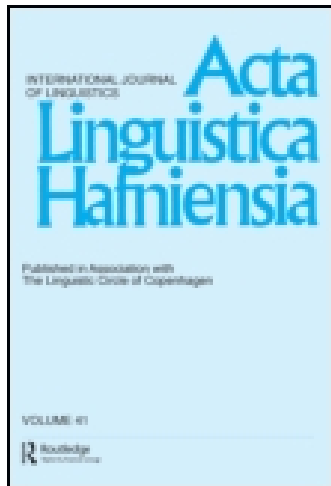


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When can a language have nouns and verbs?

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WHEN CAN A LANGUAGE HAVE NOUNS AND VERBS?

by

JAN RIJKHOFF

Abstract

Whereas in most languages nouns and verbs are distinct lexical categories, there are also languages like Samoan, in which such a distinction does not seem to serve any descriptive purpose in the grammar. This contribution is an attempt to discover what distinguishes languages in which nouns and verbs are separate word classes from languages without a rigid noun/verb distinction.

I will argue that transitivity plays an essential role in the parts-of-speech systems of languages across the globe in that a language can only have distinct classes of nouns and verbs if a subgroup of the basic lexical items in a language are semantically coded as designating a transitive relationship. There is a difference, however, in that the presence of a set of transitive items in the basic lexicon is a necessary and sufficient condition for a language to have a major, distinct class of verbs, but only a necessary condition for a language before it can have a major, distinct class of nouns.

Ultimately I will argue that a language can only have distinct classes of verbs, nouns, and adjectives if the basic meaning of lexical items somehow encodes the prototypical properties of temporal and spatial entities (events and things). The prototypical event is an activity that involves an agent and a patient, the prototypical thing is a concrete object. Thus, a language can only have major, distinct classes of verbs, nouns and adjectives if the lexicon contains (a) items that designate a dynamic relationship between an agent and a patient, and (b) items that designate a property that is specified as having a boundary in the spatial dimension.

1. Introduction¹

It is common knowledge that each language only uses a subset of all grammatical categories. Thus there are quite a few languages that do without inflectional tense (Chinese) or aspect marking (English), definite articles (Turkish), number marking (Thai), or numerals (Piraha).

It is not widely known, however, that it is also true that languages do not all employ the same set of lexical categories, such as verbs, nouns, and adjectives (adverbs will remain undiscussed in this contribution). Although it is now generally acknowledged that adjectives are not attested in all languages (e.g. Bhat 1994), it is often still assumed that each language has major (open), distinct classes of nouns and verbs (e.g. Schachter 1985: 6–7; Langacker 1987: 53–54; Whaley 1997: 59). Yet in the last couple of decades (but also in the not so recent past) several claims have been made to the effect that in certain languages (a) there are no good linguistic reasons to distinguish between nouns and verbs (Kuipers 1968; Mosel and Hovdhaugen 1992), (b) a major, distinct class of nouns is absent (Sasse 1993a; Sasse 1993b: 655f.).

One of the goals of linguistics should be to explain why languages have different parts-of-speech systems (Anward et al. 1997). This article aims to contribute to that goal by offering an answer to the question: when can a language have distinct classes of nouns and verbs? A tentative answer to this question will be provided in Sections 4–6. In Section 2 I will discuss verbs and nouns from a cross-linguistic perspective and Section 3 presents a classification of the parts-of-speech systems based on a representative sample of the world's languages.

2. Verbs and nouns: a cross-linguistic perspective

A cross-linguistic investigation of parts-of-speech systems reveals that not all languages have a distinct class of verbs or nouns (Rijkhoff 2002b). For example, it has been argued that Salish languages (spoken in the American Northwest) lack a rigid noun/verb distinction, since in these languages (Czaykowska-Higgins and Kinkade 1998: 35; see also Kuipers 1968 and Kinkade 1983)

„(1) all full words, including names, may serve as predicates and may be inflected using person markers (see also Kinkade 1976; Thompson and Thompson 1980; Nater 1984), and (2) any lexical item can become a referring expression by positioning a determiner in front of it. Work by Demers and Jelinek (1982, 1984), Jelinek (1993, 1995, 1998) and Jelinek

1. I am grateful to Hein van der Voort and Peter Harder for helpful comments.

and Demers (1994) provides additional syntactic arguments (for instance, from the properties of quantifiers and prepositions) for the view that there is no categorial distinction between nouns and verbs“²

Straits Salish (Jelinek and Demers 1994: 718)

- (1) čey=∅ cə swəy'qə'
 work=3ABS DET man
 'He works, the (one who is a) man'
- (2) swəy'qə'=∅ cə čey
 man=3ABS DET work
 'He is a man, the (one who) works'

Similar things have been said about languages that belong to the Wakashan family, such as Nootka (Sapir 1921: 133f, Hockett 1958: 225, Mithun 1999: 378). According to Swadesh (1939) all members of the lexical category 'word' can be used as a predicate and as the head of a referring expression.

Nootka (Swadesh 1939: 78)

- (3) mamə k-uma qə ʔas-ʔ₁
 working-PRES INDIC man-DEF
 'The man is working'
- (4) qə ʔas-uma mamə k-ʔ₁
 man-PRES INDIC working-DEF
 'The one working is the man'

² Examples (transcription, glosses, translation) are given as in the original source. Abbreviations used in this paper: 1 = first person, 2 = second person, 3 = third person; A = agent, ABS = absolutive, ACC = accusative, AOR = aorist, ART = article, AUX = auxiliary, BEN = beneficiary, CS = causative, DEF = definite, DEM = demonstrative, ERG = ergative, ES = ergative suffix, INDIC = indicative, INTR = intransitive, LD = locative-directional, M = masculine, NOM = nominative, NonH = nonhuman, OBJ = object, OBL = oblique, PASS = passive, PAST = past, PERF = perfect, PL = plural, PUNCT = punctual, PRES = present, PRT = participle, REF = referential marker, SER = serial, SG = singular, STAT = stative, SUB = subject, TRAN = transitive. A hyphen indicates affixing, an equal sign cliticization. The symbol ∅ indicates glottalization when it appears after a consonant and a glottal stop elsewhere. Finally, the symbol '†' before a language name means that the language is extinct.

Other languages in which a noun/verb distinction is deemed to be absent are, for example, Mundari (Hoffmann 1903 pp xx-xxi, Sinha 1975 76), Santali (MacPhail 1953 2, 9), Tongan (Broschart 1991, 1997, C Churchward 1953 16), Tagalog (Himmelman 1991), and Samoan (S Churchward 1951 126)

Tagalog (Sasse 1993b 655)

- (5) nagtatrabaho ang lalaki
 work REF man
 'The man is working'
- (6) lalaki ang nagtatrabaho
 man REF work
 'The one who is working is a man'

Regarding the noun/verb distinction in Samoan, Mosel and Hovdhaugen (1992 73, 77) write

Many, perhaps the majority of, roots can be found in the function of verb phrase and NP nuclei and are, accordingly, classified as nouns and as verbs. This does not mean that a noun can be used as a verb or a verb as a noun or that we have two homophonous words, one being a noun and the other being a verb. Rather, it means that in Samoan the categorization of full words is not given a priori in the lexicon. It is only their actual occurrence in a particular environment which gives them the status of a verb or a noun []. What is given in the lexicon, is not a particular word class assignment, but the potential to be used in certain syntactic environments as a noun or a verb [p 77]

Although certain full words seem to be used more as verb or more as a NP nucleus for semantic reasons, there are no lexical or grammatical constraints on why a particular word cannot be used in the one or the other function [p 73]

Below are some examples of roots with their verbal and nominal translations in English

Samoan (Mosel and Hovdhaugen 1992 73f, 82f)

		<u>noun phrase nucleus</u>	<u>verb phrase nucleus</u>
(7) a	teine	'girl'	'be a girl'
	b tusi	'book, letter'	'write'

c.	salu	'broom'	'sweep'
d.	ma'i	'patient, sickness'	'be sick'
e.	la	'sun'	'be sunny'
f.	fana	'gun'	'shoot'

There are also languages with a major, distinct class of verbs, but in which nouns cannot be distinguished from adjectives. Such languages include, for example, Quechua, many Australian languages (Dixon 1980: 272) as well as languages belonging to the Turkic family (Lewis 1967: 53f.; Deny et al. eds. 1959). Thus, Quechua is said to have two major word classes: a distinct class of verbs and a large class of words which „includes what in other languages would be distinguished as nouns and adjectives. These are regarded as a single class [...] because there is insufficient evidence of a strictly morpho-syntactic nature for distinguishing them (as lexical categories)“ (Weber 1989: 35). The examples below show that the Quechua counterparts of the English noun 'mayor' *alkalde* and the English adjective 'big' *hatun* can serve as a noun, as in (8) and (10), and as an adjective, as in (9) and (11).

Quechua (Schachter 1985: 17)

(8) Rikaška: alkalde-ta
 see:PAST.1SG mayor-ACC
 'I saw the mayor'

(9) chay alkalde runa
 DEM mayor man
 'that man who is mayor'

(10) Rikaška: hatun-ta
 see:PAST.1SG big-ACC
 'I saw the big one'

(11) chay hatun runa
 DEM big man
 'that big man'

Finally, there are languages with a major class of verbs but in which nouns are at best a minor word class. One such language is Cayuga (Iroquoian), in which „the majority of expressions denoting the persons and objects of everyday life are bona fide verbs“ (Sasse 1993b: 656). Thus, an English sentence like 'this man lost his wallet' would be expressed as follows:

Hengeveld (1992: 58) used the following definitions (see also Hengeveld et al forthcoming)

A *verb* is a lexeme which, without further measures being taken, has a predicative use *only*

A *noun* is a lexeme which, without further measures being taken, can be used as the head of a term (NP)

An *adjective* is a lexeme which, without further measures being taken, can be used as a modifier of a nominal head

For example, when speakers of Galala or Hausa want to express an adjectival notion such as 'big' or 'kind' attributively, they have to select a member of another word class (noun, verb) and use it in a special construction (i.e. 'special measures' are necessary) before they can modify the head of the referring expression. Speakers of Galela use a kind of relative clause (headed by a stative verb) and Hausa employs an adnominal NP (headed by an abstract noun). Notice that in Galela the first syllable of the modifying verb is reduplicated, yielding the participial form

Galela (van Baarda 1908: 35)

- (14) awi dōhu ɪ lalamo
 his foot it be_big PRT
 'his big foot'

Hausa (Schachter 1985: 15)

- (15) mutum mai alheri / arzaki / hankali
 person with kindness / prosperity / intelligence
 'a kind/prosperous/intelligent person'

In certain languages some or all of the functions mentioned above are clearly distributed over distinct, non-overlapping groups of lexemes (languages with rigid or specialized lexemes, types 3-5), in other languages some or all of these functions are performed by the same group of lexemes (languages with flexible lexemes, types 1-2). It is important to point out that there are no rigid boundaries between the five types of parts-of-speech systems, instead they should be regarded as points on a continuous scale between Types 1 and 5 (Hengeveld 1992: 58). This leaves room for languages with minor lexical word classes, such as Cayuga, with an intermediate parts-of-speech system that falls

somewhere between Type 4 and 5 (see also class 3/4 which contains languages with a minor class of adjectives in Figure 2 below)

For this study I used a basic sample of 52 languages (see Appendix 1), which are distributed across language families and subfamilies in such a way that the genetic (historic) distance between individual languages is always maximal (for a detailed presentation of the sampling method I refer to Rijkhoff and Bakker 1998). In Figure 2 all languages in the sample are classified in terms of Hengeveld's parts-of-speech systems (the only exceptions are the language isolates Etruscan, Meroitic, and Nahali, but cf. Comrie 2001 on possible relationships with other languages or language families)

Type 1	'lexeme'	Samoan
Type 2	V - 'non-verb'	†Hurrian, Imbabura Quechua, Turkish
Type 3	V - N - A	Abkhaz, Alambak, Basque, Berbice Dutch Creole, Bukiyip (=Mountain Arapesh), Burushaski, Dutch, Georgian, Guaraní, †Hittite, Hmong Njua, Hungarian, Ika, Kayardild, Ket, Nama Hottentot, Nasoi, Ngalakan, Ngü, †Sumerian, Wambon
Type 3/4	V - N(A)	Babungo, Bambara, Chukchi, Gude, Kisi, Oromo, Pipil, Sarcee, Tamil
Type 4	V - N	Burmese, Galela, Hixkaryana, Koasati, Korean, Krongo, Lango, Mandarin Chinese, Gilyak (=Nivkh), Nung, Nunggubuyu, Tsou, Vietnamese, West Greenlandic
Type 4/5	V(-N)	Cayuga
Type 5	V	
Type unknown		†Etruscan, †Meroitic, Nahali

Figure 2 Parts-of-speech systems of languages in the sample

Thus, Samoan (Type 1) has a single class of lexemes whose members can be used as the main predicate (verbal function), as the head of the term (nominal function), and as a modifier of the head of the term (adjectival function). Quechua (Type 2) has two major word classes (see examples (8) – (11) above): a distinct class of verbs and a class of lexemes ('non-verbs') which can serve as the head of the term (nominal function) and as a modifier of the head of the term (adjectival function). Dutch (Type 3) is an example of a language in which verbs, nouns, and adjectives are clearly distinguished. Galela (Type 4)

distinguishes between nouns and verbs, but lacks lexemes that can immediately be used to modify the head of the term. As we have seen above, in such cases languages commonly employ qualifying NPs headed by an abstract noun or relative clauses headed by a stative or descriptive verb, as in the English paraphrases 'the man with richness' or 'the man who is rich / who riches' (see examples (14) and (15) above). Adjectives are largely ignored in this article, but note that languages of intermediate type 3/4 resist straightforward classification in that they only have a minor (closed) class of adjectives (for more details, see Rijkhoff 2002a: 129–133). The sample does not contain a language with a single word class which only consists of verbs (Type 5), but a language such as Cayuga (Type 4/5) comes rather close to the rigid end of the parts-of-speech scale in Hengeveld's classification (see examples (12) and (13) above).

In an earlier study (Rijkhoff 2000, 2002a: 141–145) I have proposed an answer to the question *When can a language have a distinct class of adjectives?* In the next sections I will try to answer the question *Why is it that some languages have a distinct class of verbs or nouns, whereas others do not?*

4. When can a language have a distinct class of verbs?

In this section I will try to establish what distinguishes languages with a distinct class of verbs (Types 2-5) from languages without a distinct class of verbs (Type 1). It appears that all languages with a major, distinct class of verbs have a set of basic transitive lexemes in the lexicon. By contrast, a basic set of transitive lexemes is absent in Samoan (Austro-onesian, Eastern Malayo-Polynesian, Nuclear Polynesian), which does not distinguish between nouns and verbs (note that argument structure is not necessarily identical across languages, cf. Drossard 1991: 408, Comrie 1993: 906, see also e.g. García Velasco and Hengeveld (2001: 108) on languages without ditransitive lexemes).

„With the exception of a very small class of locative verbs [], Samoan verbs do not require more than one argument, i.e. S or O. If we define obligatory transitive verbs as bi-valent verbs which express transitive actions and which require two arguments referring to the agent and the patient, then Samoan does not have obligatory transitive verbs“ (Mosel 1991a: 188).

„If we compare Samoan verbs with transitive and intransitive verbs in other languages where these two categories are distinguished in terms of the number of obligatory arguments, then there are no cardinal transi-

itive verbs in Samoan, i.e. bi-valent verbs expressing transitive actions. Except for a very small class [...], all Samoan verbs (including ergative verbs) maximally require one argument, namely S or O, both of which are expressed by absolutive noun phrases in basic verbal clauses" (Mosel and Hovdhaugen 1992: 724)

In other words, according to Table 1, to have transitivity coded in a group of lexemes is a necessary and sufficient condition for a language to have a distinct class of verbs (i.e. lexemes that can only serve as the head of the clause; see Hengeveld's definitions above). This is not a trivial observation, since there is no good reason why there should not be languages with intransitive verbs ONLY.

WHEN CAN A LANGUAGE HAVE A DISTINCT CLASS OF VERBS?	Languages with a major, distinct class of verbs (Types 2, 3, 3/4, 4, 4/5)	Languages without a major, distinct class of verbs (Type 1)
Languages with transitive lexemes	<p><u>Type 2</u>: †Hurrian, Imbabura Quechua, Turkish</p> <p><u>Type 3</u>: Abkhaz, Alambak, Basque, Berbice Dutch Creole, Bukiyip (=Mountain Arapesh), Burushaski, Dutch, Georgian, Guarani, †Hittite, Hmong Njua, Hungarian, Ika, Kayardild, Ket, Nama Hottentot, Nasioi, Ngalakan, Ngiti, Oromo, †Sumerian, Wambon</p> <p><u>Type 3/4</u>: Babungo, Bambara, Chukchi, Gude, Kisi, Oromo, Pipil, Sarcee, Tamil</p> <p><u>Type 4</u>: Burmese, Galela, Hixkaryana, Koasati, Korean, Krongo, Lango, Mandarin Chinese, Gilyak (=Nivkh), Nung, Nunggubuyu, Tsou, Vietnamese, West Greenlandic</p> <p><u>Type 4/5</u>: Cayuga</p>	(no languages)
Languages without transitive lexemes	(no languages)	<u>Type 1</u> : Samoan (outside the sample e.g. Salish languages)
?	†Etruscan, †Meroitic, Nahali	

Table 1. Transitivity and languages with and without a distinct class of verbs

Table 1 allows us to put forward the following implication

- (16) If a language has a distinct class of verbs, it has transitive lexemes (and vice versa if a language has transitive lexemes, it has a distinct class of verbs)

Transitivity is of course a somewhat elusive notion, which has been discussed by many linguists (cf Hopper and Thompson 1980, Hopper and Thompson eds 1982, Mosel 1991b, Tsunoda 1994, Dixon and Aikhenvald eds 2000).⁴ Here I will use the common sense notion of transitivity as implicitly or explicitly used in grammatical descriptions, where lexemes are regarded as being transitive when they designate a dynamic relationship between two obligatory participants an agent/subject and a patient/object (but see Comrie 1993 on obligatoriness of arguments)

4 The Oxford Dictionary of Linguistics (1997 383) provides the following definition of Transitive

transitive (Construction) in which a verb is related to at least two nouns or their equivalents, whose semantic roles are characteristically those of an agent and a patient e.g. that of *She* (agent) *carried him* (patient) A transitive verb is one which takes or can take such a construction [] From Latin *transitivus* 'going across' The original sense was that of a 'transition' from a noun referring to one 'person' or participant (Latin *persona*) to another

The notions 'agent' and 'dynamic' are characterized as follows in (a) the Oxford Dictionary of Linguistics (1997 11, 107) and (b) Dik (1997 107, 118), notice that Dik defines the semantic role 'Agent' in terms of certain States-of-Affairs (event types, *Aktionsarten*)

(a) **agent** 1 Noun phrase, etc. identifying an actor or actors performing some action E.g. *Mary* is an agent in *Mary went out* or *Mary made it* 2. A syntactic category which is characteristically that of agents as opposed to patients Thus the subject of a transitive construction in English has the role of agent (A) in opposition to an object as patient *Mary* (A) *shut the door* (P) 3. The element is a passive sentence which would correspond to a subject in the active, e.g. *by Mary* in *The car was driven by Mary*, cf. active *Mary drove the car*

(b) **Agent** the entity controlling an action (=Activity or Accomplishment)

(a) **dynamic** (Verb) denoting an action, process, etc. as opposed to a state E.g. *buy* is dynamic *own*, which denotes the resulting state, is stative Also of aspect e.g. a verb meaning 'sit' might, in a dynamic form, be used of the action of sitting down

(b) A [+dynamic] State of Affairs (SoA) [] necessarily involves some kind of change, some kind of internal dynamism This dynamism may consist in a recurrent pattern of changes all through the duration of the SoA, or in a change from some initial SoA into some different final SoA [+dynamic] SoAs may be called Events and are illustrated in *The clock was ticking*, *The substance reddened*, *John opened the door*

In the basic sample Samoan is the only language without a rigid noun/verb distinction and without transitive lexemes, but other cases are attested in, for example, the Salish language family from the American Northwest (see examples (1) and (2) above). For instance, Jelinek and Demers (1994: 697) have argued that Straits Salish lacks a noun/verb contrast at the lexical level and that transitivity is not a property of lexical roots (see also Czaykowska-Higgins and Kinkade 1998: 36–27; Beck 2002: 124). But whereas in Salish transitive verbs can be derived from intransitive roots, Samoan does not have valency changing operations.

Samoan (Mosel and Hovdhaugen 1992: 729):

Corresponding to the mono-valency of Samoan verbs, valency changing derivations do not result in a valency-increase or decrease, but only in valency-rearrangement changing the grammatical relations.

One may wonder how speakers of Samoan refer to transitive events when their language only provides them with intransitive lexemes. One possibility is to simply add an agent, marked by the ergative preposition *e* (note that the ergative phrase is never obligatory):

Samoan (Mosel 1991a: 182)

(17) Sā fasi e le teine le maile
 PAST hit ERG the girl the dog
 ‘The girl hit the dog’

Alternatively, the agent can be expressed as the possessor of the patient:

Samoan (Mosel 1991a: 183)

(18) Sā 'ai le talo a le teine
 PAST eat the taro of the girl
 ‘The girl ate the taro’
 [lit. ‘The taro of the girl was eaten’]

For an elaborate discussion of constructions that are used to refer to transitive events in Samoan, I refer to Mosel (1991a) and Mosel and Hovdhaugen (1992: 720–741, 773). The fact that transitive lexemes are absent in Samoan does not mean that it also lacks bivalent lexemes: although (under the standard definition) transitive lexemes are always bivalent, the reverse is not true. Thus, in Samoan (Mosel 1991a: 182)

[a] small group of locative verbs, e.g. *si'omia* 'surround' [] require an absolutive and an ergative or locative-directional argument. As the ergative and the locative-directional argument are in free variation and do not denote actions, this type of clause is not a transitive construction.

Samoan (Mosel and Hovdhaugen 1992: 111)

- (19) 'Ua si'o-mia le fale ɪ le pā /e le pā
 PERF surround-ES ART house LD ART fence /ERG ART fence
 'The house is surrounded by a fence'

As was already mentioned, in Salish languages transitive verbs are derived (Jelinek and Demers 1994: 700) "When there is no overt TRAN element, the sentence is [-TRAN]"

Straits Salish (Jelinek and Demers 1994: 700)

- (20) ye'=lə=sx"
 go=PAST=2SG NOM
 'You went'
- (21) ye'-t-óŋəs=lə=sx"
 go-TRAN-1SG ACC=PAST=2SG NOM
 'You sent me'

Gerdts (1998) demonstrates how a monovalent (patient-oriented) stem in Halkomelem can be provided with various affixes to create, for example, transitive (b), anti-passive (c) and benefactive (d) forms, or combinations of the above such as the causative of the anti-passive (e) and the passive of the causative of the anti-passive (f)

Halkomelem (Gerdts 1998: 315, 309, 308, 320, see also Beck 2002: 124–125)

- (22) a nɪ q'wəl tʰə sce:tən
 AUX bake DET salmon
 'The salmon baked'
- b nɪ q'wəl-ət-əs θə steni? tʰə sce:tən
 AUX cook-TRAN-3ERG DET woman DET salmon
 'The woman cooked the salmon'

- c nɪ q'wəl-əm θə stɛnɪ? ʔə tʰə sce ɪtən
 AUX cook-INTR DET woman OBL DET salmon
 'The woman cooked the salmon'
- d nɪ? q'wəl-ətɕ-θamʔʒ-əs ʔə k'θə sce:ɪtən
 AUX bake-BEN-TRAN 1OBJ-3ERG OBL DET salmon
 'He baked me the salmon'
- e nɪ cən q'wəl-əm-stəx' θə stɛnɪ? ʔə tʰə səplɪl
 AUX 1SUB bake-INTR-CS 3OBJ DET woman OBL DET bread
 'I made the woman bake the bread'
- f nɪ q'wəl-əm-st-əm θə stɛnɪ? ʔə tʰə səplɪl
 AUX bake-INTR-CS-INTR DET woman OBL DET bread
 'The woman was made to bake the bread'

It should come as no surprise that languages without a rigid noun/verb distinction are also characterized by the lack of transitive lexemes. If having transitive lexemes is equivalent to having a distinct class of verbs (see above), then transitive lexemes first need to be de-transitivized (deverbalized) before they can be used in a nominal function. By contrast, only non-transitive lexemes (of the flexible type, of course) can immediately be used in verbal or in nominal function, because they are not marked by the feature that is exclusively associated with verbs: transitivity.

The connection between non-transitivity and the lack of a rigid noun/verb distinction has also been observed by Jelinek and Demers (1994: 700, cf. also Kuipers 1968)⁵

⁵ Confusingly, however, linguists who deny that there is a noun/verb distinction in Salish languages (which suggests they have flexible lexemes of Type 1 in Hengeveld's classification) also claim that "all referring expressions are full clauses containing inflected predicates (see in particular the work of Jelinek for this view, and the work of Davis and Saunders)" (Czaykowska-Higgins and Kinkade 1998: 36). This seems to be a contradiction: the lack of a verb/noun distinction implies that lexemes are extremely multifunctional (i.e. flexible lexemes of Type 1, cf. e.g. Jelinek and Demers 1994: 698), but if "all referring expressions are full clauses" they must all be verbal lexemes (i.e. rigid lexemes of type 5). Perhaps part of the confusion is due to the fact that all lexemes in Salish can be used as the main predicate. But according to Hengeveld this is not a feature that uniquely defines verbal lexemes, since in many languages nominal and other non-verbal lexemes can also immediately be used as the main predicate (without requiring some kind of "extra measure", such as the appearance of a copula). What does distinguish verbs from other word classes cross-linguistically is that verbs can ONLY be used as the main predicate (see section 3).

The feature of Straits Salish syntax that permits the lack of constraints on the distribution of lexical roots is the fact that the feature of transitivity is not a lexical property of a subset of roots.

Sasse (1993b: 654), referring to work by Broschart (1987, 1991), also points to the connection between non-transitivity and lexical flexibility, when he writes that lexemes in Salish languages

denote 'oriented' [...] states of affairs, i.e. they characterize an individual in terms of participant role it plays in a state of affairs, e.g. as an actor or undergoer. It is by virtue of this property that they are able to occur both in argument and in predicate position.

In other words, it is the lack of transitivity that makes it possible for lexemes to be flexible, to be used in verbal and in nominal function in languages like Salish and Samoan.

A correlation between intransitivity and the lack of a noun/verb distinction might also be found in, for example, Mundari (Austroasiatic, Munda; Hoffmann 1903; cf. also García Velasco and Hengeveld 2001: 106), Tongan (Austronesian, Eastern Malayo-Polynesian, Polynesian; Broschart 1991; Sasse 1993b), Fijian (Schütz 1975; Foley 1976) and Tagalog (Austronesian, Western Malayo-Polynesian, Meso-Philippine; Himmelmann 1987, *fc.a*, *fc.b*; Sasse 1993b: 655).

In sum, there is evidence to suggest that having transitivity coded in a group of lexemes is a necessary and sufficient condition for a language to have a distinct class of verbs (and vice versa).

5. When can a language have a distinct class of nouns?

When we investigate how transitive lexemes are distributed across languages with and languages without nouns, we see that having transitive lexemes is also a necessary (though not a sufficient) condition for a language to have a major, distinct class of nouns:

WHEN CAN A LANGUAGE HAVE A DISTINCT CLASS OF NOUNS?	Languages with a major, distinct class of nouns (Types 3, 3/4, 4)	Languages without a major, distinct class of nouns (Types 1, 2, 4/5)
Languages with transitive lexemes	<p><u>Type 3</u> Abkhaz, Alambak, Basque, Berbice Dutch Creole, Bukiyip (=Mountain Arapesh), Burushaski, Dutch, Georgian, Guaraní, †Hittite, Hmong Njua, Hungarian, Ika, Kayardild, Ket, Nama Hottentot, Nasioi, Ngalakan, Ngiti, †Sumerian, Wambon</p> <p><u>Type 3/4</u> Babungo, Bambara, Chukchi, Gude, Kisi, Oromo, Pipil, Sarcee, Tamil</p> <p><u>Type 4</u> Burmese, Galela, Hixkaryana, Koasatu, Korean, Krongo, Lango, Mandarin Chinese, Gilyak (=Nivkh), Nung, Nunggubuyu, Tsou, Vietnamese, West Greenlandic</p>	<p><u>Type 2</u> †Hurrian, Imbabura Quechua, Turkish</p> <p><u>Type 4/5</u> Cayuga</p>
Languages without transitive lexemes	(no languages)	<p><u>Type 1</u> Samoan (outside this sample e.g. Halkomelem, Squamish, and other Salish languages)</p>
?	†Etruscan, †Meroitic, Nahal	

Table 2 Transitivity and languages with and without a distinct class of nouns

Thus, languages without a major, distinct class of nouns (Types 1, 2 and 4/5) may or may not have transitive lexemes/verbs, but if a language does have a distinct class of nouns (Types 3, 3/4 and 4), it always has a class of transitive lexemes/verbs

6. Towards an explanation

Apparently the presence or absence of a group of transitive lexemes in the basic lexicon of language (co-)determines the kind of parts-of-speech systems of a language. To answer the question posed in the title

- (23) A language can only have a distinct class of verbs, if (and only if) it has a group of transitive lexemes (i.e. there are no languages in which verbs are a *distinct* word class whose members are *all intransitive*)

- (24) A language can only have a distinct class of nouns, if it has a group of transitive lexemes/verbs (i.e. there are no languages with a distinct class of nouns and without a group of transitive lexemes/verbs)

Thus, the presence of transitive lexemes in the basic lexicon is a necessary condition for a language to have a distinct class of nouns and a necessary and sufficient condition for a language to have a distinct class of verbs

How can we explain this? In a way, it is perhaps not surprising that transitivity is the defining feature of verbs (as a distinct word class) verbs are associated with temporal entities, events, and the most prototypical event is a transitive action involving an agent and a patient (see note 4, cf. also Lakoff 1987: 58–67, DeLancey 1987). The data presented in *Table 1* indicate that a language can only have a distinct class of verbs if (and only if) the most prototypical event feature Transitivity is somehow part of the meaning of a group of lexemes. However, as has been mentioned before, transitivity is a notoriously problematic notion. This is perhaps shown most clearly in Hopper and Thompson (1980), who argue that transitivity is a central property of language use (correlated with foregrounding and backgrounding) and involves various components. They identified the following parameters of transitivity, “each of which suggests a scale according to which clauses can be ranked” (Hopper and Thompson 1980: 251)

	high ← TRANSITIVITY →	low
(25) A PARTICIPANTS	two or more participants	one participant
B KINESIS	action	non-action
C ASPECT	telic	atelic
D PUNCTUALITY	punctual	non-punctual
E VOLITIONALITY	volitional	non-volitional
F AFFIRMATION	affirmative	negative
G MODE	realis	irrealis
H AGENCY	A high in potency	A low in potency
I AFFECTEDNESS OF O	O totally affected	O not affected
J INDIVIDUATION OF O	O highly individuated	O non-individuated

Since this contribution is concerned with lexical word classes, I will confine myself here to features that are relevant only to verbs and which are generally considered to be the most characteristic features of transitivity: (1) the *Aktionsart* feature *kinesis*, which can be translated as change, motion, or dynamicity (cf. Comrie 1976: 49, Rijksbaron 1989), and (2) the presence of both an agent and a patient entity

6.1. Dynamicity (*Aktionsart*) and Shape (*Seinsart*)

There is another reason why dynamicity deserves some special attention, for if it is this feature (rather than transitivity) that is relevant in the current discussion, we would be able to draw a parallel with one of the factors that make it possible for a language to have a distinct class of adjectives

6.1.1. The Seinsart feature 'Shape' (or when can a language have a distinct class of adjectives?)

I have recently argued that the occurrence of a distinct class of adjectives in a language depends on the kind of noun that is used to refer to concrete objects (Rijkhoff 2000). Facts derived from the same sample that was used for the current study indicate that a distinct class of adjectives only occurs in languages in which nouns (used to refer to concrete objects) designate a property that is semantically specified as having a boundary in the spatial dimension (+Shape), consequently nouns in these languages can be modified directly by a numeral (only discrete entities can be enumerated). By contrast, adjectives are never attested in languages in which nouns (used to refer to concrete objects) designate a property that is not semantically specified as having a spatial boundary (-Shape), as in e.g. Thai. In the sample the same holds for Burmese, Nivkh, Korean, Mandarin Chinese, Nung, Vietnamese (Table 3, recall that 'lexemes' (Type 1 Samoan) and 'non-verbs' (Type 2 †Hurrian, Imbabura Quechua, Turkish) are semantically underspecified or *vague*)

Since the meaning definition of a Thai noun does not include the notion of spatial boundedness or discreteness the modifying numeral must combine with a *classifier*, which functions as a kind of *individualizer* (cf Lyons 1977: 462).⁶

6 Hmong Njua is also a classifier language (like Burmese, Nivkh, Korean, Mandarin Chinese, Nung, Vietnamese), but I have argued that this language uses set nouns and that (erstwhile) classifiers are now used to indicate that the referent consists of a singleton or a collective set (Rijkhoff 2000, Rijkhoff 2002a: 142)

Hmong Njua (Harnheusen 1990: 117)

- *tsev* is a transnumeral noun and the referent of the noun phrase is a set, which can have any cardinality

- (1) kuv yuav tsev
 1SG buy house
 'I buy a house / (some) houses'

WHEN CAN A LANGUAGE HAVE A DISTINCT CLASS OF ADJECTIVES?	Languages with a major, distinct class of adjectives (Type 3)	Languages without a major, distinct class of adjectives (Types 1, 2, 3/4, 4, 4/5)
Languages with +Shape nouns	Type 3 Abkhaz, Alambak, Basque, Berbice Dutch Creole, Bukiyap (=Mountain Arapesh), Burushaski, Dutch, Georgian, Guaraní, †Hitite, Hmong Njua, Hungarian, Ika, Kayardild, Ket, Nama Hottentot, Nasioi, Ngalakan, Ngitu, Oromo, †Sumerian, Wambon	(Type 1 Samoan) (Type 2 †Hurrian, Imbabura Quechua, Turkish) Type 3/4 Babungo, Bambara, Chukchi, Gude, Kisi, Oromo, Pipil, Sarcee, Tamil Type 4 Galela, Hixkaryana, Koasati, Krongo, Lango, Nungubuyu, Tsou, West Greenlandic Type 4/5 Cayuga
Languages with -Shape nouns	(no languages)	Type 4 Burmese, Gilyak (=Nivkh), Korean, Mandarin Chinese, Nung, Vietnamese
?	†Etruscan, †Meroitic, Nahali	

Table 3 The distribution of languages with and without a major, distinct class of adjectives

Thai (Hundius and Kölver 1983 166, 181–2)

[Thai nouns] purely denote *concepts* and, for this reason, are incompatible with direct quantification

[], Thai nouns do not in themselves contain any numerical or referential indications [] they are purely *conceptual labels* which, in order to be appropriately related to objects of the non-linguistic world, always and in principle stand in need of interpretation which has to be inferred from both linguistic and non-linguistic context

- the (erstwhile) numeral/sortal classifier is used to indicate that the referent of the noun phrase *lub tsev* is a singleton set
 - (2) kuv yuav lub tsev
1SG buy CLF house
'I buy the house'
- the group classifier *cov* is used to indicate that the referent of the noun phrase *cov tsev* is a collective set
 - (3) kuv yuav cov tsev
1SG buy PL house
'I buy (the) houses'

Thus, it appears to be the case that

- (26) A language can only have a distinct class of adjectives, if nouns in that language include in their meaning the notion of spatial boundedness (i.e. when speakers of that language use +Shape nouns to refer to concrete objects; but see note 6).

In an earlier study I used the features Shape and Homogeneity to characterize the major six nominal subcategories in the world's languages (Figure 3; for a detailed presentation I refer to Rijkhoff 2002a: chapter 2):

SPACE	-HOMOGENEITY	+HOMOGENEITY
-SHAPE	g e n e r a l n o u n	
	sort noun	mass noun
+SHAPE	s e t n o u n	
	singular object noun	collective noun

Figure 3. Cross-linguistic classification of major nominal subcategories (Seinsarten)

If a noun has a positive value for the lexical feature Shape (set noun, singular object noun, collective noun), this means that the nominal property is characterized as having a definite outline in the spatial dimension. As has already been mentioned above, this also means that set nouns, singular object nouns, and collective nouns can be in a direct construction with a numeral, since only discrete entities can be counted. Nouns with a negative value for the feature Shape (general nouns, sort nouns and mass nouns), on the other hand, cannot be in a direct construction with a numeral; they require a so-called classifier of some kind (see examples (29) and (30) below).

Nouns with a positive value for the lexical feature Homogeneity (mass nouns, collective nouns) designate a property that is characterized as being agglomerative (e.g. water added to water is still 'water'). In other words, the referent of an NP headed by a noun that designates a homogeneous property consists of portions (in the case of a mass noun such as 'water') or members (in the case of a collective noun such as 'family'). General nouns and set nouns are neutral with respect to the feature Homogeneity.

It appears that within and across languages singular object nouns, set nouns, sort nouns, or general nouns are used to refer to a single concrete object. A singular object noun designates a property of a single spatial object. It can be in a direct construction with the numeral and plural marking is obligatory, both with and without a numeral.

Dutch singular object noun

- (27) twee boek-en
two book-PL
'two books'

Set nouns designate a property of a set of spatal objects (a set can have any cardinality, including 'one') They can also be in a direct construction with a numeral, but in such cases the so-called number marker (if available at all) is typically absent (Andrzejewski 1960: 71) ⁷

The vast majority of [Oromo nouns] are associated with neither plurality nor singularity, i.e. the forms themselves give us no information as to whether what is denoted by them is one or more than one. When such forms are used, only the context can provide us with information about the number of what is denoted.

Oromo (Stroemer 1987: 59) set noun

- (28) gaala lamaani
camel(s) two
'two camels'

A sort noun cannot be in a direct construction with the numeral, instead the numeral combines with a sortal (or numeral) classifier and number marking is absent, both with and without a numeral.

Thai (Hundius and Kölver 1983: 172) sort noun

- (29) rôm sǎam khan
umbrella(s) three CLF long, handled object
'three umbrellas'

Thai distinguishes between mensural and sortal classifiers (i.e. between mass nouns and sort nouns), but such a distinction is deemed to be absent in the case of Yucatec Maya (Lucy 1992: 74).

⁷ I regard the so-called number marker in Oromo and other languages with set nouns as **nominal aspect markers** since they indicate what **kind** of set the speaker is referring to – a singleton or a collective set. In other words, they relate to a qualitative, not a quantitative distinction (for discussion, see Rijkhoff 2002a: 100–121).

Outside of the restriction on compatibility with other classifiers, little in the grammar of Yucatec appears to hinge on, or correlate with, this “sortal” [] versus ‘mensural’ distinction, and it is difficult to know what status it should be given

I have labeled classifiers of the Yucatec variety ‘general classifiers’ and the nouns that combine with these classifiers ‘general nouns’. A general noun cannot be in a direct construction with the numeral, instead the numeral combines with a general classifier and number marking is absent, both with and without a numeral

Yucatec Maya (Lucy 1992: 74) general noun

	a/one-CLF	banana
(30) a	<i>'un-tz'ut</i>	<i>ha'as</i> ‘one/a 1-dimensional banana (1 e the fruit)’
b	<i>'un waal</i>	<i>ha'as</i> ‘one/a 2-dimensional banana (1 e the leaf)’
c	<i>'un kuul</i>	<i>ha'as</i> ‘one/a planted banana (1 e the plant/tree)’
d	<i>'un kuuch</i>	<i>ha'as</i> ‘one/a load banana (1 e the bunch)’
e	<i>'um-p ut</i>	<i>ha'as</i> ‘one bit banana (1 e a bit of the fruit)’

I have called the noun types in Figure 3 *Seinsarten*, as each type essentially specifies a different *mode of being*, just like every *Aktionsart* specifies a different *mode of action*. In other words, languages do not so much differ in the kind of properties that are designated by nouns, but rather in the way properties are represented in space in terms of the features Space and Homogeneity. Thus whereas speakers of English use a singular object noun to refer to an umbrella (the bare noun designates a singular object), speakers of Thai use a sort noun to refer to the same object (the noun designates a concept and can only be numerated when a sortal classifier is employed), the difference being that in English, but not in Thai, the nominal property is characterized as having a definite outline in the spatial dimension.

The reason to discuss *Seinsarten* is that, it turns out to be the case that it is dynamicity (rather than transitivity) that plays such a crucial role in parts-of-speech systems across the globe, we could say that it is always a *Seinsart* feature (Shape) or an *Aktionsart* feature (Dynamicity) that (co-)determines the parts-of-speech system of a language.

6.1.2. Dynamicity

Even though Dynamicity has been one of the central notions in verb semantics since antiquity (Rijksbaron 1989), there is still no consensus on the way this feature should be defined. For all practical purposes I will assume that dynamic verbs typically involve some kind of change. It may be good to point out, however, that for some change and dynamicity are more or less synonyms, whereas for others change implies dynamicity, but not the other way around (i.e. not all dynamic verbs, such as 'to walk', necessarily involve a change of some sort; cf. Seibt 2003).

In any case, if it is dynamicity (not transitivity) that distinguishes languages of Type 1 from languages of Types 2-5, we should not find basic dynamic lexemes in languages like Samoan and Salish. This, however, does not seem to be true. For one thing, in both languages we find arguments that could be characterized as agents, and agentivity implies dynamicity (e.g. Dik 1997: 118; see also note 4).

Samoan (Mosel and Hovdhaugen 1992: 105)

(31) Sā siva le teine
 PAST dance ART girl
 'the girl danced'

Halkomelem (Gerds 1998: 315)

(32) ni ʔiməš tə steni?
 AUX walk DET woman
 'the woman walked'

But even if the single argument of the lexeme is a patient and not an agent, it is difficult to conceive of the lexeme as denoting a non-dynamic property:

Samoan (Mosel and Hovdhaugen 1992: 100)

(33) Sā sasa le tama.
 PAST hit ART child
 'The child was hit'

Halkomelem (Gerds 1998: 315)

(34) ni q'wəl tʰə sce:ɬtən
 AUX bake DET salmon
 'the salmon baked'

Thus, on the basis of examples like these we may conclude that it is not the presence or absence of the feature Dynamicity in the meaning of lexemes that partly or wholly determines when a language can have a distinct class of verbs or nouns.

6.2. Valence: Agent and patient

Due to the lack of serious alternatives, then, we must conclude that the absence of transitive lexemes in languages like Samoan and Salish is not so much due to dynamicity not being part of the lexical meaning, but simply a consequence of the fact that lexemes that would be translated as transitive verbs in other languages take just one argument. That is to say, whereas transitive verbs typically require an agent and a patient in e.g. Dutch, the translational equivalents of such verbs in Samoan or Salish only require an agent OR a patient argument, but not both (note furthermore that not every dynamic verb requires an agent; see examples in note 4).

Samoan has two main verb classes: ergative and non-ergative verbs. Only ergative verbs can optionally appear with a noun phrase in the ergative. Thus *sasa* 'to hit' is an ergative verb and *alu* 'to go' is not. Verbs that belong to the ergative group, such as *sasa* 'to hit', typically occur with a patient argument, whereas a so-called non-ergative verb like *alu* 'to go' takes an agent argument (note that there is no active/passive opposition in Samoan):

Samoan (Mosel and Hovdhaugen 1992: 100-101)

(35) Sā sasa le tama
 PAST hit ART child
 'The child was hit'

(36) Sā sasa e le fafine le tama
 PAST hit ERG ART woman ART child
 'The child was hit by the woman / the woman hit the child'

(37) Sā alu le fafine i Apia
 PAST go ART woman LD Apia
 'The woman went to Apia'

But not:

Samoan (Mosel and Hovdhaugen 1992: 101)

(38) * Sā alu e le fafine i Apia
 PAST go ERG ART woman LD Apia

Similar things can be said about languages of the Salish family. For example, basic lexemes in Halkomelem also occur with a patient or an agent, the 'patient-oriented' lexeme being the translational equivalent of a transitive verb in English.

Halkomelem (Gerds 1998: 315)

(39) nɪ q'wəl tʰə sce tən
AUX bake DET salmon
'The salmon baked'

(40) nɪ ʔiməʃ tə stɛni?
AUX walk DET woman
'The woman walked'

Thus the absence of basic transitive lexemes in languages such as Samoan and Salish can simply be attributed to the monovalent character of the lexemes: agent and patient are never coded as obligatory participants in the same event.

7. Conclusion

Data from a representative sample of the world's languages indicate that a language can neither have a distinct class of verbs nor a distinct class of nouns unless it has lexemes that are specifically coded as being transitive. Earlier research has shown that a distinct class of adjectives is only attested in languages with nouns whose meanings include the notion of spatial boundedness or discreteness. Together these data suggest that

- a a language can only have distinct classes of nouns and verbs if the basic lexicon contains a group of lexemes that encode the properties that are associated with a prototypical event, i.e. a transitive action, which involves a dynamic relationship between two obligatory parties: an agent and a patient,
- b a language can only have a distinct class of adjectives if nouns in that language include in their meaning the property that is associated with a prototypical object, i.e. a concrete thing, which is characterized by the fact that it has an outline in the spatial dimension (Shape).

Recall that Hengeveld's classification shows that

- the occurrence of a distinct class of adjectives implies the occurrence of a distinct class of nouns, and that

the occurrence of a distinct class of nouns implies the occurrence of a distinct class of verbs.

(41) verb > noun > adjective

We can now say that nouns or adjectives can only be a major, distinct word class, if the word class that precedes it in the hierarchy is coded for the prototypical property of the referent of the phrase it is the head of. Thus, the noun is the head of the noun phrase and only if the meaning definition of certain noun includes the notion of spatial boundedness or discreteness, the language can have a distinct class of adjectives. Similarly, the verb is the head of the clause and only if a subset of basic verbs is semantically specified as Transitive, the language can have a distinct class of nouns. Verbs are, of course, highest in the hierarchy, which may explain why having transitive lexemes is both a necessary and a sufficient condition for a language to have a distinct class of verbs.

Finally, since manner adverbs follow adjectives in Hengeveld's hierarchy, one may expect the occurrence of a distinct class of manner adverbs to be dependent on some lexical feature of members of the adjectival category.

(42) verb > noun > adjective > manner adverb

Preliminary research suggests that here the feature Gradability is a promising candidate (Rijkhoff, in preparation):

(43) verb > noun > adjective > manner adverb
 +Transitive +Shape +*Gradability*?

Appendix 1. The sample

The basic sample contains 52 languages, which are distributed across (sub)families in such a way that the genetic (historic) distance between them is always maximal (I used Ruhlen's 1991 classification, for details about the sampling method I refer to Rijkhoff and Bakker 1998)

<u>FAMILY</u>	<u>LANGUAGE(S) (subfamily)</u>
Afro-Asiatic	2 Gude (<i>Chadic</i>), Oromo (<i>Cushitic</i>)
Altaic	1 Turkish
Amerind	7 Pipil (<i>Central Amerind</i>), Hixkaryana (<i>Ge-Pano-Carb</i>), Cayuga (<i>Northern Amerind, Almosan-Keresiouan</i>), Koasati (<i>Northern Amerind, Penutian</i>), Guaraní (<i>Equatorial-Tucanoan</i>), Ika (<i>Chibchan-Paezan</i>), Imbabura Quechua (<i>Andean</i>)
Australian	3 Ngalakan (<i>Gunwinygun</i>), Kayardild (<i>Pama-Nyungan</i>), Nunggubuyu (<i>Nunggubuyu</i>)
Austric	5 Tsou (<i>Austro-Tai, Austronesian, Tsouic</i>), Samoan (<i>Austro-Tai, Austronesian, Malayo-Polynesian</i>), Nung (<i>Austro-Tai, Daic</i>), Vietnamese (<i>Austroasiatic</i>), Hmong (<i>Miao-Yao</i>)
Caucasian	1 Abkhaz
Chukchi-Kamchatkan	1 Chukchi
Elamo-Dravidian	1 Tamil
Eskimo-Aleut	1 West Greenlandic
Indo-Hittite	2 Dutch (<i>Indo-European</i>), †Hittite (<i>Anatolian</i>)
Indo-Pacific	5 Wambon (<i>Trans-New Guinea</i>), Alamblak (<i>Sepik-Ramu</i>), Galela (<i>West Papuan</i>), Bukiyip (<i>Torricelli</i>), Nasioi (<i>East Papuan</i>)
Kartvelian	1 Georgian
Khoisan	1 Nama Hottentot
Korean-Japanese-Ainu	1 Korean
Na-Dene	1 Sarcee
Niger-Kordofanian	4 Babungo (<i>Niger Congo, Niger-Congo Proper, Central Niger-Congo</i>), Kisi (<i>Niger-Congo, Niger Congo Proper, West Atlantic</i>), Bambara (<i>Niger-Congo, Mande</i>), Krongo (<i>Kordofanian</i>)
Nilo-Saharan	2 Lango (<i>East Sudanic</i>), Ngiti (<i>Central Sudanic</i>)
Pidgins and Creoles	1 Berbice Dutch Creole
Sino-Tibetan	2 Mandarin Chinese (<i>Sinitic</i>), Burmese (<i>Tibeto-Karen</i>)
Uralic-Yukaghir	1 Hungarian
Language Isolates	9 Basque, Burushaski, †Etruscan, Gilyak (=Nivkh), †Hurrian, Ket, †Merotic, Nahali, †Sumerian

References

- Andrzejewski, Bogumił W (1960) The categories of number in noun forms in the Borna dialect of Galla *Africa* 30, 62-75
- Anward, Jan, Edith Moravcsik and Leon Stassen (1997) Parts of speech a challenge for typology *Linguistic Typology* 1 2 167-183
- Beck, David (2002) Review of *Salish languages and linguistics theoretical and descriptive perspectives* (Trends in Linguistics Studies and Monographs 107), edited by Ewa Czaykowska-Higgins and M Dale Kinkade, Berlin Mouton de Gruyter, 1998 *Linguistic Typology* 6 1 122-127
- Bhat, D N Shankara (1994) *The adjectival category criteria for differentiation and identification* (Studies in Language Companion Series 24) Amsterdam Benjamins
- Broschart, Jürgen (1987) *Noun, verb, and participation akup* (= Arbeiten des Kölner Universalien-Projekts) 38 Köln Institut für Sprachwissenschaft
- Broschart, Jürgen (1991) Noun, verb, and participation (a typology of the Noun/Verb-distinction) In Hansjakob Seiler and Waldfried Premper (eds) *Partizipation Das sprachliche Erfassen von Sachverhalten* (Language Universals Series 6) Tübingen Gunter Narr 65-137
- Broschart, Jürgen (1997) Why Tongan does it differently categorial distinctions in a language without nouns and verbs *Linguistic Typology* 1 123-165
- Churchward, C Maxwell (1953) *Tongan grammar* London Oxford University Press
- Churchward, S (1951) *A Samoan grammar* 2nd ed Revised and enlarged Melbourne Spectator Publishing Co Pty Ltd
- Comrie, Bernard (1976) *Aspect* Cambridge Cambridge University Press
- Comrie, Bernard (1993) Argument structure In Joachim Jacobs, Arnim vom Stechow, Wolfgang Sternefeld and Theo Vennemann (eds) *Syntax an international handbook of contemporary research* (2 vols) Berlin Walter de Gruyter 905-914
- Comrie, Bernard (2001) Languages of the world In Mark Aronoff and Janie Reed-Miller (eds) *The Handbook of Linguistics* Oxford Blackwell 19-42
- Czaykowska-Higgins, Ewa and M Dale Kinkade (1998) Salish languages and linguistics In Ewa Czaykowska-Higgins and M Dale Kinkade (eds) *Salish Languages and Linguistics theoretical and descriptive perspectives* Berlin Mouton de Gruyter 1-68
- Czaykowska-Higgins, Ewa and M Dale Kinkade (eds) (1998) *Salish languages and linguistics theoretical and descriptive perspectives* (Trends in Linguistics Studies and Monographs 107) Berlin Mouton de Gruyter
- DeLancey, Scott (1987) Transitivity in grammar and cognition In Russell Tomlin (ed) *Discourse relations and cognitive units* Amsterdam Benjamins 53-68
- Demers, Richard A and Eloise Jelinek (1982) The syntactic functions of person marking in Lummi Paper presented at the 17th ICSNL, Portland, Oregon
- Demers, Richard A and Eloise Jelinek (1984) Word-building rules and grammatical categories in Lummi Paper presented at the 19th ICSNL, Victoria, B C
- Deny, Jean, Kaare Grønbech, Helmuth Scheel and Zeki Velidi Togan (eds) (1959) *Philologiae Turicae Fundamenta Tomus Primus* Wiesbaden Steiner
- Dik, Simon C (1997) *The theory of Functional Grammar* (2nd revised edition, edited by Kees Hengeveld) Part 1 *The structure of the clause* Part 2 *Complex and derived constructions* Berlin - New York Mouton de Gruyter

- Dixon, Robert M W (1980) *The languages of Australia* Cambridge Cambridge University Press
- Dixon, Robert M W and Alexandra Y Aikhenvald (eds) (2000) *Changing valency case studies in transitivity* Cambridge Cambridge University Press
- Donaldson, T (1980) *Ng'yambaa the language of the Wangaaybuwan of New South Wales* Cambridge Cambridge University Press
- Drossard, Werner (1991) Transitivität (vs Intransitivität) und Transituverung (vs Intransituverung) unter typologischen Aspekt In Hansjakob Seiler and Waldfried Premper (eds) *Partizipation Das sprachliche Erfassen von Sachverhalten* (Language Universals Series 6) Tübingen Gunter Narr 408–445
- Foley, William A (1976) *Comparative syntax in Austronesian* Ph D dissertation, University of California at Berkeley
- García Velasco, Daniel and Kees Hengeveld (2001) Do we need predicate frames? *Revista Canaria de Estudios Ingleses* 42 95–123
- Gerds, Donna B (1998) Mapping Halkomelem voice In Ewa Czaykowska-Higgins and M Dale Kinkade (eds) *Salish languages and linguistics theoretical and descriptive perspectives* Berlin Mouton de Gruyter 305–323
- Harriehausen, Betuna (1990) *Hmong Njua syntaktische Analyse einer gesprochenen Sprache mithilfe datenverarbeitungstechnischer Mittel und sprachvergleichende Beschreibung des sudostasiatischen Sprachraumes* (Linguistische Arbeiten 245) Tübingen Niemeyer
- Hengeveld, Kees (1992) *Non verbal Predication theory, typology, diachrony* Berlin Mouton de Gruyter
- Hengeveld, Kees, Jan Rijkhoff and Anna Siewierska (forthcoming) Parts-of-speech systems and word order Ms Department of Linguistics, University of Amsterdam
- Himmelman, Nikolaus 1987 *Morphosyntax und Morphologie – Die Ausrichtungsauffixe im Tagalog* (Studien zur Theoretischen Linguistik 8) München Fink
- Himmelman, Nikolaus (1991) *The Philippine challenge to universal grammar* Arbeitspapier Nr 15, Neue Folge Köln Institut für Sprachwissenschaft, Universität zu Köln
- Himmelman, Nikolaus (fc a) Tagalog In Geert Booij, Chrisuan Lehmann and Joachim Mugdan (eds) *Morphology a Handbook on Inflection and Word Formation, Part II* Berlin Mouton de Gruyter
- Himmelman, Nikolaus (fc b) Lexical categories and voice in Tagalog In Peter Austin and Simon Musgrave (eds), *Grammatical relations and voice in Austronesian* Stanford CSLI
- Hockett, Charles F (1958) *A course in modern linguistics* New York Macmillan
- Hoffmann, Johann (1903) *Mundan grammar* Calcutta The Secretariat Press
- Hopper, Paul and Sandra A Thompson (1980) Transitivity in grammar and discourse *Language* 56 1 251–299
- Hopper, Paul and Sandra A Thompson (1984) The discourse basis for lexical categories *Language* 60 4 703–752
- Hopper, Paul and Sandra A Thompson (eds) (1982) *Studies in transitivity* (Syntax and Semantics 15) New York Academic Press
- Hundius, Harald and Ulrike Kölver (1983) Syntax and semantics of numeral classifiers in Thai *Studies in Language* 7 2 164–214
- Jelinek, Eloise (1993) Prepositions in Straits Salish and the noun/verb question Paper presented at the 28th ICSNL, Seattle, Washington

- Jelinek, Eloise (1994) Quantification in Straits Salish In Emmon Back, Eloise Jelinek, Angelika Krazter and Barbara Partee (eds), *Quantification in natural languages* Dordrecht Kluwer 487-540
- Jelinek, Eloise (1995) The compositionality of argument structure in Lummi Paper presented at the 30th ICSNL, Victoria, B C
- Jelinek, Eloise (1998) Prepositions in Northern Straits Salish In Ewa Czaykowska-Higgins and M Dale Kinkade (eds) *Salish languages and linguistics theoretical and descriptive perspectives* Berlin Mouton de Gruyter 325-346
- Jelinek, Eloise and Richard A Demers (1994) Predicates and pronominal arguments in Straits Salish *Language* 70 4 697-736
- Kinkade, M Dale (1976) Columbian parallels to Thompson // -x1// and Spokane // -s&e1// *Proceedings of the International Conference on Salishan languages* 11 120-147
- Kinkade, M Dale (1983) Salish evidence against the universality of 'noun' and 'verb' *Lingua* 60 25-40
- Kuipers, Aert (1968) The categories verb-noun and transitive-intransitive in English and Squamish *Lingua* 21 610-626
- Lakoff, George (1987) *Women, fire and dangerous things what categories reveal about the mind* Chicago University of Chicago Press
- Langacker, Ronald W (1987) Nouns and verbs *Language* 63 1 53-94
- Lewis, Geoffrey L (1984 [1967]) *Turkish grammar* Oxford Oxford University Press
- Lucy, John A (1992) *Grammatical categories and cognition a case study of the linguistic relativity hypothesis* (Studies in the Social and Cultural Foundations of Language 13) Cambridge Cambridge University Press
- Lyons, John (1977) *Semantics*, 2 Vols Cambridge Cambridge University Press
- MacPhail, R M (1953) *An introduction to Santali* (2nd edition) Benagaria, Santal Parganas The Benagaria Mission Press
- Mithun, Marianne (1999) *The languages of native North America* (Cambridge Language Surveys) Cambridge Cambridge University Press
- Mithun, Marianne (2000) Noun and verb in Iroquoian languages multicategorisation from multiple criteria In Petra Vogel and Bernard Comrie (eds) *Approaches to the typology of word classes* Berlin Mouton de Gruyter 397-420
- Mithun Williams, Marianne (1976) *A grammar of Tuscarora* New York Garland
- Mosel, Ulrike (1991a) Transitivity and reflexivity in Samoan *Australian Journal of Linguistics* 11 175-194
- Mosel, Ulrike (1991b) Towards a typology of valency In Hansjakob Seiler and Waldfried Premper (eds) *Partizipation Das sprachliche Erfassen von Sachverhalten* (Language Universals Series 6) Tübingen Gunter Narr 240-251
- Mosel, Ulrike and Even Hovdhaugen (1992) *Samoan reference grammar* Oslo Universitetsforlaget AS
- Nater, Hank F (1984) *The Bella Coola language* (National Museum of Man, Mercury Series, Canadian Ethnology Service, paper no 92) Ottawa National Museums of Canada
- Rijkhoff, Jan (2000) When can a language have adjectives? An implicational universal In Petra Vogel and Bernard Comrie (eds) *Approaches to the typology of word classes* Berlin Mouton de Gruyter 217-257
- Rijkhoff, Jan (2002a) *The noun phrase* (Oxford Studies in Typology and Linguistic Theory) Oxford Oxford University Press

- Rijkhoff, Jan (2002b) Verbs and nouns from a cross-linguistic perspective *Rivista di Linguistica/Journal of Italian Linguistics* 14 1 115–147
- Rijkhoff, Jan (in preparation) When can a language have adverbs?
- Rijkhoff, Jan and Dik Bakker (1998) Language sampling *Linguistic Typology* 2 3 263–314
- Rijksbaron, Albert (1989) *Aristotle, verb meaning and Functional Grammar towards a new typology of States of Affairs (with an appendix on Aristotle's distinction between kinesis and energeia)* Amsterdam Gieben
- Ruhlen, Merritt (1991) *A guide to the world's languages Vol 1 Classification (with a postscript on recent developments)* London Arnold
- Sapir, Edward (1921) *Language an introduction to the study of speech* New York Harcourt, Brace & World
- Sasse, Hans-Jürgen (1988) *Der irakesische Sprachtyp (Arbeitspapier Nr 9, Neue Folge)* Köln Institut für Sprachwissenschaft, Universität zu Köln
- Sasse, Hans-Jürgen (1993a) Das Nomen – eine universale Kategorie? *Sprachtypologie und Universalienforschung (STUF)* 46 3 187–221
- Sasse, Hans-Jürgen (1993b) Syntactic categories and subcategories In Joachim Jacobs, Arnim vom Stechow, Wolfgang Sternefeld and Theo Vennemann (eds) *Syntax an international handbook of contemporary research* (2 vols) Berlin Walter de Gruyter 646–686
- Schachter, Paul (1985) Parts-of-speech systems In Timothy Shopen (ed) *Language Typology and Syntactic Description, Volume I Clause structure* Cambridge Cambridge University Press 3–61
- Schütz, Albert J (1975) At a loss for words the problem of word classes in Fijian *Oceanic Linguistics* 14 2, 100–118
- Seibt, Johanna (forthcoming 2003) Free Process Theory towards a typology of occurrences *Axiomathes*
- Sinha, N K. (1975) *Mundari grammar* (Central Institute of Indian Languages Grammar Series 2) Mysore Central Institute of Indian Languages
- Stroemer, Harry (1987) *A comparative study of three southern Oromo dialects in Kenya phonology, morphology and vocabulary* (Cushitic Language Studies 6) Hamburg Buske
- Swadesh, M (1939) Nootka internal syntax *International Journal of American Linguistics* 9 77–102
- Thompson, Laurence C and M T Thompson 1980 Thompson Salish //–x1// *International Journal of American Linguistics* 46 27–32
- Tsunoda, Tasaku (1994) Transitivity In R E Asher et al (eds), *Encyclopedia of Language and Linguistics*, Vol 9 Oxford Pergamon Press 4670–77
- van Baarda, M J (1908) *Leidraad bij het bestuderen van 't Galela'sch dialekt, op het eiland Halmaheira* [Manual for the study of the Galela dialect, on the island of Halmahera] The Hague Nijhoff
- Weber, David John (1989) *A Grammar of Huallaga (Huanuco) Quechua* (University of California Publications in Linguistics 12) Berkeley University of California Press
- Whaley, Lindsay J (1997) *Introduction to typology the unity and diversity of language* Thousand Oaks, CA Sage

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