Martin Haspelmath

5 Transitivity prominence

1 Differences in the degree to which transitive encoding used

It is often taken for granted that languages have a large number of transitive verbs, or even that the typical two-argument verb is transitive. And indeed, this paper will provide further evidence for this view.

But we know that languages differ in the extent to which they make use of transitive encoding – in other words, in their degree of TRANSITIVITY PROMINENCE. For example Hawkins (1986) highlighted a number of systematic contrasts between English and German, among them the much stronger tendency for English to employ transitive verbs. Thus, verbs like 'help' and 'follow' are encoded transitively in English, but not in German, where the helpee and followee arguments are in the Dative (rather than the Accusative) case.

(1) a. English   *He*$_{\text{NOM}}$ *helped her*$_{\text{ACC}}$.
     b. German   *Er*$_{\text{NOM}}$ *half ihr*$_{\text{DAT}}$.

(2) a. English   *They*$_{\text{NOM}}$ *followed them*$_{\text{ACC}}$.
     b. German   *Sie*$_{\text{NOM}}$ *folgten ihnen*$_{\text{DAT}}$.

It is unclear, however, what is the typical situation in the world's languages. Is German more typical or is English more typical? Or are both quite atypical, in line with other features where European languages turn out to be rather unusual (cf. Cysouw 2011)? It is sometimes thought that English is particularly transitivity-prominent (e.g. Bossong 1998: 271), but the following two examples, from a language of southern Africa and a language of Amazonia, illustrate the possibility that non-European languages may also exhibit a strong proclivity for transitive encoding. In (3), a verb of directed motion takes its goal argument as if it were a patient, and in (4), an utterance verb takes the addressee as if it were a patient, i.e. both show transitive encoding.[1]

(3)   N‖ng   (Ernszt et al. 2013)
       ha ‖ˈaa tya !uu
       3SG go.to that world
       'He goes to that country.'

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1 It should be noted that by *transitivity*, I mean TRANSITIVE ENCODING, i.e. a formal concept. Transitivity is often understood as a semantic concept of some kind, but semantics is quite irrelevant to my understanding of transitivity. See §3 for my definition of the term.

(4) Bora (Seifart 2013)

wajpi ihjyúcunú ováhtsa-ke
man shout boy-ACC
'The man shouted at the boy.'

Typological studies such as Tsunoda (1985) and Malchukov (2005) have tried to formulate generalizations concerning the kinds of verb meanings that tend to be coded non-transitively in different languages. We know from these studies that verbs of emotion ('fear', 'like'), verbs of cognition ('know'), and verbs of pursuit ('follow', 'look for') are less likely to be encoded transitively across languages, but so far languages have not often been ranked in terms of their transitivity prominence. Linguists have made a number of individual observations, like Hawkins's study alluded to above, and as also illustrated by the following quote from Lazard (2002: 153–154) (see also Dahl 1990: 7).

> "in most languages the major two-actant construction [= the transitive construction] is not limited to the expression of prototypical actions [= 'break'-type actions], and not even to actions as such. ... it may even be used in describing a property or a location, as in English *This room sleeps four persons*, or French *L'école jouxte la mairie* ('The school is beside the town hall'). In this respect, there are great differences from one language to the next. In English and French the extension of the major two-actant construction to the expression of processes which are not prototypical actions is particularly large: this may be a characteristic typological feature of Western European languages. The extension seems to be larger in English than in French. In Russian, it is certainly smaller." (Comments in square brackets added by me)

Another interesting study is Müller-Gotama (1994), who examined a dozen languages and classified them by their degree of "transparency" with respect to a set of criteria, one of them being "subject range" and "object range" (i.e. the range of semantic roles that can occupy these syntactic positions). English is said to have wider subject and object range (i.e. high transitivity prominence), like Chinese and Indonesian (two other right-branching languages), while left-branching languages like Korean and Malayalam have narrow subject and object ranges.

As far as I am aware, the only other typological work that uses quantification is Bossong's (1998) study of experiential verbs, which is restricted to European languages.[2] (Bossong's paper will be discussed further below in § 4.1.)

This article thus provides the first quantification of the degree to which languages world-wide tend to use transitive encoding in their verbal lexicon. For such a quantitative assessment, we need systematic data from around the world (the Valency Patterns Leipzig database, § 2.1), we need a sample of verbs (§ 2.2), and we need a rigorous definition of transitivity as a comparative concept (§ 3).

The results (§ 4) are somewhat surprising: We find that the European languages in our sample are not particularly transitivity-prominent. Languages from other

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2 After this work was completed, I became aware of Say's (2014) thorough quantitative study (restricted to European languages).

parts of the world use transitive encoding to an even higher degree. I briefly discuss how the myth of high transitivity prominence in Western European languages could have arisen but also emphasize that measuring the degree of transitivity prominence in such a way that it corresponds to our intuitions is very difficult.

2 The language sample and the verb sample

2.1 Cross-linguistic data: The ValPaL database

The data for this paper come from the Valency Patterns Leipzig (ValPaL) database, which contains data from 36 languages world-wide (Hartmann et al. 2013). We brought together a consortium of 36 author teams (experts in their respective lan-

Tab. 1: The 36 languages of ValPaL.

language	family	macro-area
Mandinka	Mande	Africa
Nǁng	Tuu	
Yoruba, Emai	Benue-Congo	
Modern Standard Arabic	Afro-Asiatic	
Eastern Armenian, German, English, Icelandic, Italian, Russian	Indo-European	Eurasia
Bezhta	Nakh-Daghestanian	
Chintang, Mandarin Chinese	Tibeto-Burman	
Ket	Yeniseian	
Ainu	Ainu	
Even, Evenki	Tungusic	
Korean	Korean	
Standard Japanese, Mitsukaido Japanese, Hokkaido Japanese	Japanese	
Sri Lanka Malay, Jakarta Indonesian, Xârâcùù, Balinese	Austronesian	Papunesia
Nen	Morehead-Wasur	
Jaminjung	Mirndi	Australia
Sliammon	Salishan	North America
Ojibwe	Algonquian	
Hoocąk	Siouan	
Yaqui	Uto-Aztecan	
Zenzontepec Chatino	Otomanguean	
Yucatec Maya	Mayan	
Bora	Boran	South America
Mapudungun	Mapudungun	

guages; see Appendix A) to provide a dataset of 80 verbs with detailed valency information. The individual datasets are comparable because they consist of counterparts to the same set of 80 basic verb meanings. The aggregated database was published online (valpal.info).

The database groups the verbs into valency frames, or more specifically coding frames, because it only takes into account two types of argument-coding devices: Flags (case-markers and adpositions) and index-sets (sets of person-number cross-referencing markers). In addition, there is information about alternations undergone by the verbs, as well as a large number of glossed examples. Assembling this database from the author teams was very time-consuming, so it was impossible to gather data from more languages. This would have been desirable, because our 35 languages do not give a satisfactory picture of world-wide diversity, also because they are not evenly distributed. The languages are arranged by macro-area (broadly following Glottolog) and family in Table 1 (see Appendix 1 for the names of the contributors).

2.2 The verb sample

Sampling verb meanings in such a way that they are representative of the verb meanings of languages presents a different kind of challenge. While we have a good idea of what set of languages would be representative but lack data, in the case of verb meanings we do not know how to even address the issue of representativeness, other than by intuition. Thus, we had to be content with a set of verb meanings that intutively seemed to satisfy the following criteria:
–   they are diverse in terms of the kinds of meanings and the number of associated arguments
–   they are reasonably common in language use (in traditional societies)
–   they can be expected to have counterparts in all or most languages

The 80 verb meanings are listed in Table 2.

Each verb meaning is associated with a set of verb-specific micro-roles which (potentially) correspond to arguments of verbs. For example, the verb meaning cover (as in 'the mother covered the child with a blanket') has three microroles: the coverer (in our example, the mother), the covered thing (the child) and the cover (the blanket). These micro-roles are linked to language-specific arguments in the coding frames via reference numbers. For example, in Bora (see (5)), the coverer (1) is expressed as the nominative argument of the verb *wátájcó* 'cover', the covered thing (2) is expressed as the accusative argument and the cover (3) is expressed as the allative argument. This is expressed by the coding frame <1-nom 2-acc 3-all V>. There are two other Bora verbs in (5b–c).

Tab. 2: The 80 verb meanings of ValPaL.

EAT	FOLLOW	HIDE	JUMP	SINK (intr)
HUG	MEET	SHOW	SING	BURN (intr)
LOOK AT	TALK	GIVE	GO	BE DRY
SEE	ASK FOR	SEND	LEAVE	RAIN
SMELL	SHOUT AT	CARRY	LIVE	BE A HUNTER
FEAR	TELL	THROW	LAUGH	GRIND
FRIGHTEN	SAY	TIE	SCREAM	WIPE
LIKE	NAME	PUT	FEEL PAIN	DIG
KNOW	BUILD	POUR	FEEL COLD	PUSH
THINK	BREAK	COVER	DIE	BRING
SEARCH FOR	KILL	FILL	PLAY	STEAL
WASH	BEAT	LOAD	BE SAD	TEACH
DRESS (tr)	HIT	BLINK	BE HUNGRY	HEAR
SHAVE	TOUCH	COUGH	ROLL (intr)	COOK
HELP	CUT	CLIMB	JUMP	BOIL (intr)

(5) Bora   (Seifart 2013)

    a. COVER   *wátájcó*   <1-nom 2-acc 3-all V>

                     coverer   1   NP-nom

                     covered thing   2   NP-acc

                     cover   3   NP-all

    b. FOLLOW   *úraavyé*   <1-nom 2-acc>

                     follower   1   NP-nom

                     followee   2   NP-acc

    c. ROLL (intr) *víyiivye*   <1-nom 2-all V>

                     rolling entity   1   NP-nom

                     rolling location 2   NP-all

With the Icelandic verb *horfa* 'look at', the looker argument (1) is coded by nominative case and subject indexing on the verb, and the looked at entity (2) is expressed by a prepositional phrase with the preposition *á* (see 6a)). This verb thus has the coding frame <1-nom V.subj[1] *á*+2-acc>. Another Icelandic verb is given in (6b).

(6) Icelandic   (Barðdal 2013)

    a. LOOK AT   *horfa*   <1-nom V.subj[1] *á*+2-acc>

                     looker   1   NP-nom & V.subj

                     looked at entity 2   *á*+NP

    b. LIKE   *líka*   <1-dat V.subj[2] 2-nom>

                     liker   1   NP-dat

                     liked entity   2   NP-nom & V.subj

So far we have seen how verbs are selected and how their valency properties are recorded in the database by coding frames. But since the coding information (flags such as case-markers and adpositions, index-sets such as subject cross-referencing) is language-specific, this does not allow us to compare valency information across languages yet. How I define transitivity cross-linguistically will be explained in the next section.

3 How to define transitivity cross-linguistically

In order to measure the degree of transitivity prominence across languages, we need a rigorous way of defining transitivity in such a way that for each coding frame, we can decide unambiguously whether it is transitive or not. A scalar notion of transitivity (e.g. Hopper & Thompson 1980) is thus not suitable for my purposes.

My definition of transitivity follows Lazard (2002) and Haspelmath (2011). I start out from the typical transitive verb 'break' and define *transitive encoding* as the encoding that is used by this verb, as summarized in (7).

(7) definition of transitivity
A verb is considered transitive if it contains an A and a P argument. A and P are defined as the arguments of a verb with at least two arguments that are coded like the 'breaker' and the 'broken thing' micro-roles of the 'break' verb.

Let us consider two languages in order to illustrate how this works. In Hoocąk, the breaker micro-role of the 'break' verb *gišiš* is encoded by the actor index-set on the verb, and the broken thing is encoded by the undergoer index-set, as summarized by the coding frame <1 2 und[2].act[1].V> in (8). There are no case-markers or adpositions, so Hoocąk is typologically rather different from languages such as Bora and Icelandic. Still, we can compare the different types of languages by looking at the coding of an exemplary verb like the 'break' verb. All the verbs that have two arguments (A and P) that use the same encoding are regarded as transitive verbs. Thus, the verb *horoğoc* 'look at' is counted as a verb with transitive encoding in Hoocąk.

(8) Hoocąk   (Hartmann 2013)

a.	BREAK	*gišiš*	<1 2 und[2].act[1].V>	
		breaker	1	act.V
		broken thing	2	und.V
b.	LOOK AT	*horoğoc*	< 1 2 und[2].act[1].V>	
		looker	1	act.V
		looked at entity	2	und.V

Another example is Even (see (9)), which has a lot of case-marking, like Bora and Icelandic. The 'break' verb *čelgel-* requires the breaker to be coded with nominative case and verbal subject indexing, and the broken thing with accusative case. In addition, the verb can have an instrumental argument, so that it has the coding frame <1-nom 2-acc 3-instr V.subj[1]>.[3] Now let us consider *bele-* 'help' (9b). This verb has two arguments, but the second argument is coded with dative case, so it is not a P argument, and hence the verb does not count as transitive.

(9) Even   (Malchukov 2013)

a.	BREAK	*čelgel-*		<1-nom 2-acc 3-instr V.subj[1]>
		breaker	1	1-nom & V.subj
		broken thing	2	2-acc
		breaking instrument	3	3-instr
b.	HELP	*bele-*		<1-nom 2-dat V.subj>
		helper	1	1-nom & V.subj
		helpee	2	2-dat

This method thus allows us to define transitive encoding as a comparative concept without the need to assume universal or cross-linguistic categories or features (cf. Haspelmath 2010). Concepts such as 'nominative', 'ergative', 'dative', 'actor', 'undergoer', which have proven indispensable at the language-specific (descriptive) level but are difficult to apply cross-linguistically, are thus not necessary for this comparative approach.

It should be noted that the concepts of A and P are not equivalent to "macro-agent" or "macro-patient" or anything of that sort. They are not semantic macro- (or hyper-, or proto-) roles. A and P are ARGUMENT TYPES, defined with reference to the coding (flagging and indexing) of the 'breaker' and 'broken thing' micro-role.

It seems to me that this definition of transitivity is fully in line with the great majority of actual uses of the term *transitive* in the literature. Even though Hopper & Thompson's (1980) scalar and multi-factorial view of "transitivity" has been widely cited, few linguists would say, for example, that the verb 'die' is more transitive than the verb 'shine' because it is telic. In actual practice, transitivity refers to argument coding, and linguists will call a verb transitive if it is coded in the same way as 'break'. This is true both in language-specific works and in typology. Tsunoda (1985), one of the most prominent works on transitivity in typology, uses exactly the same definition as I do:

> "Before commenting on transitive case frames, we first need to define prototypical transitive verbs. They are defined as 'those verbs which describe an action that not only impinges on the patient but necessarily creates a change in it', e.g. kill, destroy, break, bend. ... We stipulate explicitly that a transitive case frame must involve prototypical transitive verbs ..." (Tsunoda 1985: 387)

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3 Note that whether the instrumental phrase is considered an argument or an adjunct is irrelevant for the definition of transitivity. All that counts is the coding of the breaker and the broken thing.

Very similar definitions can be found in Comrie (1989) and Andrews (2007: 138).

I recognize that there is something arbitrary about choosing the 'break' verb as the yardstick by which to define transitivity. However, it turns out that in language after language, there is a large number of other verbs that have the same coding properties as 'break'.[4] It might seem that a more principled approach would be to look for the "major two-argument verb class" in each language (see Witzlack-Makarevich 2011), and this would probably yield the same results[5]. At least in the ValPaL database, the coding frame of the verb 'break' is the most frequent coding frame in all languages. However, this alternative requires the identification of two-argument verbs, and this is not straightforward, as we cannot reliably distinguish arguments from adjuncts across languages (e.g. Haspelmath 2014). With verbs like 'sit', 'jump' and 'talk', it is not clear whether the sitting place, the jumping goal and the talking co-participant should be regarded as arguments or adjuncts, at least in many languages. Places, goals and co-participants can occur with many verbs and are not as verb-specific as more typical arguments (e.g. breaker and broken thing). This is thus a difficulty that my approach avoids.

Another problem for the alternative approach is the representativeness of verb samples. I noted in § 2.2 that this is a difficult question: One might argue that the ValPaL verb meanings are not representative of verb lexicons, and biased toward transitive verbs. Alternatively, the "major two-argument verb class" could be identified by looking at the whole range of verbs of a language, but in practical terms this is also very difficult, and completely impossible in typology.

Interestingly, Lazard (2005) has argued that intuition-based, arbitrary decisions are unavoidable in typology and do not detract from the methodological rigour of the enterprise. This is well-illustrated by the notion of transitivity: There is no question that this is an interesting concept in cross-linguistic research, and we can identify transitive verbs rigorously and objectively by my method, but my initial definition (in terms of the 'break' verb) is somewhat arbitrary and intuition-based.

4 Results

Let us now look at the results from our database. On the basis of our data, we can actually examine transitivity prominence from two perspectives: How transitivity-

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This is important, because there is no good way of distinguishing between arguments and adjuncts from a cross-linguistic point of view (Haspelmath 2014).

4 Alternatively, I could have chosen 'kill', or 'destroy', or 'bend' (cf. the quote from Tsunoda above). 'Break' seemed the best choice for purely practical reasons (more frequent, easier to elicit, etc.).

5 See Blasi (in this volume) for an attempt to extract this information from the ValPaL database and a statistical assessment. It seems that given the ValPaL data, there is no other verb that would work better than 'break'.

prominent are the 35 languages of our sample, and how transitivity-prominent are the 80 verbs? I begin with the first question, which was highlighted in the introduction of this paper.

4.1 Differences between languages

As expected, we find that languages differ in the extent to which they use transitive encoding in the 80 sample verbs.

However, they do not differ dramatically. All our 36 languages have the transitive class as their major verb class within the sample of counterparts to the 70 core comparison meanings of Table 4, so the prominence of transitivity does seem to be a robust language universal (as suggested by Lazard 2002: 152). Of course, the sample is not fully representative and not very large, so I have still not proved this. But if languages that do not have large numbers of verbs that behave like 'break' were very common, we might have encountered one or two of them.

The expectation that "Western European languages" are particularly transitivity-prominent (cf. the quotation from Lazard (2002) in §1) was not confirmed by our data. If we measure transitivity-prominence by the percentage of verbs that show transitive encoding and rank our 36 languages (see Table 3), we see that English, German and Icelandic are in the lower half. Italian is right in the middle, and its percentage of transitive verbs (.62) is closer to English (.58) than to the top-ranking Chintang (.75) and Emai (.70).

Tab. 3: ValPaL languages ranked by transitivity-prominence.
(= percentage of transitively encoded verbs among the sample verbs)

Chintang	.75	Mandinka	.62
Emai	.70	Hoocąk	.61
Nǁng	.70	Japanese (standard)	.61
Ojibwe	.69	Jaminjung	.61
Yorùbá	.68	Modern Standard Arabic	.60
Xârâcùùi	.66	Evenki	.59
Bora	.66	Mitsukaido Japanese	.58
Balinese	.66	English	.58
Zenzontepec Chatino	.65	Hokkaido Japanese	.58
Mandarin Chinese	.65	Korean	.58
Yucatec Maya)	.65	German	.56
Jakarta Indonesian	.64	Nen	.54
Sliammon	.64	Eastern Armenian	.54
Ainu	.64	Russian	.50
Yaqui	.64	Icelandic	.47
Mapudungun	.64	Ket	.46
Even	.63	Sri Lanka Malay	.45
Italian	.62	Bezhta	.40

Apparently the reason why Lazard (2002) spoke of "Western European" languages is that he was aware that Russian has fewer transitive verbs, and that especially experiential verbs (e.g. *nravit'sja* 'like') and pursuit verbs (e.g. *sledovat'* 'follow') are less often transitive. The difference between Russian and English can be seen in Table 3, but there is no difference between English and German. Hawkins's (1986) observations are thus not reflected in our sample.[6] On the other hand, there is a striking difference between Icelandic and other other European languages. Icelandic seems to have preserved the older Indo-European situation better than any other Indo-European language (cf. Barðdal & Smitherman 2013), and is more similar to Russian in this respect that the other Western European languages.

The really surprising observation is that there are quite a few languages that show a greater degree of transitive encoding than English, with its reputation of a highly transitive language (e.g. Givón 1993: 109, n. 14). It turns out that this reputation is not well-deserved. English is highly transitivity-prominent in comparison with Russian and Icelandic, and also in comparison with Daghestanian languages like Bezhta, but not on a world-wide scale.

Let us look at some examples of (perhaps unexpected) transitive encoding in non-European languages:

(10) Chintang (Schikowski et al. 2013)
maʔmi-ŋa   bhiri sopt-o-s-e
person-ERG hill   climb-[3SA.]3[S]P-PRF-IND.PST
'The man has climbed (up) the hill.'

(11) Emai (Schaefer & Egbokhare 2013)
Òjè   ò   ọ̀   jè   àlèkè.
Oje   SC   C   laugh   Aleke
'Oje is laughing at Aleke.'

(12) Yucatec Maya (Lehmann 2013)
le   xibpal-o' t-u   pakat-ah   le   xch'úupal-o'
DEM   boy-D2   PRFV-SBJ.3 look-CMPL DEM   girl-D2
'The boy looked at the girl.'

(13) Yaqui (Estrada-Fernández et al. 2013)
Ume   yoeme-m ili   uusi-ta   jariwa.
DET.PL man-PL   little child-ACC   search_for
'The men are looking for the child.'

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6 Hawkins highlights cases such as *The book sold many copies*, or *This car seats four*. This is indeed a construction type that is much rarer in German than in English, but it plays no role in my study because I look only at the basic verb meanings (Table 1).

(14) Balinese (Shibatani & Artawa 2013)

> *Tiang nyakitang lima=n tiang=e.*
> I hurt hand=LIG I=POSS
> 'I am feeling pain in my arms.' (Lit. 'I am hurting my arms.')

If it is not true that European languages are more transitivity-prominent than languages elsewhere, how might this myth have arisen? One obvious possibility is that the samples that earlier scholars looked at were biased. They may have looked primarily at well-studied Eurasian languages to the east of Europe (like Russian, Georgian, Hindi-Urdu, Japanese), which are indeed not transitivity-prominent, or they may have been influenced by Australian languages (e.g. Tsunoda 1985), which likewise appear to have low transitivity prominence.

Bossong (1998) was the first to study something like our transitivity prominence in some detail for over thirty European languages: He considered ten experiential predicates and looked at the degree to which the experiencer is treated like a subject (A), the stimulus is treated like a direct object (P), and the predicate is treated like a simple (transitive) verb. He assigned scores to these languages, ranging from 0.0 for English (full transitivity) through 0.92 for Welsh (with roughly equal transitivity and intransitivity) to 5.0 for Lezgian (no transitivity at all in the experiential predicates of the sample). Lezgian's low position thus corresponds to Bezhta's low position in Table 3 (both are northern Caucasian languages of the Nakh-Daghestanian family). As in our sample, German, Russian and Icelandic are in between the extremes of English and Lezgian, so there is some correspondence between Bossong's scale and my scale.[7] However, Bossong only looked at experiential verbs, so the fact that English has intransitive verbs like *look at, listen to, shout at, think about, play with, sit on* does not play a role in his study.

More generally, however, there is a problem with any attempt to measure the degree to which a language shows a particular degree of transitivity prominence. We do not have a good way of selecting representative samples of verbs, and it is hardly possible to take the full range of variation into account in one's counts. For example, Bossong gives two counterparts of 'remember' for Russian (*pomnju* and *mne pomnitsja*), though here one could have decided to exclude the second variant because it is much less common. Similarly, he gives two counterparts for 'forget' in German (*ich vergesse* and *mir entfällt*), where again the second is much less usual. The ValPaL database is beset by exactly the same kinds of problems. There is no doubt that there are real and significant differences between languages that

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7 In Haspelmath (1998), I noted that the results of Bossong's count nicely fit the Standard Average European areal pattern: The languages in the centre tend to have high transitivity prominence, while the languages to the west (Celtic) and to the east in Europe (Balto-Slavic, Uralic, Caucasian, but also Romanian and Albanian) have low transitivity prominence.

are worth studying further, but one should not take the numbers in Table 3 too literally.

4.2 Differences between verbs

As mentioned earlier, there is a well-known scale of verb meanings set up by Tsunoda (1985) on the basis of nine languages with ergative flagging.

(15) direct effect > perception > pursuit > cognition > emotion
    BREAK > HIT > SEE > LOOK   SEARCH   KNOW   LIKE

This was seen as an implicational scale by Tsunoda, because he did not have a larger set of languages and he did not compute transitivity prominence of verb meanings. However, we can compare our data with Tsunoda's proposal.

Table 4 shows our verb meanings by their transitivity prominence, i.e. the percentage of transitive verbs among all counterpart verbs. By definition, 'break' is among those meanings that have a transitivity prominence figure of 1.00. In (16), I show the match between Tsunoda's ranking and our figures.

(16) Tsunoda   transitivity-prominence (ValPaL-based)
    BREAK   1.00
    HIT   1.00
    SEE   .93
    LOOK AT   .73
    SEARCH   .88
    KNOW   .88
    LIKE   .78

There is a broad match between the scale and our ranking, though there is no difference between 'hit' and 'see', and between 'search' and 'know'. The only striking discrepancy between the two is the position of 'look (at)', which Tsunoda places next to 'see', while in our data it is even below 'like'. Perhaps the reason for this is that Tsunoda was looking for a semantic rationale for his scale, and semantically 'look at' is of course similar to 'see'. But in terms of coding, quite a few languages treat it differently. In general, our ranking does not yield clear semantic groupings, except for the obvious generalization that physical-effect verbs tend to be very high on the scale.

My results also broadly confirm Malchukov's (2005) proposal to split Tsunoda's unidimensional scale up into two different scales. According to Malchukov, activity meanings like 'hit' and 'search' are in a different semantic dimension than experiential meanings like 'see', 'know' and 'like'. This is shown in Figure 1.

Tab. 4: ValPaL verb meanings ranked by transitivity-prominence.
(= percentage of transitively encoded verbs among all counterpart verbs)

BREAK	**1.00**	**LIKE**	**.78**
TEAR	1.00	TELL	.78
SHOW	1.00	FOLLOW	.74
BEAT	1.00	**LOOK AT**	**.73**
CUT	1.00	MEET	.70
TAKE	1.00	FEAR	.53
KILL	1.00	THINK	.52
HIT	**1.00**	CLIMB	.49
FRIGHTEN	.98	SHOUT AT	.45
GIVE	.98	LEAVE	.42
THROW	.98	SAY	.41
TIE	.98	TALK	.40
PUT	.98	SING	.38
FILL	.98	FEEL PAIN	.12
HIDE	.97	BLINK	.11
LOAD	.96	PLAY	.10
PEEL	.96	RUN	.05
ASK FOR	.95	SIT	.05
CARRY	.95	GO	.05
COVER	.95	LIVE	.05
POUR	.95	SIT DOWN	.03
WASH	.94	LAUGH	.03
SHAVE	.93	SCREAM	.03
SEE	**.93**	SINK (intr.)	.03
SEND	.93	COUGH	.0
BUILD	.93	JUMP	.0
EAT	.93	FEEL COLD	.0
DRESS	.92	DIE	.0
HUG	.90	BE SAD	.0
SEARCH FOR	**.88**	BE HUNGRY	.0
KNOW	**.88**	ROLL (intr.)	.0
TOUCH	.84	BURN (intr.)	.0
NAME	.80	BE DRY	.0
HELP	.78	RAIN	.0
SMELL	.78	BE A HUNTER	.0

Again, the transitivity-prominence figures broadly correspond to the earlier hypotheses based on non-quantitative research methods.

```
        ┌──────────┐   ┌──────────┐   ┌──────────┐
        │ HIT      │───│ SEARCH   │───│ GO       │
        │ (.94)    │   │ (.89)    │   │ (.06)    │
        └──────────┘   └──────────┘   └──────────┘
┌──────────┐
│ BREAK    │
│ (1.00)   │
└──────────┘   ┌──────────┐   ┌──────────┐   ┌──────────┐
        │ SEE (.92)│───│ FEAR     │───│ ACHE     │
        │ KNOW(.88)│   │ (.55)    │   │ (.12)    │
        └──────────┘   └──────────┘   └──────────┘
```
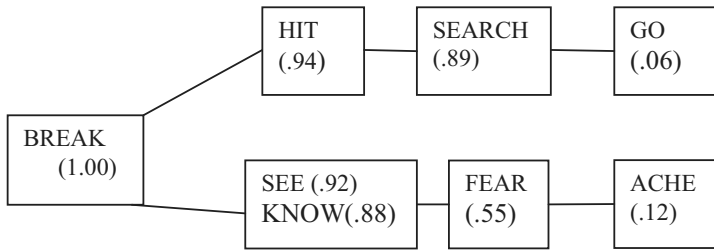
Fig. 1: Malchukov's two-pronged scale of verb meanings.

5 Conclusion

My cross-linguistic study of transitivity prominence has largely confirmed the earlier studies by Tsunoda (1985) and Malchukov (2005) for degrees of transitivity prominence of verb meanings. While these studies were formulated in terms of implicational scales, I studied transitivity prominence purely quantitatively and found decreasing transitivity prominence in the series 'break', 'hit', 'see', 'search for', 'know', 'like' and 'look at'.

For degrees of transitivity prominence of languages, this study did not confirm the earlier opinion that English and similar languages are particularly transitivity-prominent. Many languages seem to make extensive use of transitivity. It seems that languages that make less use of transitive encoding than English (especially having experiencers and oblique objects of various kinds) are salient for linguists, while languages that make more use of transitive encoding have been overlooked. This is understandable, because coding by some kind of oblique case is more remarkable than coding by means of the usual transitive pattern.

Appendix A: The ValPaL Consortium

Mandinka	Mande	Denis Creissels
N‖ng	Tuu	Martina Ernszt,
		Alena Witzlack-Makarevich &
		Tom Güldemann
Yorùbá	Benue-Congo	Joseph Atoyebi
Emai	Edoid	Ronald Schaefer &
		Francis Egbokhare
Modern Standard Arabic	Semitic	Csilla Kász
Eastern Armenian	Indo-European	Victoria Khurshudian &
		Michael Daniel
German	Indo-European	Luisa Baumann
		& Martin Haspelmath

English	Indo-European	Cliff Goddard
Icelandic	Indo-European	Jóhanna Barðdal
Italian	Indo-European	Michela Cennamo
Russian	Indo-European	Andrej Malchukov & Alexander Jahraus
Bezhta	Daghestanian	Bernard Comrie, Zaira Khalilova & Madzhid Khalilov
Chintang	Tibeto-Burman	Robert Schikowski, Balthasar Bickel & Netra Prasad Paudyal
Ket	Yeniseian	Edward J. Vajda & Elena Kryukova
Mandarin Chinese	Sino-Tibetan	Zhang Guohua
Ainu	Ainu	Anna Bugaeva
Even	Tungusic	Andrej Malchukov
Evenki	Tungusic	Igor Nedjalkov
Korean	Korean	Soung-U Kim
Japanese (standard)	Japanese	Hideki Kishimoto & Taro Kageyama
Mitsukaido Japanese	Japanese	Kan Sasaki
Hokkaido Japanese	Japanese	Kan Sasaki
Sri Lanka Malay	Austronesian	Sebastian Nordhoff
Jakarta Indonesian	Austronesian	Thomas J. Conners & David Gil
Xârâcùù	Oceanic	Claire Moyse-Faurie
Balinese	Austronesian	Masayoshi Shibatani & Ketut Artawa
Nen	Morehead-Wasur	Nicholas Evans
Jaminjung	Mirndi	Eva Schultze-Berndt
Sliammon	Salishan	Honoré Watanabe
Ojibwe	Algonquian	Rand Valentine & Richard Rhodes
Hoocąk	Siouan	Iren Hartmann
Yaqui	Uto-Aztecan	Zarina Estrada-Fernández, Jesús Villalpando Quiñonez & Mercedes Tubino Blanco
Zenzontepec Chatino	Otomanguean	Eric Campbell
Yucatec Maya	Mayan	Christian Lehmann
Bora	Boran	Frank Seifart
Mapudungun	Mapudungun	Fernando Zúñiga

References

Andrews, Avery D. 2007. The major functions of the noun phrase. In Timothy Shopen (ed.), *Language Typology and Syntactic Description*, vol. I: Clause Structure, 132–223. 2nd edition. Cambridge: Cambridge University Press.

Barðdal, Jóhanna. 2013. Icelandic Valency Patterns. In *ValPaL*.

Barðdal, Jóhanna & Thomas Smitherman. 2013. The quest for cognates: A reconstruction of oblique subject constructions in Proto-Indo-European. *Language Dynamics and Change* 3(1). 28–67.

Blasi, Damián. 2015. Assessing transitivity prominence from a statistical perspective: a commentary. In this volume.

Bossong, Georg. 1998. Le marquage de l'expérient dans les langues d'Europe. In Jacques Feuillet (ed.), *Actance et valence dans les langues de l'Europe*, 259–294. Berlin: Mouton de Gruyter.

Comrie, Bernard. 1989. *Language Universals and Linguistic Typology: Syntax and Morphology*. 2nd edn. Oxford: Blackwell.

Cysouw, Michael. 2011. Quantitative explorations of the world-wide distribution of rare characteristics, or: The exceptionality of northwestern European languages. In Horst J. Simon & Heike Wiese (eds.), *Expecting the Unexpected: Exceptions in Grammar*, 411–432. Berlin: Mouton de Gruyter.

Dahl, Östen. 1990. Standard Average European as an exotic language. In Johannes Bechert, Giuliano Bernini & Claude Buridant (eds.), *Toward a Typology of European Languages*, 3–8. Berlin: Mouton de Gruyter.

Ernszt, Martina, Alena Witzlack-Makarevich & Tom Güldemann. 2013. N∥ng Valency Patterns. In *ValPaL*.

Estrada-Fernández, Zarina, Mercedes Tubino Blanco & Jesús Francisco Villalpando Quiñonez. 2013. Yaqui Valency Patterns. In *ValPaL*.

Givón, Talmy. 1993. *English Grammar: A Function-Based Introduction*. vol. I. Amsterdam: Benjamins.

Hartmann, Iren, Martin Haspelmath & Bradley Taylor (eds.). 2013. *Valency Patterns Leipzig*. Leipzig: Max Planck Institute for Evolutionary Anthropology. Published online at http://valpal.info.

Hartmann, Iren. 2013. Hoocąk Valency Patterns. In *ValPaL*.

Haspelmath, Martin. 1998. How young is Standard Average European? *Language Sciences* 20. 271–287.

Haspelmath, Martin. 2010. Comparative concepts and descriptive categories in crosslinguistic studies. *Language* 86(3). 663–687.

Haspelmath, Martin. 2011. On S, A, P, T, and R as comparative concepts for alignment typology. *Linguistic Typology* 15(3). 535–567.

Haspelmath, Martin. 2014. Arguments and adjuncts as language-particular syntactic categories and as comparative concepts. *Linguistic Discovery* 12(2). 3–11.

Hawkins, John A. 1986. *A Comparative Typology of English and German: Unifying the Contrasts*. Austin: University of Texas Press.

Hopper, Paul J. & Sandra A. Thompson. 1980. Transitivity in grammar and discourse. *Language* 56. 251–299.

Lazard, Gilbert. 2002. Transitivity revisited as an example of a more strict approach in typological research. *Folia Linguistica* 36(3–4). 141–190.

Lazard, Gilbert. 2005. What are we typologists doing? In Zygmunt Frajzyngier, Adam Hodges & David S. Rood (eds.), *Linguistic Diversity and Language Theories*, 1–23. Amsterdam: Benjamins.

Lehmann, Christian. 2013. Yucatec Maya Valency Patterns. In *ValPaL*.

Malchukov, Andrej. 2005. Case pattern splits, verb types, and construction competition. In Mengistu Amberber & Helen de Hoop (eds.), *Competition and Variation in Natural Languages*, 73–117. London: Elsevier.

Malchukov, Andrej. 2013. Even Valency Patterns. In *ValPaL*.

Müller-Gotama, Franz. 1994. *Grammatical Relations: A Cross-Linguistic Perspective on their Syntax and Semantics*. Berlin: Mouton de Gruyter.

Say, Sergey. 2014. Bivalent verb classes in the languages of Europe. *Language Dynamics and Change* 4(1). 116–166.

Schaefer, Ronald & Francis Egbokhare. 2013. Emai Valency Patterns. In *ValPaL*.

Schikowski, Robert & Balthasar Bickel & Netra Prasad Paudyal. 2013. Chintang Valency Patterns. In: *ValPaL*.

Seifart, Frank. 2013. Bora Valency Patterns. In *ValPaL*.

Shibatani, Masayoshi & Ketut Artawa. 2013. Balinese Valency Patterns. In *ValPaL*.

Tsunoda, Tasaku. 1985. Remarks on transitivity. *Journal of Linguistics* 21. 385–396.

ValPaL: see Hartmann et al. 2013.

Witzlack-Makarevich, Alena. 2011. Typological variation in grammatical relations. Leipzig: University of Leipzig Ph.D. dissertation.