In this paper, we will consider the place of chains within a minimalist approach to grammar. What are chains? How are they formed? How are they interpreted at the interfaces? What kinds of empirical phenomena can be accounted for by assuming chains to be bona fide syntactic objects of some sort?

Chomsky (1995, 2000, 2001) defines a chain as a sequence of occurrences of a single syntactic object $\alpha$, where an ‘occurrence’ is a sister of $\alpha$ (Chomsky 2000) or a mother of $\alpha$ (Chomsky 2001). Needless to say, this definition implies that a single syntactic object can, in some sense, exist in more than one configuration (have more than one sister/mother) simultaneously, but how do “multiple occurrences a single $\alpha$” arise in a phrase marker? Obviously (1a) and (1b) must be distinguished in that the former contains one chain whereas the latter contains two. Chomsky (1995, p. 227) argues “the syntactic objects formed by distinct applications of Select to LI must be distinguished; two occurrences of the pronoun he, for example, may have completely different properties at LF.” Nearly everyone assumes that there is only one LI he in the lexicon (i.e., the lexicon is a set of lexical types, not tokens). Thus when an LI is selected multiple times in a derivation, those multiple selections are treated by the system as distinct tokens (not occurrences of a single token). But why is this so?

Chomsky employs a simple coding device; namely, he assigns indices to LI selected in a Numeration, (2). Thus (1) looks like (3), where these indices are crucial part of the representation (note that they are not “referential” indices, but rather code only formal identity). Consequently, chains can only arise by way of movement, or internal merge, which creates a “copy” of a particular token. As Chomsky explicitly acknowledges, (4), this kind of resource is a blatant departure from the spirit of minimalism than one based on formal indices or other similar devices devised to code tokens.

First of all, it should be noted that numerations were not added to code identity; they code distinctness (distinct tokens of a lexical type). Identity can be assumed to come for free; surely the null hypothesis is that, if not somehow marked for distinctness, the same LI selected twice in a derivation gives rise to two occurrences of the same LI in that derivation. In this paper, we first argue that this violation of inclusiveness (numerations/indexations) cannot be justified as a method for the identification of chains, or establishing an ontological dichotomy between types (in the lexicon) vs. tokens (in the Numeration/Narrow Syntax). Chains can be appropriately indentified without resort to any special devices not already assumed independently. In particular, (1a) and (1b) can be distinguished in terms of some notion of locality. For example, if chains are identified (perhaps even “cashed out” to the interfaces) phase-by-phase, there will be two chains in (1b) simply because the relevant occurrences of he stretch across two phases (we assume that so called long-distance movement, which is always A-bar, always targets the edge of phase, which enables the chain to extend its reach across a phase). The exact notion of locality relevant for chain identification, how command and minimality fit into the picture, and whether the computation may employ other devices, such as Case or morphological markings of various sorts, to distinguish occurrences (Uriagereka 1997) are empirical questions, which will be taken up, at least partially, in the paper. But even setting these issues aside, the general approach seems not only sound, but much more within the spirit of minimalism than one based on formal indices or other similar devices devised to code tokens.

It should be clear that whereas Chomsky’s approach entails that chains can be derived only by movement, the current approach in principle allows for two occurrences entering the derivation by external merge to be identified as a chain, as long as they are close enough to one another (and other relevant conditions hold). In the remainder of the paper, we propose that this is exactly how obligatory movement, which is always A-bar, always targets the edge of phase, which enables the chain to extend its reach across a phase. The exact notion of locality relevant for chain identification, how command and minimality fit into the picture, and whether the computation may employ other devices, such as Case or morphological markings of various sorts, to distinguish occurrences (Uriagereka 1997) are empirical questions, which will be taken up, at least partially, in the paper. But even setting these issues aside, the general approach seems not only sound, but much more within the spirit of minimalism than one based on formal indices or other similar devices devised to code tokens.
(1) a. [he was arrested he]
    b. [he v [said [that he was arrested he]]]

(2) “In [Chomsky 1995] indices are introduced ... in extending lexical arrays to numerations ... If LAs are extended to numerations Num, a chain can be defined as a sequence of identical α’s—more accurately, a sequence of occurrences of a single α.” (Chomsky 2000, pp. 114-115)

(3) a. [he1 was arrested he1]
    b. [he2 [he2 v [said [that he1 was arrested he1]]]]

(4) “Note that this [=the analysis referred to in (2)] is a departure from the inclusiveness condition, but one that seems indispensable ...” (Chomsky 1995, p. 227)

(5) “The new concept [=numeration]... is added, while another concept is eliminated: chains are determined by identity, with no need for ... some similar device to distinguish chains from repetitions, also violating the Inclusiveness Condition.” (Chomsky 2001, p. 11)

(6) John persuaded Mary to apply for the job.

(7) Who did John criticize before he met?

(8) John T [John [VP Mary [persuaded [TP Mary to [VP Mary v [apply for the job]]]]]]

(9) who did [TP John [VP who [[John v [criticize who]] [CP who before [TP he [VP who [he v [met who]]]]]]]]

References