

Transitivity prominence within and across modalities

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The idea of transitivity as a scalar phenomenon is well known (e.g., Hopper & Thompson 1980; Tsunoda 1985; Haspelmath 2015). However, as with most areas of linguistic study, it has been almost exclusively studied with a focus on spoken languages. A rare exception to this is Kimmelman (2016), who investigates transitivity in Russian Sign Language (RSL) on the basis of corpus data. Kimmelman attempts to establish a transitivity prominence hierarchy of RSL verbs, and compares this ranking to the verb meanings found in the ValPal database (Hartmann, Haspelmath & Bradley 2013). He arrives at the conclusion that using the frequency of overt objects in corpus data is a successful measure of transitivity prominence, and that the prominence ranking of RSL verbs correlate with that found for spoken languages in Haspelmath (2015).

In this paper, we expand on these intra- and cross-modal comparisons of transitivity prominence by introducing four other sign languages to the sample: Finnish Sign Language (FinSL), Swedish Sign Language (SSL), Sign Language to the Netherlands (NGT), and German Sign Language (DGS). FinSL and SSL are known to be historically related (cf. Bergman & Engberg-Pedersen 2010), while the other are not related, which allows us to look at both modality and relatedness effects in our sample.

Of the 80 core verb meanings in the ValPal database, Kimmelman (2016) included the 25 most frequent verbs in his corpus. For our study, we have annotated all occurrences of these 25 verb meanings in a subset of the corpora of FinSL (2h 40min; 18,446 tokens), SSL (2h 5min; 16,724 tokens), NGT (≈80,000 tokens), and DGS (≈58,000 tokens). We annotate whether a verb occurs with an overt object as well as the type of object (direct, indirect, clausal, or a locative). Looking at the ValPal verb meanings with ≥5 sign tokens in all four new languages, we arrive at 12 verbs that are found in all five sign languages and the spoken languages (SpL) of the ValPal database – see Table 1.

In Table 1, we see that there is a general agreement across languages – both signed and spoken – in how transitivity prominent a verb meaning is. Spearman's rank correlation shows a significant ($p < 0.05$) correlation between all possible pairs except SSL–SpL ($p = 0.091$) and SSL–RSL ($p = 0.074$), corroborating Kimmelman's finding that there are patterns of transitivity prominence present across languages and modalities. It is interesting that SSL thus diverges from the other sign languages in this sample: this deserves further investigation.

We also wanted to investigate the transitivity prominence as a property of individual languages. In order to do so, we took the individual languages of the ValPal database and measured each verb meaning in each language with regard to its transitivity prominence. This meant calculating how many of the verb forms associated with a specific verb meaning took a P argument. Note that this is quite different from calculating transitivity prominence based on corpus data: with corpora, we calculated the proportion of verbal tokens occurring with an overt object, and with the ValPal database, we calculated the proportion of transitive verb associated with a particular concept. We included the 12 verb meanings found across all languages (the five sign languages and 33 spoken languages). We then calculated mean distances across verb meanings and languages, and plotted this with multidimensional scaling in Figure 1.

In the figure, we see that the five sign languages form a part of a cluster, suggesting either modality-based similarities, or similarities that come with the difference in data (corpus data rather than lexical data). On the other hand, sign languages as a group are not clearly opposed to spoken languages as a group, which implies that the corpus-based and lexical calculations of transitivity are comparable. Interestingly, FinSL and SSL are not more strongly associated than the other sign languages, which implies that their historical relatedness is not directly relevant to transitivity.

In our presentation, we will present the results and the conclusions in more detail, as well as discuss the possibilities of using corpus data to establish valency patterns for languages in the signed modality.

Table 1: The ValPal verb meanings and the transitivity prominence across languages

Verb	SSL	FinSL	RSL	NGT	DGS	SpL
EAT	0,000	0,250	0,244	0,160	0,500	0,930
GIVE	0,788	0,846	0,640	0,692	0,690	0,980
KNOW	0,433	0,550	0,236	0,472	0,407	0,880
LEAVE	0,000	0,000	0,000	0,000	0,000	0,420
LIVE	0,000	0,000	0,000	0,000	0,000	0,050
LOOK	0,240	0,234	0,054	0,240	0,069	0,730
PLAY	0,333	0,377	0,146	0,323	0,154	0,100
RUN	0,000	0,000	0,000	0,000	0,000	0,050
SEE	0,358	0,415	0,123	0,306	0,419	0,930
TALK	0,258	0,238	0,149	0,148	0,240	0,400
TELL	0,100	0,808	0,237	0,160	0,357	0,780
THINK	0,123	0,186	0,025	0,098	0,100	0,520

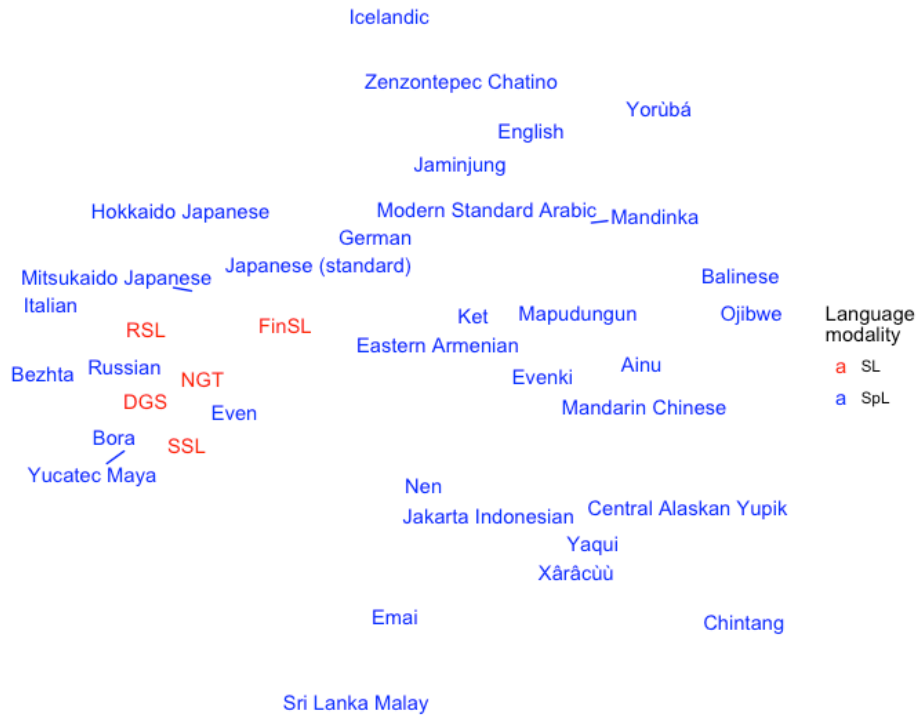


Figure 1: Multidimensional scaling plot of transitivity prominence across verb meanings and languages

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