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Generative Phonology VS Natural Generative Phonology

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/MA Course in Phonology

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The simplest explanation of how Natural Phonology differs from Generative Phonology is to examine what generative linguistic theory is about. It is about grammaticality. More specifically, it is a theory of language that takes intuitions of grammaticality as its primary focus. A grammar in a generative framework is a device that defines linguistic well-formedness. **Natural Phonology does not focus so much on well-formedness as on linguistic production and perception**. Intuitions of grammaticality are not necessarily what the theory tries to explain. **Phonology explains something else: the discrepancy between what speakers intend to pronounce and what they end up pronouncing, or the discrepancy between the sounds that the listener thinks the speaker produced and the actual speech signal produced.**

Natural Phonology's emphasis on the fundamental nature of linguistic performance can have an impact on how one thinks of phonological derivations. In generative theory, a derivation has a well-formed input and a derived output produced by linguistic operations on the input. For example, English does not have nasal vowel phonemes, so generative derivations do not normally posit nasal vowels as the input to a derivation. Nasal vowels appear before nasal consonants in words such as camp and cone. This can be explained in terms of a phonological rule that converts a [-nasal] feature to [+nasal] in the vowels that precede the nasal

consonant. The input is well-formed, and that explains why English speakers perceive nasal vowels in foreign words as somehow "foreign" to their own intuition of what is pronounceable, despite the fact that they pronounce nasal vowels all over the place.

Natural Phonology has the same concept of phonological derivation, and its input forms can also be "well-formed" from a native speaker's perspective. But here is a difference: the input forms to a phonological derivation in Natural Phonology do not have to be well-formed. **Since a speaker can try to pronounce any phonetic target–any string of phonetic segments imaginable–any phonetic string can be the input to a phonological derivation in Natural Phonology.** Intuitions of well-formedness are side-effects of constraints on articulation, i.e. Processes, not a fundamental property of the input of a phonological derivation. When English speakers try to pronounce nasal vowels while learning French or Polish, they must learn to suppress a phonological Process that governs their own articulation: the denasalization Process. Hence, the input (a phonetic target) can be intuitively ill-formed, but it is the fact that well-coordinated English.

Natural Generative Phonology

In the 1970s, a strong reaction took place against SPE-type analyses on the part of a number of linguists grouped under a variety of banners. One famous example is

that of NGP, a movement spearheaded by Hooper and Vennemann which spawned a great deaL of descriptive and theoretical work during the 1970s and early 1980s. The most complete exposition of NGP is Hooper's 1976 book, An Introduction to Natural Generative Phonology (INGP hereafter). A detailed application of basic principles of NGP to a well-studied language is Tranel's Concreteness in Generative Phonology: Evidence from French (1981). Natural generative phonology starts from the assumption that abstractness should be banned from the grammar. Rules involving unpronounceable elements are not acceptable since 'the hypothesis may not be tested' (INGP p 13). Underlying forms must bear a much more direct relationship to surface phonetic representations. There are, however, several positions which have been advocated conforming with this need for more concrete representations (sometimes called the STRONG NATURALNESS CONDITION): 1. One solution is to legislate that the underlying representation of a morpheme must be one of the surface allomorphs. This, for instance, would allow /s/ or /z/ or /iz/ as possible underliers of the plural allomorphs. It would also force the analyst to choose between /divajn/ or /divin/ as underlying forms of the morpheme divine, but would rule out /divi:n/ which is not a possible realization of this morpheme. By definition, 'fictitious' segments such as Halle and Mohanan's high back unrounded /i:/ (profound) that speakers of English cannot pronounce would be excluded. 2. A more radical alternative solution advocated by

Vennemann (1974) dispenses with underlying forms altogether. The lexicon for Vennemann is made up of complete words, not morphemes, in their surface phonetic forms (although most examples h~ gives are in phonemic representations). Phonological rules function as redundancy statements. To quote Vennemann (1974: 359) on the plural suffix in English: What is the 'underlying representation', /s/, /z/ or /iz/? What are the rules? In the system I am discussing, the situation is this: Since plural nouns are words, and words are in the lexicon, and are there fully specified, plural nouns are there fully specified. Thus, /s/, /z/, and /iz/ all occur in the lexicon, e.g.

in cops /khaps/, cobs /kabz/, and arches /arCiz/. The rule is: The plural suffix is /s/ if the singular ends in a voiceless nonsibilant, the plural suffix is /z/ if the singular ends in a voiced non-sibilant; the plural suffix is /iz/ after a sibilant. Formulated in this way (the traditional formulation to be sure), the rule is always 'true on the surface' and involves no ordering problems. 135 3. A third position advocated by Hooper (1975, 1976) is less concrete than Vennemann. She argues that the conditions on abstractness should be placed on rules rather than representations. More specifically, she thinks that 'all rules should express transparent surface generalizations, generalizations that are true for all surface forms and that, furthermore, express the relation between surface forms in the most direct manner possible' (INGP p 13) This principle is called the TRUE GENERALIZATION

CONDITION (TGC) and a consequence of it is that 'No phonological features appear in the lexical representations of a morpheme except those that occur in some surface representation of that morpheme' (p 20). She does, however, assume that underlying forms are never directly accessible, and archisegmental representations are acceptable since they do not violate the TGC. An archisegmental representation stands in a subset relation to the surface realizations and does not contain features not present on the surface. Whichever of these positions is adopted, it is quite clear that other assumptions have to be made about the organization of the phonological component if some version of the strong naturalness condition is to be imposed. All versions of NGP share the following two features: I. Many rules that are presented as phonological (e.g. the VS in English) in the SPE paradigm are, on the contrary, argued to be morpho(phono)logical in NGP and, in some cases, not to be rules at all. The phonological component should be split into blocks of different rule-types and divisions along traditional lines such as that between morphophonemic and allophonic rules make a comeback. 2. The only order which is allowed is intrinsic ordering (all rules apply in random sequential order - that is, a rule can apply whenever its structural description is met) unless the ordering can be predicted on universal grounds. This is called the NO ORDERING CONDITION (NOC). Vennemann (1974: 372) puts this in rather provocative terms: 'Writing THE

DERIVATIONAL ISSUE grammars with ordered rules is a systematic way of lying about the language.

Rule types in NGP

As mentioned before, NGP assumes that the rule system does not form a monolithic block but rather that rules should be divided into different types. The rule blocks adopted in INGP by Hooper (1976) are given below going from the lexicon to phonetic forms: (r) VIA RULES A via rule is a type of lexical rule of the form aj t---ji relating for instance divine and divinity. The forms divine and divinity are entered in their full form in the lexicon and assumed to be linked by the via rule above. Other rules of the same type would relate serene-serenity (ij H e), sign-signify (aj H ig), etc. These rules are assumed to vary from speaker to speaker. It is quite possible that some speakers of English do not have any of the above.