

# Rhythmic and interface categories in prosody

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A key result of studies in prosodic phonology since the 1970's has been the finding that in language after language phonological processes are localized in the same small set of phonological domains, and do not appear to make use of the vast set of potential domains that are in principle made available by grammatical (syntactic and morphological) structure. *Prosodic Hierarchy Theory* (Selkirk 1978, Nespor and Vogel 1983, etc.) holds that speech is organized into a set of genuinely phonological domains that form a hierarchy of containment, with each non-terminal constituent made up of a sequence of smaller constituents at the next level down. The guiding idea is that prosodic levels cannot be *skipped* or *repeated* (i.e., must be *strictly layered*, Selkirk 1984).

Although this research program has been vastly successful in advancing our understanding of the relation between syntactic/morphological structure and phonological form, many questions, both of detail and of principle, have remained open. Detailed empirical investigations as well as advances in theory have shown that *strict layering* does not always hold, but rather constitutes a prosodic ideal. Level skipping has been assigned a proper place in the weak layering model of Ito and Mester 1992(2003) (and its optimality-theoretic interpretation by Selkirk 1996). Level repetition is instantiated in the recursive intonational and phonological phrasing demonstrated by Ladd 1986, 1996, Gussenhoven 2005, and others.

Given these developments in theory and analysis, it is perhaps time to take stock of the overall model and ask what has been established and what still remains open. First, there are intrinsic—and not just size-related—differences among parts of the hierarchy. Broadly speaking, the word-internal units (syllable, foot, and perhaps mora) are intrinsically defined in terms of sonority-related phonetic factors and speech rhythm, whereas the parsing of higher-level units (prosodic word, phonological phrase, intonational phrase, etc.) is regulated by constraints, alignment-based and other, on the correspondence between syntactic/morphological and phonological constituents. We refer here to the former (smaller prosodic units) as *rhythmic categories*, and the latter (larger prosodic units) as *interface categories*.

The general form of *rhythmic categories* (word-internal prosody), with syllables grouped into rhythmic feet which are in turn assembled into a prosodic word, is relatively uncontroversial, apart from questions of detail (such as the status of the mora as a genuine prosodic constituent vs. a property of syllables, etc.). The picture is less clear for the *interface categories*, even as to the exact number and/or content of the levels of the hierarchy. A large number of different prosodic categories have been proposed in order to provide enough separate domains for different processes, including *utterance*, *intonational phrase*, *phonological phrase*, *major phrase*, *intermediate phrase*, *minor phrase*, *accentual phrase*, *tone group*, *clitic group*, *prosodic word*, *minor word*. The totality of these categories has never been instantiated in a single language, however, and their crosslinguistic identification has remained a largely unsolved problem.

Even within a single language, the doctrine of strict layering has led to a considerable multiplication of categories. Whenever a process is found to operate in a slightly different domain than some other process, the model required setting up two separate categories. Once repetition of levels (adjunction structures) becomes an option, however, "constituent domain" no longer equals "category", raising the suspicion that perhaps some of the categories proposed in the earlier prosodic

literature are in reality only larger adjunction structures built on a more basic interface category. Loosening the doctrine of strict layering allows us to strengthen the theory on the category side, and limit the interface categories to a small and universally well-defined set, much like the broadly agreed set for rhythmic categories.

In this talk, we review the evidence for the two central interface categories proposed for Japanese, *major phrase* and *minor phrase* (McCawley 1968, Selkirk and Tateishi 1988, Kubozono 1988, and the roughly equivalent intermediate phrase and accentual phrase of Pierrehumbert and Beckman 1988). The distinction was deemed necessary because the major phrase is the domain of downstep, whereas the minor phrase is the domain of initial rise and accent (hence the alternative name 'accentual phrase'). We will argue that there is no need to postulate two interface categories, and that the evidence favors a model with a single category '*phonological phrase*', with the option of adjunction.

Besides Japanese, we will discuss some other prosodic systems, including Cup'ik, English, German, and Korean. In a larger vein, we hypothesize that there are only three universal interface categories: *intonational phrase*, *phonological phrase*, and *prosodic word*. Additional structure is imposed on the string being parsed through adjunction.

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