Toward a Fuller Symbolic View of Grammar: The Theoretical Orientation of Cognitive Phonology and Its Application to Japanese Prosody

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This presentation attempts to apply essential notions of cognitive grammar to the description of phonological phenomena. After clarifying why phonological descriptions in terms of cognitive linguistics are needed, I will show how the traditional basic concepts of phonology such as phonemes and allophonic variation can be represented using cognitive-grammar notions. With this background, paying particular attention to the relationship between phonology and phonetics (i.e., phonologization), I discuss the characteristics of Japanese vowel coalescence and Japanese VOT as a case study in cognitive phonology analysis.

When Ronald Langacker launched cognitive grammar as a new paradigm of linguistic theory in the 1980's, the phonological description, including the relationship between phonetics and phonology, was definitely in its descriptive range and progress was expected, as was that of semantic description, including the relationship between conceptualization and semantics. The following diagram may be a good illustration of how phonology fits into the overall theory.

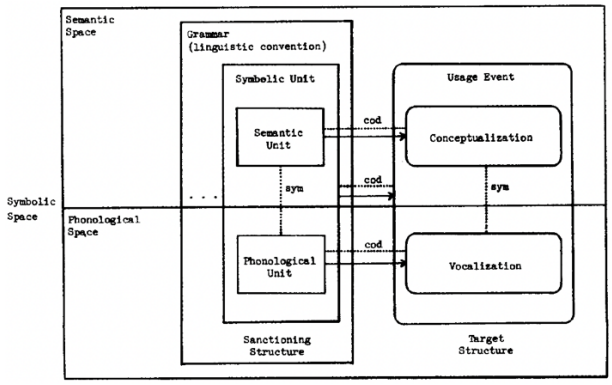

Figure 1
(Langacker 1987:77)

As shown in the diagram, cognitive grammar is based on the symbolic view of grammar, in which the relation of phonological units to the vocalization (i.e., phonetics) is assumed to be parallel to that of semantic units to conceptualization. Langacker's (1987) most significant proposal on phonology was that phonological phenomena can be described utilizing the same theoretical notions (general cognitive abilities) as semantic phenomena when the former is regarded, like the latter, as a conceptual organization schematized/abstracted from actual usage events (i.e., phonetic experience). Lakoff (1993) shares Langacker's views on phonology as shown in the following quotation: "cognitive phonology is to be seen as an integral part of cognitive grammar. As such, it assumes that phonology, like the rest of language, makes use of general cognitive mechanisms…" (p. 118, my emphasis).

More than 30 years after its inception, cognitive linguistics has successfully grown into a major linguistic theory with many related conferences and journals. However, as many researchers have noticed, its success primarily resulted from the vigorous linguistic analyses of the relationship between conceptualization and semantic units, that is, the upper part of Figure 1,

including construction-grammar analyses; however this is not due to the inclusion of phonological analyses in the bottom part of Figure 1–there is little accumulated research on the relationship between vocalization and phonological units. Bybee's series of studies (e.g., Bybee 2001) might be considered an exception. However, her description does not actively incorporate the general cognitive mechanisms that have been employed in cognitive semantics into an explanation of phonological phenomena, placing more emphasis on the frequency effect on phonological structures. I believe that more research is needed on the bottom part of Figure 1 to prove our thesis from the early days that general cognitive abilities shape not only meaning but also the language as a whole. This presentation is a small step toward this goal to activate the research in cognitive phonology.

I focus on how phonologization (the bottom part of Figure 1) can be explained in a parallel way to semanticization/grammaticalization (the upper part of Figure 1; cf. Hyman 2013) and discuss the advantages of this phonological analysis over other theories, employing the characteristics of Japanese vowel coalescence and Japanese VOT as a case study. First, regarding the phenomenon of vowel coalescence in Japanese, previous studies that relied on a purely phonological explanation (e.g., Kubozono 1999, Ono 2004) not only could not provide the motivation for the phenomenon together with counterexamples, but they also failed to adequately address dialectal differences. While these problems could be solved if sufficient attention is paid to the phonetically subtle differences (e.g. Sugito 1982), I suggest that the cognitive-grammar approach, which assumes that phonology designates the prominent elements of the usage event, can straightforwardly capture these differences as a profile/construal phenomenon. Second, following Takada (2011) and Sato (1958), the modern Japanese word-initial plosives (/{/b/, /p/}, {/d/, /t/}, and {/g/,/k/}) are gradually shifting from the voiced/voiceless sound opposition to that of pitch. While the shift that includes the transitory stage is also considered a difficult issue to deal with within traditional phonology, the cognitive-grammar approach can explain this subtle shift in a parallel manner as the ubiquitous semantic extension in which the latent elements in usage events are gradually foregrounded, while the prominent elements are bleached.

References

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The English verbal prefix *out-* and the relationship between its spatial and differential types

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The synchrony and diachrony of West Germanic preverbs is a traditional topic in English linguistics. Preverbs appear before a verb and form a close semantic unit with it. Structurally, they are XP, X^0, or prefix (where X= P, Adv, A or N); diachronically, the following grammaticalization cline is conceivable: phrasal XP > particle X(P) > particle X > incorporated particle X > prefix (Los et al. 2012: 93). Inseparable complex verbs (ICVs), the target of this paper, are said to have emerged from two separate evolutions (ibid.: Ch.7); early Germanic prefixes evolved from erstwhile predicative particles, while newer prefixes are derived from separable complex verbs (SCVs) with incorporated adpositions.

The purpose of this paper is to provide new evidence for the hypothesis that the new ICV system represents the final stage of the grammaticalization cline. This hypothesis naturally leads to the following prediction:

> If the structural development [from SCVs to ICVs (AN)] represents a grammaticalization cline, we would expect it to be accompanied by a corresponding loss of lexical meaning and the development of more abstract, metaphorical meanings (semantic bleaching; e.g. Hopper and Traugott 2003; Booij 2002a: 218; van der Auwera 1999:132). (Los et al. 2012: 192)

Los et al. argue that this prediction is supported by the ICVs with *over-* 'over', *door-* 'through' and *om-* 'around' in Dutch. Thus, unlike the separable preverb in (1a), the prefixal preverb in (1b) instantiates a holistic multidirectional path; moreover, it is quantificational in (1c).

(1) a. SCV: *de brief óver-lezen* (lit. the letter over-read) 'to read over/through the letter'
b. ICV: *de situatie over-zíen* (lit. the situation over-see) 'to survey the situation'
c. ICV: *Jan over-spant de boog* (lit. J over-stretches the bow) 'to overstretch the bow'

This argument is not conclusive because, as the authors correctly note, the ICV meanings in (1b, c) are also observed with SCVs (Lieber 2004 for the same point on the English prefix *over-*). To prove the above prediction, we need a case where ICVs are unambiguously associated with SCVs while at the same time having what Booij (2010) calls a construction-specific meaning. In our view, such a case is found with the English ICV prefix *out-* and the relationship between its spatial and differential types (Nagano 2011, Kotowski 2023).

In OE and ME, *ut* 'out' formed SCVs. While Los et al. (2012: Ch.6) highlights the Figure-licensing type (e.g., *And seo helle Þone deofel <u>ut</u> a-draf* 'And Hell drove out the devil'), there were also the Ground-licensing type in which the P + motion verb composite directly took a

source argument:

(2) ?a1350 *Þe harnes **out sprange** þe harnepan.* (OED online)
'the brains went out of the brainpan springing; the brains sprang out of the brainpan.'

This "accusative unaccusative" SCV (Myler 2013) is an inheritance of the preposition incorporation in the OE, and from it, the path-denoting ICV such as (3) naturally emerged:

(3) 1621 *A..second Brother liued, whose ill **out-sprung**..the elder*. (OED online)

But in ModE, the same prefix also began to produce accusative transitive ICVs, now known as the differential eventive usage (Kurafuji 2013, Morzycki 2015):

(4) PE *Mary **outran** Fred by three miles.* ---F--------M--- → distance scale
⌊3 miles⌋

In (4), the ICV denotes the emergence of a degree gap between the two scalar points represented by its subject ("Mary") and object ("Fred"). Crucially, this usage is absent in the free-standing *out*; i.e., it is a construction-specific meaning of the *out*-ICV.

There is an independent empirical motivation for considering the relationship between the path-denoting SCV/ICV and the differential ICV as a part of the grammaticalization cline. The extension of ablative markers into comparative standard markers (A>SM) is widely attested in typologically unrelated languages, including OE, Latin, and Japanese (Heine & Kuteva 2002). Consider the multifunctionality of *yori* in Japanese (Shibasaki 2023). In the present case, the path-incorporating SCV and ICV constitute a licit input to this change because they contain the preposition *out*, an ablative marker, within.

Underlying the A> SM grammaticalization is the semantic bleaching of the spatial path. The source-specified path in (2, 3) has been semantically extended to the lower-bound degree scale (Kennedy & McNally 2005). This explains why *Fred* can mark the lower scalar point in (4) and why the construction semantics has changed from [**EXIT (THE SOURCE)**] to [**EXCEED (THE STANDARD)**]. Other effects of grammaticalization include morphologization (Joseph 2006), the expansion of base-verb selection, and the emergence of functional projections.

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Subject and Object Gaps in Young Learners' L2 English

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Abundant evidence supports the subject-gap advantage in the acquisition and processing/comprehension of relative clauses across languages and among different populations. In English, subject(-gap) relative clauses (SRCs), such as (1), are generally acquired earlier by children (e.g., Brown, 1971; Diessel & Tomasello, 2000) and processed faster and with less effort by adult native speakers (e.g., Staub, 2010; Witzel & Witzel, 2021) than object(-gap) relative clauses (ORCs), such as (2).

(1) the girl that (gap) is chasing the boy
(2) the boy that the girl is chasing (gap)

The SRC advantage is also reported in Japanese learners of English. Adult EFL learners start to produce SRCs earlier and more frequently than ORCs in natural conversation (Saunders, 1980) and process SRCs with less effort (e.g., Ueno & Garnsey, 2008; Roland et al., 2019).

Less is known about L1-Japanese child learners of English who have never been explicitly instructed about relative clauses or other NP-modifier constructions. This is partly because postnominal modifiers, in general, take young Japanese learners some time to learn naturally, as they progress from the stage of using prenominal modifiers such as adjectives and quantifiers to the stage of postnominal phrasal modifiers such as prepositional and participle phrases, and only then to postnominal clausal modifiers (Suzuki & Usukura, 2018; H. Tanaka, 2022). Opportunities for observing the natural development of relative clauses in L2 English are limited, as one would have to wait a considerable time after a child's initial exposure to the L2 to start a longitudinal study, which would then have to last at least several months from that point. One such example is a study by Yamaguchi and Kawaguchi (2016), who recorded a female child's naturalistic conversations from age 5;8 (four months after arriving and starting local primary school in Australia) every other month for two years. Just one instance of a full NP SRC was reported at her eighth month after arrival; two months later, her first ORC, together with more SRC utterances, were recorded.

In this presentation, I will discuss an ongoing study series in which we approach the SRC advantage from two perspectives (Hirose & H. Tanaka, in prep; H. Tanaka & Hirose, in prep a & b). First, we are conducting a longitudinal study of a male child who was first

exposed to an English-speaking environment at the age of 7;10, by which time his Japanese acquisition had been completed. We have been collecting data for 4.5 years as frequently as bi-weekly and for 45–60 minutes each time, providing a larger number of utterances for analysis than previous studies.[1] In addition to full RCs, we document other types of NP modification, including free relative clauses and contact clauses, to assess the child's repertoire of alternatives to full SRCs and ORCs. The first full SRC utterance emerged earlier than the first full ORC utterance, and the total number of SRCs to date is larger than that of ORCs, but we also have found postnominal modifications involving object gaps in the form of free relative clauses that occurred much earlier than either full ORCs or full SRCs. The developmental path from simple prenominal modifications to complex postnominal clausal modifications will be discussed in relation to what has already been established in the literature and what has not.

Our second approach employs controlled elicitation experiments, adopted from N. Tanaka et al. (2019), targeting specifically full SRC and ORC constructions. The preliminary results from ten young Japanese learners of English (age 7–12) reveal that the participants were more successful in describing pictures with SRCs than with ORCs. However, the pictures intended to elicit ORCs were often successfully described with alternative constructions, mostly passives involving a SRC construction.

The implication is that the apparent subject-gap advantage in child L2 acquisition of English may partially be explained by the variety of alternative structures that are somehow more accessible to the learners. We will discuss this implication in light of previous RC research on other populations (adult L2 learners and L1 learners of English) from both acquisition and processing views.

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[1] The annotated corpus will be available as UH-UT Child Second Language Acquisition Database: A collection of Longitudinal case studies (UH-UT CSLAD)
https://www.doi.org/10.17605/OSF.IO/3RZ47