

Phrase Structure without Head Features

Jacques Lamarche, UWO

In this paper, I propose a phrase structure system that distinguishes nouns and adjectives without relying on value-specific head features such as $(\pm)N$ or $(\pm)A$. Nominal and adjectival positions in the sentence are not identified by category features on heads: rather, representations at the level of the constituent, made up of content that is independently required, are assumed to determine whether a substantive term at the linear level is in a nominal or adjectival position.

The proposed account eschews the commonly held assumption of X-bar that all phrases have a bottom-up architecture: here, substantive terms, lexically uncategorized (Marantz 1997, Borer 2005, and others), receive their values of noun or adjective from the top, that is, from arrangements of input content at the level of the constituent. Specifically, when two syntactic objects (SO) are combined, both SOs appear at the level of the constituent in one of the two arrangements in (1), where: (i) one SO is assigned a value (noun or adjective) and (ii) the SO that does not receive a value in the arrangement is defined as the head of the resulting constituent.

(1) a. $\alpha\beta$ b. $\alpha\beta\alpha$ The nominal value is determined by the *indexation* arrangement (1a): the SO that appears as an index (β) on a SO is assigned a nominal value. The adjectival value is determined by the *inclusion* arrangement (1b): the SO

that is included (β) in copies of another SO is assigned an adjectival value. Under (ii), α is the head of the resulting constituents in (1a) and (1b), so that the value of the constituent is the same as the value of the head. If the constituent's head is uncategorized, e.g. it is a substantive term, then the head inherits its value from the constituent it is heading. An uncategorized term can thus be assigned a value from an arrangement directly, the case of β in (1a) and (1b), or indirectly as the head of the constituent under (ii), inheriting the value assigned to the constituent in context.

Unlike substantives terms, functional items are categorized lexically. Determiners, represented [D_{index}], are analyzed as triggers for indexation (1a): their function is to turn uncategorized objects into NPs. The phrase *a car* is thus analyzed as (2a): *car* [*car*], an index in *a car* [D_{car}], is nominal by (1a); under (ii), the determiner is the head, so that the constituent is a

(2) a. D_{car} b. D_{cbc} DP. The phrase *a black car*, with an adjective, is analyzed as (2b) (only the first letter of substantive terms appears in the structure). As with (2a), the constituent *black car* [*cbc*]—indexed on D—is nominal by (1a), and *a black car* [D_{cbc}] is a DP (under (ii), the determiner is the head). The included SO *black* [*b*] in *black car* [*cbc*] is an adjectival object by (1b). And *car* [*c*], although not in a nominal arrangement, inherits a nominal value since, under (ii), it is the head of a constituent (*black car* [*cbc*]) that is nominal by (1a).

Under standard phrase structure—Phrase Structure Rules (Chomsky 1957, 65), X-bar (Chomsky 1970; Jackendoff, 1977) or Bare Phrase Structure (Chomsky 1995, 2013)—head features are needed to distinguish nominal and adjectival heads, and to account for the endocentric properties of phrases. The proposed analysis captures these properties of constituent structure using binary arrangements of independently required content. In fact, only a reference to the form of terms is needed to establish that *black* and *car* are, respectively, in the adjectival and nominal positions in (2b). This is a clear articulation of Chomsky's (1957, 1965) autonomy hypothesis that syntax is autonomous with respect to meaning. Under this view, then, no lexical adjustment or feature change is required to account for the fact that *black*, adjectival in (2b) [D_{cbc}], is a head noun in *a shiny black*, i.e. [D_{bsb}]: the change of value follows from the design of a structural component of grammar that only manipulates the form of substantive terms.

Under standard phrase structure—Phrase Structure Rules (Chomsky 1957, 65), X-bar (Chomsky 1970; Jackendoff, 1977) or Bare Phrase Structure (Chomsky 1995, 2013)—head features are needed to distinguish nominal and adjectival heads, and to account for the endocentric properties of phrases. The proposed analysis captures these properties of constituent structure using binary arrangements of independently required content. In fact, only a reference to the form of terms is needed to establish that *black* and *car* are, respectively, in the adjectival and nominal positions in (2b). This is a clear articulation of Chomsky's (1957, 1965) autonomy hypothesis that syntax is autonomous with respect to meaning. Under this view, then, no lexical adjustment or feature change is required to account for the fact that *black*, adjectival in (2b) [D_{cbc}], is a head noun in *a shiny black*, i.e. [D_{bsb}]: the change of value follows from the design of a structural component of grammar that only manipulates the form of substantive terms.

Reference

- Borer, Hagit. 2005. *Structuring Sense*. Oxford; New York : Oxford University Press,
- Chomsky, Noam. 1957. *Syntactic Structures*. The Hague: Mouton. 2nd ed. (2002).
- Chomsky, Noam. 1965. *Aspects of the Theory of Syntax*. Cambridge, MA: MIT Press.
- Chomsky, Noam. 1970. Remarks on nominalization. In *Readings in English Transformational Grammar*, ed. Roderick A. Jacobs and Peter S. Rosenbaum, 184–221. Waltham, MA: Ginn.
- Chomsky, N. 1995. “Bare phrase structure,” in Campos, H. and P. Kempchinsky (eds), *Evolution and Revolution in Linguistic Theory: Essays in Honor of Carlos Otero*. 51–109. Washington D.C.: Georgetown University Press.
- Chomsky, Noam. 2013. “Problems of Projection.” *Lingua* 130:33–49.
- Jackendoff, Ray. 1977. *X'-syntax*. Cambridge, MA: MIT Press.
- Marantz, Alec. 1997. “No Escape from Syntax: Don’t Try Morphological Analysis in the Privacy of your Own Lexicon.” In A. Dimitriadis, & L. Siegel, (Eds.), *University of Pennsylvania Working Papers in Linguistics*, 4.2 (pp. 201-225). Philadelphia: University of Pennsylvania Working Papers in Linguistics.