A cross-linguistic examination of the Symmetry & Dominance Constraints

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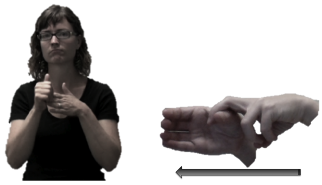
It has been suggested that the Symmetry and Dominance (S&D) Conditions, proposed by Battison (1) to describe the restrictions on signs produced with two hands are universal across signed languages (2). Yet, while Battison himself never claimed S&D to be universal, they are often presumed to hold cross-linguistically. The Symmetry Condition stipulates that for signs in which both hands move, the hands should be specified for the same configuration. The Dominance Condition requires that signs in which the hands do not bear the same configuration, the weak hand must bear an unmarked handshape and must remain passive; only the dominant hand can move. To assess whether it is reasonable to assume S&D can be applied to other languages, I evaluate data from a sample of nine sign language dictionaries (Brazilian, Chinese, Dutch, French, Italian, Hong Kong, Nicaraguan, Indian, and Mongolian) and discuss the types of violations exhibited in each language and the implications for S&D. I argue that the typological variation in data can be productively accounted for using Optimality Theory (OT) and building from recent work by Eccarius (3) in this framework.

From 3,454 signs, 100 S&D violations were identified. Violations fell into four main categories: signs with unified hand configuration (where both articulators move but do so together, like the ASL signs LEAD (Fig. 1a) and TAKE-RIDE (Fig. 1b), signs in which a marked base handshape was used, signs in which both hands move but the movement is not unified, and signs which violated S&D in some other manner.



(a) LEAD (b) TAKE-RIDE

Figure 1: S&D violations in ASL

The data show that each language has signs which violate S&D, but the extent to which this is allowed varies. For example, French, Nicaraguan and Italian SLs had fewer than 2% of S&D violations, while Chinese exhibited more than 10%. Trends emerged in the data with respect to the types of violations each language exhibited. One way to capture these patterns and to predict which types of violations will surface in different languages is to use OT. Prince & Smolensky's (4) model assumes that formational constraints that govern well-formedness can be ranked differently across languages yielding different types of outcomes; in this case a typology of two-handed signs. Eccarius suggested one type of faithfulness constraint necessary to account for sign language data is faithfulness to some real-world entity being depicted with the hands. Such an analysis, given the right constraints, can account for the S&D violations in the present investigation (Fig. 2). This tableau represents a constraint ranking necessary to demonstrate a language which allows the two hands to bear different configurations only if both hands move together. The first and second constraints, IDENTUNIF and IDENTSF reflect faithfulness to real-world referents. Respectively, taking a ride in a vehicle necessitates both entities move together and the H handshape on the dominant hand represents a two-legged entity. The third constraint, a markedness constraint, reflects a dispreference for hands bearing different configurations, but because the other constraints rank above it, it is violated in this instance and others throughout the dataset analyzed here.

Fig. 1*b* [TAKE-RIDE(C:H)]	IDENTUNIF	IDENTSF	*DIFFHS
a. ☞ TAKE-RIDE(C:H)			*
b. TAKE-RIDE(C:C)		*!	
c. TAKE-RIDE(C:H only H moves)	*!		

Figure 2: Tableau demonstrating the ranking IDENTUNIF»IDENTSF»*DIFFHS. Letters in parentheses indicate the handshapes each hand assumes in the production of the sign for the different candidates. IDENTUNIF states that corresponding elements between external referent contrasts and output contrasts should have comparable amounts of unification, IDENTSF states corresponding segments between external referent contrasts and output contrasts should have identical Selected Finger combinations (3), and *DIFFHS states that hands must be specified for the same configuration.

References

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