



Cognitive constraints on constituent order: Evidence from elicited pantomime



Matthew L. Hall^{a,*}, Rachel I. Mayberry^b, Victor S. Ferreira^a

^aDepartment of Psychology, University of California, San Diego, United States

^bDepartment of Linguistics, University of California, San Diego, United States

ARTICLE INFO

Article history:

Received 14 May 2012

Revised 29 March 2013

Accepted 7 May 2013

Available online 21 June 2013

Keywords:

Word order

SOV

Gesture

Pantomime

Sign language

Production

ABSTRACT

To what extent does human cognition influence the structure of human language? Recent experiments using elicited pantomime suggest that the prevalence of Subject-Object-Verb (SOV) order across the world's languages may arise in part because SOV order is most compatible with how we conceptually represent transitive events (Goldin-Meadow, So, Özyürek, & Mylander, 2008). However, this raises the question as to why non-SOV orders exist. Two recent studies (Meir, Lifshitz, Ilkbasaran, & Padden, 2010; Gibson et al., 2013) suggest that SOV might be suboptimal for describing events in which both the agent and patient are plausible agents (e.g. a woman pushing a boy); we call these "reversible" events. We replicate these findings using elicited pantomime and offer a new interpretation. Meir et al.'s (2010) account is framed largely in terms of constraints on comprehension, while Gibson et al.'s (2013) account involves minimizing the risk of information loss or memory degradation. We offer an alternative hypothesis that is grounded in constraints on production. We consider the implications of these findings for the distribution of constituent order in the world's spoken languages and for the structure of emerging sign languages.

© 2013 Elsevier B.V. All rights reserved.

1. Introduction

In natural languages, words refer to entities (e.g., cats, girls), states (bliss), and actions (petting). But we use natural language to describe more than just disconnected entities, states, and actions; we also describe how these relate to one another. To do so, we string words together into sentences (e.g., "The girl blissfully pets the cat"), so as to convey which entities are doing which activities to which other entities, in which states, and so forth. Thus, an important property of natural languages is that we require devices that allow us to not only convey who, what, and whom, but also who *did* what *to* whom.

One way that different languages convey such information is by mentioning these major constituents in a specific order. For example, in an English active sentence like "The boy pushed the box," the noun phrase before the verb is the subject of that verb and so denotes the entity that performed the action (sometimes called the *agent*), and the noun phrase after the verb is the object of the verb and so denotes the entity that had the action performed on it (sometimes called the *patient*). In fact, in most English sentences that have both a subject and an object, this particular ordering – subject-verb-object or SVO – is used, leading English to be termed an SVO language. Other languages use different orders of constituents than SVO. For example, in Turkish, sentences that have both a subject and object tend to order the subject first, followed by the object and then the verb, leading Turkish to be termed an SOV language. (It is important to note that this paper focuses mainly on the relative order of the semantic roles of agent, action, and patient, which can be dissociated from the syntactic

* Corresponding author. Address: Department of Psychology, Mail Code 0109, La Jolla, CA 92093-0109, United States. Tel.: +1 (858) 822 3781; fax: +1 (858) 534 7190.

E-mail address: matthall@ucsd.edu (M.L. Hall).

roles of subject, verb, and object, as in passive sentences such as, “The box was pushed by the boy.” However, for ease of exposition, we adopt the nomenclature of S, V, and O.)

Curiously, the distribution of constituent orders across language families is far from even. SOV is dominant, with SVO a close second, and VSO a distant third. The remaining orders (OSV, VOS, OVS) are extremely rare (Dryer, 2008; Greenberg, 1966; Hawkins, 1983; Tomlin, 1986). Furthermore, languages are known to change from SOV toward SVO, but the reverse change is much rarer (Gell-Mann & Ruhlen, 2011; Givón, 1979; Li, 1977). This suggests that in the past, SOV languages were once more dominant than they are now. Indeed, some research on the origins of language argues that human proto-language had SOV constituent order (Newmeyer, 2000). In short, SOV orders are not only predominant in the world’s present languages; they may have been even more so in the past.

The predominance of SOV order is unlikely to be solely due to sociolinguistic factors, such as which language communities contacted, conquered, or emigrated from which. For instance, SOV has quickly emerged as the dominant order of a young sign language (Al-Sayyid Bedouin Sign Language) that initially evolved with minimal contact from other sign languages, and where the ambient spoken languages use SVO (Sandler, Meir, Padden, & Aronoff, 2005). This is especially noteworthy given the observation that similar convergence at the phonological level has not yet occurred in this language (Aronoff, Meir, Padden, & Sandler, 2008). SOV and the related orders SV and OV have also been reported in the first generation of signers of another young sign language evolving in Nicaragua, although OSV was also observed (Senghas, Coppola, Newport, & Supalla, 1997). Haviland (2011) also reports preliminary evidence of SV, OV, and SOV emerging in an even younger sign system currently evolving in Mexico. This latter case is particularly interesting in that the ambient spoken language (Tzotzil) is robustly VOS. In all of these cases, the emergence of (S)OV cannot easily be attributed to any parent language, spoken or signed, and so is unlikely to be directly due to language contact.

Likewise, evidence suggests that persistent SOV preferences cannot be only due to learning biases during acquisition, or alignment among interlocutors. This is shown by cases where individuals create linguistic systems in the absence of input. Children are typically born into language-rich environments. However, children who are profoundly deaf from birth are sometimes not exposed to language until sometime after birth. While many of these children eventually receive linguistic input (either sign language or spoken language via hearing technology), others sometimes lack language input throughout childhood (Mayberry, Lock, & Kazmi, 2002). In these latter cases, children typically create a manual communication system known as homesign (Goldin-Meadow & Feldman, 1977). Parental contributions to these systems are minimal (Goldin-Meadow & Mylander, 1983); thus, whatever structure they exhibit can be attributed to a large extent to the child’s own innovation. Research has shown that the constituent order of homesign systems is remarkably consistent. Rather than being a grab bag of all possible orders, individuals’

utterances are mainly composed of a limited subset of these orders: SV and OV, which are both consistent with SOV, and familiar from the descriptions of emerging sign languages reviewed above (for a review, see Goldin-Meadow, 2003). This tendency is robust cross-culturally, suggesting that individual homesigners the world over have consistent preferences for constituent order (Goldin-Meadow & Mylander, 1998; Goldin-Meadow, Özyürek, Sancar, & Mylander, 2008). These observations point toward a cognitive preference for SOV in the absence of language input.

More relevant to the experiments reported here is the finding that a preference for SOV orders is not unique to deaf children. Goldin-Meadow So, et al. (2008) asked hearing non-signers from diverse linguistic backgrounds to describe transitive and intransitive events in pantomime. They found that for transitive events, participants showed a strong tendency to produce SV, OV, and SOV descriptions. This tendency was equally robust among SVO speakers (English, Spanish, Chinese) and SOV speakers (Turkish). These findings have since been replicated by Langus and Nespors (2010) as well as Gibson et al. (2013).

In sum, evidence from typology, new sign languages, homesign systems, and pantomime suggests that the SOV order may have a ‘special’ status. The final observation – that adults spontaneously and systematically pantomime events with SOV orders – points to a possible reason for this special status: SOV may be more compatible with the way that human cognitive systems tend to organize event knowledge. That is, people may think about dynamic events in such a way that they are more efficiently linearized in an SOV order (Goldin-Meadow So, et al., 2008). If so, SOV ordering would spontaneously emerge in humans’ initial languages (both when language first emerged and today), which explains the appearance of SOV in homesign systems and in adults’ spontaneous pantomime behavior.

However, despite the above evidence favoring SOV, there are also systematic ways in which languages shift away from SOV. Chief among these are two phenomena related to language change: rapid convergence on SVO when a pidgin becomes a creole, and gradual but unidirectional drift away from SOV. We briefly review each situation in turn.

The term *pidgin* refers to contact language that results when speakers of different languages are forced to communicate. Pidgins generally retain only the bare bones of linguistic structure from the input languages (i.e. the various native languages represented in the community). Thus, these situations provide an opportunity to examine how linguistic structure re-emerges when the relatively disorganized pidgin is regularized into a *creole* via the language acquisition of young learners who are exposed to it from early childhood. A significant feature of creoles is that they are almost always SVO (Bakker, 2008; McWhorter, 2001). Indeed, SVO is found even when a creole’s input languages were SOV (Kouwenberg, 1992).

Although this process is most easily observed in creoles, it is repeated on much slower time scales in natural languages. Languages are dynamic systems that change over centuries in response to various pressures. One systematic aspect of this diachronic change is that, as briefly noted above, languages commonly shift away from SOV, but do

Download English Version:

<https://daneshyari.com/en/article/10457686>

Download Persian Version:

<https://daneshyari.com/article/10457686>

[Daneshyari.com](https://daneshyari.com)