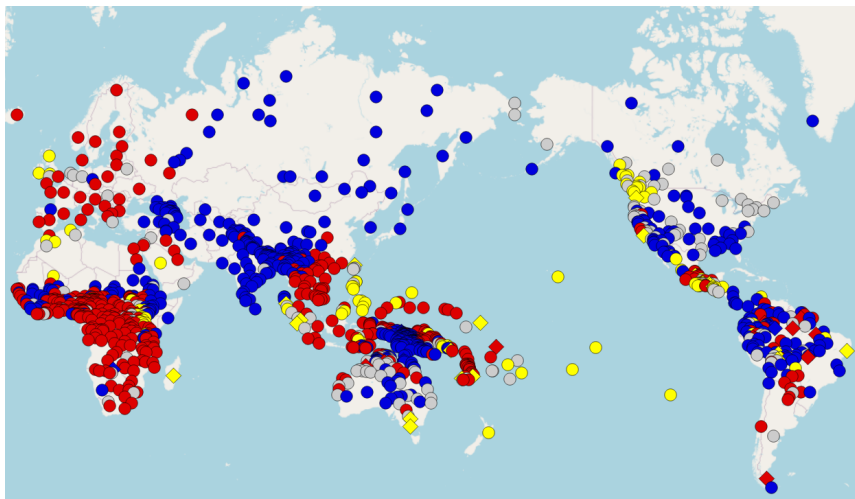
SVO	English	<i>The dog</i>	<i>chased</i>	<i>the cat.</i>
		The dog	chase. PAST	the cat
		S	V	O
SOV	Basque	Jon	sendagileari	joan zaio.
		Jon	doctor.DAT	go AUX
		S	O	V
		Jon	went	to the doctor.
VSO	Welsh	<i>Gwelodd</i>	<i>Rhiannon</i>	<i>ddraig.</i>
		see.PAST.3S	Rhiannon	dragon
		V	S	O
		Rhiannon	saw	a dragon.
VOS	Tukang Besi	<i>No-'ita-'e</i>	<i>na kene-no</i>	<i>te ana.</i>
		3R-see-3OBJ	NOM friend-3POSS	CORE child.
		V	O	S
		The child	saw	its friend.
OVS	Urarina	<i>obana</i>	<i>itɔɸwa-a</i>	<i>katɕa</i>
		collared peccary	shoot-3Ps/A	man
		O	V	S
		The man	shot	the collared peccary.
OSV	Tobati	<i>Syaw mahai</i>	<i>nehu</i>	<i>mo-ikor-i</i>
		paddle big	1SG	CAUS-snap-3SG
		O	S	V
		I	broke	the big paddle

Order of Subject, Object and Verb in WALS

- Feature 81A: Order of Subject, Object and Verb

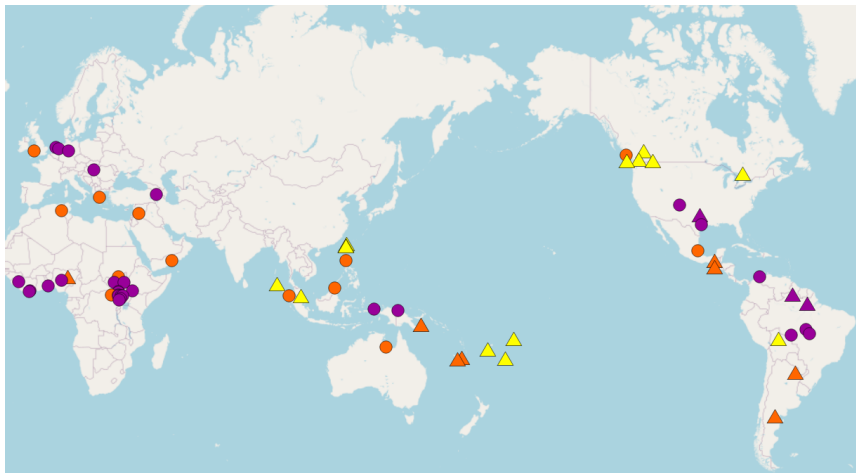
Basic word order	langs in WALS	Percentage	Ex.
SOV Subject Object Verb	564	41%	Japanese, Turkish
SVO Subject Verb Object	488	35%	English, Czech, Indonesian
VSO Verb Subject Object	95	7%	Celtic, Semitic langs
VOS Verb Object Subject	25	2%	Malagasy
OVS Object Verb Subject	11	< 1%	Asuriní
OSV Object Subject Verb	4	< 1%	Nadëb
No dominant word order	189	13%	German
Total	1376	100%	

Order of Subject, Object, and Verb (WALS Feature 81A)



● Subject-object-verb (SOV)	564	◆ Verb-object-subject (VOS)	25	◆ Object-subject-verb (OSV)	4
● Subject-verb-object (SVO)	488	◆ Object-verb-subject (OVS)	11	● Lacking a dominant word order	189
● Verb-subject-object (VSO)	95				

Two dominant orders of S, O, and V (WALS Feature 81B)



●	SOV or SVO	29	▲	SVO or VOS	8
▲	VSO or VOS	14	▲	SOV or OVS	3
●	SVO or VSO	13			

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Splitting the triplet

- it is common that at least one of the nominal items (subject, object) is substituted by a pronoun or dropped
 - subjects can be expressed by verbal affixes
 - different word orders
- focus on two of the items
 - whether the language is SV or VS
 - WALS Feature 82A: Order of Subject and Verb
 - SV 1192
 - VS 194
 - no dominant order 110
 - whether it is OV or VO
 - WALS Feature 83A: Order of Object and Verb
 - OV 712
 - VO 705
 - no dominant order 101
- just the verb in focus
 - verb-final (SOV, OSV) vs verb-initial (VSO, VOS) vs SVO (and OVS) languages

Word order within a noun phrase

- relative order of noun and adjective
Adj N (*green table*) vs N Adj (*the person concerned*)
– WALS Feature 87A: Order of Adjective and Noun
- relative order of noun and relative clause
N Rel (En. *the person (who is) concerned in this investigation*)
vs Rel N (Turkish)
– WALS Feature 90A: Order of Relative Clause and Noun
- relative order of possessive/genitive and noun
N Gen (*the hat of the man*) vs Gen N (*the man's hat*)
– WALS Feature 86A: Order of Genitive and Noun
- relative order of noun and adposition (preposition vs postpositions)
Prep N (En. *in London*) vs N Postp (Japanese *Tokyo ni*)
– WALS Feature 85A: Order of Adposition and Noun Phrase

- individual word order features are mutually correlated
 - position of the verb (verb-final vs verb-initial vs SVO languages) and
 - noun and article, noun and relative clause, noun and genitive, noun and prepositions vs postpositions
 - verb and manner adverb; main verb and auxiliary, copula and predicate
 - comparative constructions
 - question particles
- etc.

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Correlations between the word order type and other syntactic features: Verb-final languages

- Lezgian

(a Nakh-Dagestanian language spoken in the Caucasus mountains; Haspelmath 1993)

1. also subject precedes the verb (SOV)
2. also manner adverbs precede the verb
3. postpositions after the noun (rather than prepositions preceding it)
4. genitive noun phrases precede the noun
5. standard of comparison (St) followed by the marker of comparison (M) followed by the adjective

- similar features found in Slave (northern Canada; Rice 1989) and in Siroi (Papua New Guinea; Wells 1979)

ex. from Dryer (2007):

1.
Alfija-di maqna kxe-na.
Alfija-ERG article write-AORIST
S O V
Alfija wrote an article.

2.
Mirzebeg-a k'ewi-z haraj-na: " ... "
Mirzebeg-ERG strong-ADV shout-AOR
Adv V
'Mirzebeg shouted loudly: " ... "'

3.
duxtur-rin patariw
doctor-GEN.PL to
NP Po
'She went to doctors.'

4.
Farid-an wax
Farid-GEN sister
G N
'Farid's sister'

5.
sad müküda-laj žizwi ask'an-zawa
one other-SUPERL a.little low-IMPERF
St M Adj
'One is a little shorter than the other one'

Correlations between the word order type and other syntactic features: SVO languages

- more common than verb-initial, less widespread than verb-final languages
- resemble verb-initial rather than verb-final languages
- e.g. English
 1. verb between S and O
 2. manner adverbs both before and after V
 3. prepositions
 4. both the genitive precedes the noun and the noun precedes the genitive
 5. adjective – marker (M) – standard of comparison (St)
- similar features in Hmong Njua (China; Harriehausen 1990) and in Tetelcingo Nahuatl (Mexico; Tuggy 1977)

ex. from Dryer (2007):

1.

The woman saw the dog.

2.

*John slowly walked into the room.
and John walked into the room
slowly.*

3.

on the table

4.

*the box's cover and the cover of
the box*

5.

*Nancy is more intelligent. Adj
than. M Jeff. St*

Features correlated with the order of O and V (Dryer 2007)

verb-final languages	verb-initial languages
postpositions	prepositions
genitive – noun	noun – genitive
manner adverb – verb	verb – manner adverb
standard – marker	marker – standard
standard – adjective	adjective – standard
final adverbial subordinator	initial adverbial subordinator
adpositional phrase – verb	verb – adpositional phrase
main verb – auxiliary verb	auxiliary verb – main verb
predicate – copula	copula – predicate
final question particle	initial question particle
final complementizer	initial complementizer
noun – article	article – noun
subordinate clause – main clause	main clause – subordinate clause
relative clause – noun	noun – relative clause
noun – plural word	plural word – noun

- SVO languages between verb-final and verb-initial

- Dryer (2007):
 - adjective and noun
 - demonstrative and noun
 - numeral and noun
 - negative particle and verb
 - tense-aspect particle and verb
 - intensifier and adjective

- Greenberg's 1963 word order universals based on a 30-language sample (see Appendix)
- studies based on massively parallel texts (Cysouw & Wälchli 2007, Östling 2015, etc.) or corpora with a common annotation scheme (= Universal Dependencies scheme; Levshina 2019, Choi et al. 2021, among others)

Word-order research: Greenberg vs. WALS

- Greenberg 1963
 - 30 languages with SVO, SOV, or VSO as dominant word orders (no VOS, OSV, and OVS languages)

Greenberg's 1963 *Universal 1*

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

- World Atlas of Language Structures (Dryer & Haspelmath 2013)
 - dominant order of subject, object, and verb specified for 1,376 languages

Order of subject, object, and verb (Feature 81A at wals.info)

dominant word order	SOV	SVO	VSO	VOS	OVS	OSV	no dominant order
# of languages	564	488	95	25	11	4	189

Word-order research: Multi-lingual datasets

- Östling 2015: New Testament translations in 986 languages
- Choi et al. 2021: 141 corpora in 74 languages from Universal Dependencies 2.7
 - the most frequent order is considered as the dominant order for a given corpus provided that it is at least twice as frequent as the next most frequent order, otherwise no dominant order (ndo)

Dominant word order according to WALS, Östling, and Choi et al.

language	genus	family	WALS	Östling 2015	Choi et al. 2021
Amharic	Semitic	Afro-Asiatic	SOV	SOV	ndo
Estonian	Finnic	Uralic	SVO	SVO	1 SVO, 1 ndo
German	Germanic	Indo-European	ndo	SOV	2 SOV, 2 ndo
Hindi	Indic	Indo-European	SOV	SOV	1 SOV, 1 ndo
Romanian	Romance	Indo-European	SVO	SVO	2 SVO, 1 ndo
Slovenian	Slavic	Indo-European	SVO	SVO	1 SVO, 1 ndo

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Appendix: Greenberg's 1963 universals i/v

- Universal 1. In declarative sentences with nominal subject and object, the dominant order is almost always one in which the subject precedes the object.
- Universal 2. In languages with prepositions, the genitive almost always follows the governing noun, while in languages with postpositions it almost always precedes.
- Universal 3. Languages with dominant VSO order are always prepositional.
- Universal 4. With overwhelmingly greater than chance frequency, languages with normal SOV order are postpositional.
- Universal 5. If a language has dominant SOV order and the genitive follows the governing noun, then the adjective likewise follows the noun.
- Universal 6. All languages with dominant VSO order have SVO as an alternative or as the only alternative basic order.
- Universal 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.)
- Universal 8. When a yes-no question is differentiated from the corresponding assertion by an intonational pattern, the distinctive intonational features of each of these patterns are reckoned from the end of the sentence rather than from the beginning.
- Universal 9. With well more than chance frequency, when question particles or affixes are specified in position by reference to the sentence as a whole, if initial, such elements are found in prepositional languages, and, if final, in postpositional.

Greenberg's 1963 universals ii/v

- Universal 10. Question particles or affixes, when specified in position by reference to a particular word in the sentence, almost always follow that word. Such particles do not occur in languages with dominant order VSO.
- Universal 11. Inversion of statement order so that verb precedes subject occurs only in languages where the question word or phrase is normally initial. This same inversion occurs in yes-no questions only if it also occurs in interrogative word questions.
- Universal 12. If a language has dominant order VSO in declarative sentences, it always puts interrogative words or phrases first in interrogative word questions; if it has dominant order SOV in declarative sentences, there is never such an invariant rule.
- Universal 13. If the nominal object always precedes the verb, then verb forms subordinate to the main verb also precede it.
- Universal 14. In conditional statements, the conditional clause precedes the conclusion as the normal order in all languages.
- Universal 15. In expressions of volition and purpose, a subordinate verbal form always follows the main verb as the normal order except in those languages in which the nominal object always precedes the verb.
- Universal 16. In languages with dominant order VSO, an inflected auxiliary always precedes the main verb. In languages with dominant order SOV, an inflected auxiliary always follows the main verb.
- Universal 17. With overwhelmingly more than chance frequency, languages with dominant order VSO have the adjective after the noun.

Greenberg's 1963 universals iii/v

- Universal 18. When the descriptive adjective precedes the noun, the demonstrative and the numeral, with overwhelmingly more than chance frequency, do likewise.
- 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.
- Universal 20. When any or all of 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.
- Universal 21. If some or all adverbs follow the adjective they modify, then the language is one in which the qualifying adjective follows the noun and the verb precedes its nominal object as the dominant order.
- Universal 22. If in comparisons of superiority the only order, or one of the alternative orders, is standard-marker-adjective, then the language is postpositional. With overwhelmingly more than chance frequency if the only order is adjective-marker-standard, the language is prepositional.
- Universal 23. If in apposition the proper noun usually precedes the common noun, then the language is one in which the governing noun precedes its dependent genitive. With much better than chance frequency, if the common noun usually precedes the proper noun, the dependent genitive precedes its governing noun.
- Universal 24. If the relative expression precedes the noun either as the only construction or as an alternate construction, either the language is postpositional, or the adjective precedes the noun or both.

Greenberg's 1963 universals iv/v

- Universal 26. If a language has discontinuous affixes, it always has either prefixing or suffixing or both.
- Universal 27. If a language is exclusively suffixing, it is postpositional; if it is exclusively prefixing, it is prepositional.
- Universal 28. If both the derivation and inflection follow the root, or they both precede the root, the derivation is always between the root and the inflection.
- Universal 29. If a language has inflection, it always has derivation.
- Universal 30. If the verb has categories of person-number or if it has categories of gender, it always has tense-mode categories.
- Universal 31. If either the subject or object noun agrees with the verb in gender, then the adjective always agrees with the noun in gender.
- Universal 32. Whenever the verb agrees with a nominal subject or nominal object in gender, it also agrees in number.
- Universal 33. When number agreement between the noun and verb is suspended and the rule is based on order, the case is always one in which the verb precedes and the verb is in the singular.
- Universal 34. No language has a trial number unless it has a dual. No language has a dual unless it has a plural.
- Universal 35. There is no language in which the plural does not have some nonzero allomorphs, whereas there are languages in which the singular is expressed only by zero. The dual and the trial are almost never expressed only by zero.

Greenberg's 1963 universals v/v

- Universal 36. If a language has the category of gender, it always has the category of number.
- Universal 37. A language never has more gender categories in nonsingular numbers than in the singular.
- Universal 38. Where there is a case system, the only case which ever has only zero allomorphs is the one which includes among its meanings that of the subject of the intransitive verb.
- Universal 39. Where morphemes of both number and case are present and both follow or both precede the noun base, the expression of number almost always comes between the noun base and the expression of case.
- Universal 40. When the adjective follows the noun, the adjective expresses all the inflectional categories of the noun. In such cases the noun may lack overt expression of one or all of these categories.
- Universal 41. If in a language the verb follows both the nominal subject and nominal object as the dominant order, the language almost always has a case system.
- Universal 42. All languages have pronominal categories involving at least three persons and two numbers.
- Universal 43. If a language has gender categories in the noun, it has gender categories in the pronoun.
- Universal 44. If a language has gender distinctions in the first person, it always has gender distinctions in the second or third person, or in both.
- Universal 45. If there are any gender distinctions in the plural of the pronoun, there are some gender distinctions in the singular also.