

Order in NP conjuncts in spoken English and Japanese

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Abstract

In the emerging field of cross-linguistic studies on language production, one particularly interesting line of inquiry is possible differences between English and Japanese in ordering words and phrases. Previous research gives rise to the idea that there is a difference in accessing meaning versus form during linearization between these two languages. This assumption is based on observations of language-specific effects of the length factor on the order of phrases (short-before-long in English, long-before-short in Japanese). We contribute to the cross-linguistic exploration of such differences by investigating the variables underlying the internal order of NP conjuncts in spoken English and Japanese. Our quantitative analysis shows that similar influences underlie the ordering process across the two languages. Thus we do not find evidence for the aforementioned difference in accessing meaning versus form with this syntactic phenomenon. With regard to length, Japanese also exhibits a short-before-long preference. However, this tendency is significantly weaker in Japanese than in English, which we explain through an attenuating influence of the typical Japanese phrase structure pattern on the universal effect of short phrases being more accessible. We propose that a similar interaction between entrenched long-before-short schemas and universal accessibility effects is responsible for the varying effects of length in Japanese. © 2014 Elsevier B.V. All rights reserved.

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1. Introduction

Recent research on language production has emphasized the need for cross-linguistic studies, particularly those involving typologically diverse languages (e.g. [Jaeger and Norcliffe, 2009](#); [Jaeger and Tily, 2011](#)). In theories of language production most mechanisms are assumed to be universal, thus to not depend on the speaker's language. However, evidence for these mechanisms comes predominantly from the study of English and a few typologically related languages. While this trend seems to have changed recently (see e.g. [Christianson and Ferreira, 2005](#); [Ueno and Polinsky, 2009](#); [Gennari et al., 2012](#)), many questions regarding possible language(-type)-specific effects in language production remain unanswered.

An important area of study in this regard is cross-linguistic research on the linearization of syntactic constituents, and in particular the question of which factors influence the order of words and phrases. In this area a divergence has been observed between English and Japanese, as the length of phrases seems to influence linearization differently between the two languages. For Japanese it has been found that, with regard to the order of verbal arguments, speakers prefer long phrases before shorter ones (e.g. [Yamashita and Chang, 2001](#); [Yamashita, 2002](#)), while English is well-known to exhibit the

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reverse tendency (e.g. Hawkins, 1994; Arnold et al., 2000; Wasow, 2002). One explanation for this divergence is provided by distance minimization accounts which claim that speakers prefer to minimize the distance between verbs and their arguments, as shorter distances are correlated with processing ease (Hawkins, 1994, 2004; Gibson, 1998). These theories make divergent predictions for head-initial languages, e.g. English, as opposed to head-final languages, e.g. Japanese: In Japanese, the order of long-before-short leads to a short distance between the verb and its arguments, while the reverse is true of English (see Hawkins, 1994, 2004).¹ However, this explanation has met with skepticism in language production research, as its general logic is based on constraints of working memory during sentence comprehension, and it is not clear how distance minimization as a mechanism can be implemented into incremental production models (Chang, 2009:375).

In language production research, the order of words and phrases is thought to be contingent on their respective accessibility. Those elements which are more easily accessible, i.e. which can be more easily retrieved from the lexicon and/or are formulated faster, occur early in syntagmatic strings (e.g. Bock, 1982). Since short constituents are more accessible in this sense, they occur in early positions. This explanation can of course only explain the English, but not the Japanese bias. Therefore, adjustments to the general idea of accessibility have been proposed to account for the above mentioned language-specific tendencies. Yamashita and Chang (2001) argue that Japanese speakers focus more strongly on the rich semantics of long phrases during production and therefore produce long phrases early. In contrast, to English speakers form-related properties are assumed to be more relevant, which is why they place short phrases in early positions. This explanation points to different processes in “accessing form vs. meaning in incremental processing” (Jaeger and Norcliffe, 2009:876) of the two languages, challenging the idea of universal accessibility effects during production (see also Tanaka et al., 2011a:124–125). However, it is not clear what mechanism is responsible for this difference or how it is to be implemented in current models of language production. While Yamashita and Chang’s (2001) explanation implies fundamentally different influences underlying the linearization of constituents between the two languages, it should be noted that these potential differences are far from exhaustively explored. One reason for this is that most studies investigate linearization in only one of the two languages, and thus do not provide a true cross-linguistic comparison of comparable syntactic phenomena. In this paper we contribute to the further cross-linguistic exploration of influences on linearization between English and Japanese by investigating and comparing the factors that underlie the internal order of English and Japanese Noun Phrase conjuncts in spoken language. The relevant syntactic constructions are exemplified in (3) (3a and 3b are translation equivalents, examples taken from Tanaka et al., 2011b:321).

- (3) a. (the) boat and (the) fisherman
b. booto to ryooshi

NP conjuncts in English and Japanese are particularly relevant syntactic constructions for the exploration of ordering influences for several reasons. First of all, with an NP conjunct both constituents of the conjunct belong to the same argument of the verb. Therefore, this construction falls outside the scope of distance minimization accounts (see above), which solely predict the positioning of arguments with regard to the verb. Hence, in NP conjuncts it is possible to investigate whether the putative differences between the two languages in accessing meaning versus form can be found in a construction that is not influenced by preferences of ordering verbal arguments. Second, NP conjuncts constitute a syntactic construction which is immediately relevant for distinguishing between competing architectures of language

¹ These predictions can be exemplified by the phenomenon of Heavy NP shift in English, where the order of verbal arguments (marked by square brackets in the examples below) is variable, see the following alternative orderings are possible (examples from Hawkins, 2004:26):

- (1) a. Mary gave [to Bill] [the book she had been searching for since last Christmas]
b. Mary gave [the book she had been searching for since last Christmas] [to Bill]

Hawkins’ Minimize Domain account predicts the first sentence (the short-before-long order) to be preferred over the second, since fewer words need to be processed until the three immediate constituents of the verb phrase are recognized (Hawkins calls this the combinatorial domain). For Japanese the theory predicts long-before short to be preferred in constructions with two verbal arguments. This can be exemplified by the two possible orderings in a ditransitive construction (from Yamashita and Chang, 2001:B52):

- (2) a. Masako-wa [shinbun-de shōkai-sarete-ita otoko-ni] [okashi-o] todoketa.
Masako-TOP newspaper-INST introduced man-DAT cake-ACC delivered
'Masako delivered to the man who was introduced in the newspaper the cake.'
b. Masako-wa [okashi-o] [shinbun-de shōkai-sarete-ita otoko-ni] todoketa.
Masako-TOP man-DAT newspaper-INST introduced cake-ACC delivered
'Masako delivered the cake to the man who was introduced in the newspaper.'

With example (2a) (long-before-short) the combinatorial domain is shorter than in (2b), due to a minimized distance between the postpositions of the two phrases and the verb in final position. For more detailed information, see Hawkins (1994, 2004).

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