with a tree containing $D_{\mathrm{himself}}$. Thus, correctly, the First Law allows (i.e.,
does not block) a c-command relation from John ($T_1$ of (27)) to himself
($T_2$ of (27)).

In fact, since there never were two unconnected trees in this derivation,
the First Law, a relationship blocker, is altogether inapplicable here.
Rather, the first application of Merge merges two members of the
numeration ($V_{\mathrm{likes}}$ and $D_{\mathrm{himself}}$), forming \{\{\{V_{\mathrm{likes}}, V_{\mathrm{likes}}, D_{\mathrm{himself}}\}\}\}, after
which the second application of Merge merges yet another element of the
numeration, $D_{\mathrm{John}}$ (not a set/tree) with this object, yielding (33).

\begin{equation}
\{V_{\mathrm{likes}}, D_{\mathrm{John}}, \{V_{\mathrm{likes}}, \{V_{\mathrm{likes}}, D_{\mathrm{himself}}\}\}\}
\end{equation}

Since the First Law is inapplicable, a problem arises: all relations are
now allowed—not only the empirically supported (c-command) relation
from the specifier to the complement, but also, incorrectly, a c-command
relation from the complement to the specifier. That is, in the absence of
any supplementary constraints (relationship blockers), the inapplicability
of the First Law allows the complement to c-command the specifier.

As a possible solution, recall that in the Minimalist Program all con-
catenation/pairing is performed by either Merge or Move. As claimed
above, Merge and Move express syntactic relations, including the “is a”
relation. Now, if the universal rules Merge and Move are the sole rela-
tionship establishers, and in addition apply cyclically, it is altogether nat-
ural, if not necessary, that a relation between $X$ and $Y$ is established
exactly at the derivational point at which $X$ and $Y$ are concatenated. As a
result, complements (and members of complements) never bear any rela-
tion to (e.g., never c-command) specifiers, because (a) when a complement
(e.g., $D_{\mathrm{himself}}$ in (32a)) is transformationally introduced, the specifier does
not yet exist, and (b) an entity $X$ can never bear a relation to a non-
existent entity (derivational preexistence).

Crucially, then, the matter of “timing” is the issue at hand; when a
category $X$ undergoes Merge/Move, it comes into a relation with every-
thing in the tree with which it is concatenated. If a category $Y$ isn’t yet in
the tree, the relation from $X$ to $Y$ does not arise. Hence, the asymmetry of
the relation parallels the asymmetry of the iterative derivational procedure.

Thus, derivational c-command—and perhaps more generally the funda-
mental concept “syntactic relation”—appears to be deducible by appeal
only to
the independently motivated, quite simple, formal properties of two
(perhaps unifiable) universalized transformational rules,
these rules’ universalized, similarly simple, and perhaps explicable mode
of cyclic application, and
the fundamental, perhaps irreducible First Law, derivationally
construed.

In sections 12.4 and 12.5, I propose a derivational approach to two
other apparently fundamental relations, the head-complement and speci-
 fier-head relations.

12.4 The Head-Complement Relation

To begin exploring a derivational approach to the head-complement
relation, consider (34).

(34)

\[
\begin{array}{c}
\text{VP} \\
\text{D} \\
\text{D}_{\text{the}} \\
\text{N}_{\text{man}} \\
\text{V}_{\text{likes}} \\
\text{D}_{a} \\
\text{D}_{\text{that}} \\
\text{N}_{\text{picture}} \\
\text{P}_{\text{of}} \\
\text{D}_{\text{u}}
\end{array}
\]

\(D_a\) is a category consisting of the following seven terms:

(35) a. The \(D_a\) tree/set itself
b. The branching N tree/set
c. The branching P tree/set
d. \(D_{\text{that}}\)
e. \(N_{\text{picture}}\)
f. \(P_{\text{of}}\)
g. \(D_{\text{u}}\)

In the derivation of (34), \(D_a\) was paired with \(V_{\text{likes}}\), \(V_{\text{likes}}\) therefore
c-commands all seven terms of \(D_a\); it enters into relations with
(c-commands) nothing else, since nothing else existed when the merger took place.

In fact, if a syntactic category/tree/term is in part defined as a set of terms (in dominance/precedence relations), then the theory predicts that there should exist two types of relations (using (34) as an illustration):

(36) a. A relation between \( V_{\text{likes}} \) and each of the seven terms of \( D_a \),
    including \( D_a \) itself (c-command), and
    b. A relation between \( V_{\text{likes}} \) and \( D_a \), the seven-term tree itself (the head-complement relation).

\( D_a \) itself is special among the seven terms that constitute \( D_a \), since \( V_{\text{likes}} \) was paired with \( D_a \) itself (i.e., \( V_{\text{likes}} \) and \( D_a \) constituted the structural description of Merge). This completely natural analysis, couched in derivational/transformational terms, captures part of the representational definition of minimal domain proposed in Chomsky 1993. Consider the “enriched” representation of (34) in (37).

(37)

In order to account for (among other things) the head-complement relation, Chomsky (1993) offers the following definitions:

(38) A representational definition of (specifier-head and) head-complement relations
    a. The domain of a head \( \alpha \) = the set of nodes contained in \( \text{Max}(\alpha) \) that are distinct from and do not contain \( \alpha \).
    b. \( \text{Max}(\alpha) \) = the least full category maximal projection dominating \( \alpha \). (In (37), for \( \alpha = V_{\text{likes}} \), \( \text{Max}(\alpha) \) = the 10-member set consisting of all categories in the circle and all categories in the square.)
c. The complement domain of a head $\alpha$ = the subset of the domain reflexively dominated by the complement of the construction. (In (37), the complement domain = the 7 terms in the square that constitute $D_a$.)

d. The minimal complement domain of a head $\alpha$ = all members of the complement domain that are not dominated by a member of the complement domain. (In (37), the minimal complement domain = $D_a$ itself.)

Like its predecessor, the representational definition of government in (3), this representational definition is just that, a definition. Hence, it is not explanatory, and we still lack answers for the questions “Why is the complement domain of a head $\alpha$ as defined in (38c) significant?” “Why is the minimal complement domain of a head $\alpha$ as defined in (38d) significant?” and “Why are these and not any of the infinite number of other logically possible, syntactically definable relations linguistically significant?”

By contrast, the derivational approach reveals the fundamental nature of the head-complement relation. The syntax—more specifically, Merge and Move—establishes syntactic relations by pairing (two) categories. Derivationally, $V_{like}$ in (37) was paired with $D_a$, a seven-term category. Thus, it is entirely natural, if not an inherent property of the concatenative system, that

(39) a. $V_{like}$ bears a relation to $D_a$ itself, namely, the head-complement relation. Thus, the representational (nonexplanatory) definition (38d) is unnecessary.

b. $V_{like}$ bears a relation to each member of $D_a$ (= the complement domain “unminimized” as defined in (38c)) since these members constitute $D_a$. This is the relation that has been called c-command.

c. The converse of (b) does not hold. That is, correctly, it is not the case that each member of $D_a$ bears a relation to $V_{like}$, certain members of $D_a$ underwent pairing prior to the syntactic introduction of $V_{like}$, thereby permanently fixing their derivationally established relations.

12.5 The Specifier-Head Relation

To begin exploring a derivational approach to the specifier-head relation, consider (40).
In (40a), \( I \) (the head) is assumed to check agreement and nominative Case on \([\text{Spec}, \text{IP}]\). In (40b), \( V \) assigns the agent \( \theta \)-role to \([\text{Spec}, \text{VP}]\). The hypothesized generalization is thus that Case and agreement (and external \( \theta \)-role) can be (perhaps “can only be”) assigned from the head to the specifier. However, a problem has long confronted the expression of this relation: the head does not c-command the specifier, given the “first branching node” definition (4). To solve this problem, the notion of m-command was developed (Aoun and Sportiche 1983). Under the derivational analysis proposed here, the specifier c-commands the head, but the head, having been cyclically merged with the complement, is created prior to and in the absence of the specifier. Therefore, the head bears a relation only to the complement and members of the complement; that is, there is no relation from the head to the specifier.

There is at least one possible solution to this apparent problem. As illustrated in (41), when two categories \( A \) and \( B \) are merged, they form a new category whose label is identical to the head of either \( A \) or \( B \) (“… Merge … is asymmetric, projecting one of the objects to which it applies, its head becoming the label of the complex formed”; Chomsky 1994, 11).

(41) \[
\begin{array}{c}
V_{\text{like}} \\
\text{M} \\
\text{He} \\
\text{C}
\end{array}
\]

This reflects a more general and heavily restricted hypothesis concerning the inventory of syntactic entities: “There are … only lexical elements and sets constructed from them” (Chomsky 1994, 27). Therefore, when \([\text{Spec}, \text{VP}]\) is paired with the entire tree/set in (41), as shown in (42), it is paired with (thus, the structural description contains) a category “head-labeled” \( V_{\text{like}} \).

(42) \[
\begin{array}{c}
D_{\text{he}} \\
\text{M} \\
\text{Sp} \\
\text{C}
\end{array}
\]
Thus, the specifier is indeed merged with a (complex) category bearing the morphological features (label) of the head \( V_{\text{like}} \). If this analysis is maintainable, the specifier-head relation can also be captured as a relation established by Merge/Move—a result that would represent a clear advance over nonunified, nonexplanatory theories invoking not only a representational definition of c-command but also a representational definition of m-command (postulated precisely to capture the relation from head to specifier, inexpressible as a representationally defined c-command relation).²

### 12.6 Summary and Discussion

In this chapter, I have proposed a syntactic theory in which arguably (at least some of) the most fundamental syntactic relations posited—including c-command, “is a,” specifier-head, and head-complement—are not formally expressed as unexplained representational definitions. I have proposed instead that such syntactic relations are derivational constructs expressed by the formally simple (“virtually conceptually necessary”; Chomsky 1994) and unified (Kitahara 1993, 1994, 1995, 1997) universalized transformational rules Merge and Move (each motivated on entirely independent grounds in Chomsky 1993).

This theory of syntactic relations, seeking to eliminate central representational definitions such as “government,” “minimal domain,” and “c-command,” is entirely natural and, I think, explanatory. Concatenation operations are by (minimal) hypothesis a necessary part of the syntax; that is, a concatenative procedure (the application of which, by hypothesis, yields representations of sentences) must exist. By contrast, it is not the case that, in the same sense, principles (i.e., filters or well-formedness conditions on representation) must exist.

The question I have investigated here is thus, “Are the simple, independently motivated, virtually conceptually necessary, structure-building operations themselves—specifically, the universalized transformational rules Merge and Move, iteratively applied in conformity with the cycle—sufficient to capture fundamental syntactic relations?” The tentative answer is that they seem to be. If they are, a theory of syntax that expresses this will attain a much more unified, nonredundant, conceptually simple, and correspondingly explanatory account of the most fundamental syntactic construct, “syntactic relation,” known in advance of experience by virtue of the human biological endowment for grammar formation.
Un-Principled Syntax

Notes
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1. Here, for the purposes of illustration, I assume a pre–Pollock 1989 unsplit I. In fact, the unsplit I may not be simply illustrative; as Thráinsson (1994) argues, it may be empirically correct for English. By contrast, Icelandic would display a truly split I, Agrs$^0$ and T$^0$ (see Jonas and Bobaljik 1993; Bobaljik and Jonas 1996; Bobaljik and Thráinsson 1998).

2. For a different analysis of specifier-head relations, see Epstein et al. 1998.

References


