WITH CONSTRUCTIONS
AND
PARASITIC GAP PHENOMENA*

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With constructions have been drawing much attention of theoretical linguists these few years. However, the structure and the internal and/or external behavior of with constructions have not been unanimously agreed upon. In this article, I will show that the structure of with constructions is of the form \([PP|with||S|NP[INFL-ing]|VP V \ldots]]\). This state of affairs is of theoretical interest in several respects to the Government and Binding theory. I will also argue that the descriptive statements for parasitic gap phenomena, especially those of Engdahl 1983 and Chomsky 1982, are insufficient, and propose that the true characterization of parasitic gaps should be undertaken from the viewpoint of the Governing Domain defined in subsequent text.

1. INTRODUCTION. This article is concerned with the following with clauses, which I will call WITH CONSTRUCTIONS.

(1) a. Iran's official Islamic Republic News Agency said that nearly six days of terror at Tehran airport ended with the Arabic-speaking hijackers and the hostages seen leaving the plane with their hands raised. (Mainichi Daily News)

b. With Mrs Foster urging him from the back seat, the man drove fast all the way, and she caught her plane with a few minutes to spare. (Roald Dahl, Kiss Kiss)

The two occurrences of a with clause in 1a and the second one in 1b have a meaning of attendant circumstances, and the first with clause in 1b is equivalent in meaning to an adverbial subordinate clause introduced with as. I will also treat, in a way parallel to with constructions, the following without clauses, which are the negative counterparts of with clauses.

(2) a. Without losing the raw Gulf Coast flavor of his formative

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years, his music has taken on the urban urgency of California blues. (Phillip Walker, *Tough As I Want to Be*)

b. She went into his office one morning and *without* her saying anything he seemed to know what had happened to her. (Sherwood Anderson, *Winesburg, Ohio*)

The *without* clause in 2a corresponds to the first type of *with* clauses, and the one in 2b signifies concession. *With* constructions dealt with in this article have a form *with(out) + X + Y*, where X acts as a subject to the following material Y, except in the second *with* clause in 1b.¹ X may or may not be phonologically realized.²

McCawley 1983 argues that a constituent following *with* is S. I will briefly recapitulate his argumentation. The first criterion consists of the ‘rules’ which are assumed to operate within S: (a) Passive, (b) Raising, (c) *There* Insertion, (d) Extraposition, (e) Gapping, and (f) Quantifier Float, each being exemplified in 3. All the examples below in this section are cited from McCawley 1983.³

(3) a. With politicians being shot at by snipers every day, I don’t see why anyone would go into politics.
   b. With Gonzalez appearing to know everything about economics, we could hardly put up a better candidate.
   c. With there being no possibility of advancement in her present job, Linda is determined to find a new job.
   d. With it obvious that the money is lost, we don’t know what to do.
   e. With Pollini playing the Brahms Second and Arrau the Beethoven Fourth, we’re going to have a great week of concerts.

¹ I cannot go deeply into this issue, namely, the status of *with + NP + to-infinitival*. See Arimura 1983 for details. I cannot deal, in this article, with the following *with* constructions either.

   (i) a. With this bad weather, we had better stay home. (McCawley 1982: 282)
   b. With Schwartz as goalie, our team is sure to lose. (ibid.: 280)

   However, as to (ia), Ishihara’s analysis using *There* Insertion is dubious.

² An anonymous reviewer has suggested that 2a might have a structure *without [NP [s]]*. However, if *without* constructions are to be treated in a way parallel to *with* constructions, a phenomenon like 23 in the text should be accounted for. No doubt, it remains to be seen whether the structure suggested above will be borne out in other phenomena.

³ Although McCawley discusses only the *S’-with* (adverbial subordinate clause equivalent), the same holds of the *V”-with* (attendant circumstances).
f. With the students probably all wanting to find out their grades, we had better finish grading the papers tonight.

The second evidence is concerned with the following facts: (a) negative elements in *with* constructions do not induce inversion in matrix clauses; (b) the presence of negative words in *with* constructions does not match with negative polarity items in matrix clauses. The important point is that subordinate clauses show the same behavior.

(4) a. *With no one feeling safe does everyone stay home at night.
   b. *If no one objects can you leave right away.
   c. If no one objects, you can leave right away.

(5) a. *With no one feeling safe, anyone ever goes out.
   b. *[That no one feels threatened] ever leads anyone to go out.

Finally, adverbs in 6a–b and a negative morpheme *not* in 6c confirm the existence of S even when no V-*ing* shows up in surface structure.

(6) a. With lawyers currently subjected to frequent attacks in the press, you should consider changing to a different profession.
   b. With most students evidently eager to learn about new things, we shouldn’t teach the same courses year after year.
   c. With your brother not a veterinarian, I don’t see how he’s qualified to tell me what to feed my cat.

The arguments summarized above are straightforward and convincing. However we should explore another possibility that a constituent following *with* is S', because the evidence presented by McCawley is also valid for S'. We will see in the next section that this expectation is actually fulfilled.

2.1. **WITH + S'**. Before turning to the main argumentation, I will anticipate two potential problems arising from the stipulation that the structure of *with* constructions is of a form shown in 7: (a) how to assign objective Case to the NP in 7?, (b) how to consistently account for a lexical NP/PRO alternation?

(7) \[[PP [P with][S' [S NP [INFL -ing][VP V ...]]]]\]
A PRO subject in fact appears in *with* constructions.4

(8) A visitor entered without PRO knocking.

As to (a), recall that it is currently believed that S’ is an absolute barrier to government, precluding the possibility that *with* assigns Case to the NP in 7 under government.5 Also as to (b), a lexical NP is governed while PRO is ungoverned under the standard assumption of the GB theory. Thus this alternation phenomenon requires explanation. Putting aside the solution to these problems until later, I will show that 7 is the correct representation of the structure of *with* constructions.

Consider the three possibilities for the structure of *with* constructions.

(9) a. \[ PP \rightarrow S \]  
    b. \[ PP \rightarrow S' \]  
    c. \[ COMP \rightarrow S \]  

9c is proposed by Ishihara 1982. She claims that *with* in this construction resembles a prepositional complementizer *for* in several respects, concluding that *with* is really a complementizer. However, in spite of this, she assigns different structure to *with* clauses and to *for* clauses. *For* + S is dominated by S’, which is quite natural if *for* is a complementizer, while *with* + S is claimed to be dominated by PP.

(10) a. \[ P, +COMP \rightarrow S \]  
    b. \[ P, +COMP \rightarrow S \]  

I will disregard 9c hereafter, concentrating only on 9a and 9b. I will show below that the *with* + S analysis gives us an unsatisfactory result concerning the Binding Theory violation.

Consider X in the configuration *with* + X + Y, where X functions as a subject to the following material Y. We should examine four cases: (a) X = an anaphor, (b) X = a pronominal, (c) X = an R-expression, and (d) X = PRO. Anaphors are all barred as seen in 11 (the examples are

4 Curiously, (ia) is awkward. It might be that *with* is redundant here, since a sentence lacking *with* is available as in (ib). I have no ready answer, however.

(11) a. John left the room with PRO drinking beer.  
    b. John left the room drinking beer.

5 \( \alpha \) governs \( \beta \) if \( \alpha \)=X⁰ or a coindexed NP in COMP, \( \alpha \) c-commands \( \beta \), and \( \beta \) is not protected by a maximal projection (cf. Chomsky 1982: 19).
due to Reuland (1983: 130-1)).

(11) a. *Joep stood his ground badly, with himself, maybe, impressed, not daring to put up a fight.
   b. *They arrived without each other knowing it.

Pronominals sit comfortably at the X positions.

(12) a. Joep got beaten at the game by his rivals, with him stupidly letting himself be outmaneuvered by the prime minister. (Reuland 1983: 131)
   b. John and Mary were leaning against the wall, with him facing her.

R-expressions and PROs are also quite natural.

(13) a. It reminded her of an ageing peacock strutting on the lawn with only half its feathers left.
   (Roald Dahl, *Kiss Kiss*)
   b. With Mrs Foster urging him from the back seat, the man drove fast all the way, and she caught her plane with a few minutes to spare. (ibid.)

(14) a. Without in any way PRO wishing to blow my own trumpet, I think that I can claim to being in most respects a moderately well-matured and rounded individual. (ibid.)
   b. Deliberately, without PRO mincing my language, I repeated to her the story I had heard about Allerton.
   (Agatha Christie, *Curtain*)

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6 I will use hereafter the notation that the intended coreference is indicated with italics. Thus, say in 11a, the sentence is ungrammatical with the coreferent interpretation of Joep and himself.

7 Ishihara 1982 presents the following examples which run counter to the argument in the text.

   (i) a. *With him running the show, John can do anything he wants. (p. 51)
   b. With himself running the show, John can do anything he wants. (p. 49)

   However, sentences with pronominals are acceptable when context necessitates their existence.

   (ii) a. With him running the show and his boss backing him up, John can do everything he wants. (Nishi 1984: 119)
   b. John, Mary, and I were leaning against the walls with him facing her and her me. (Sakakibara 1982: 85)


   Incidentally, it might be conceivable that himself in (ib) is in fact an emphatic reflexive. If so, the structure may be something like (iii).

   (iii) With PRO himself running the show ...
This state of affairs needs coherent explanation. In this regard, I will have recourse to the Binding Theory (Chomsky 1981: 188).

(15) A. An anaphor is bound in its governing category
B. A pronominal is free in its governing category
C. An R-expression is free

Take 11b, an anaphor case. If we adopt the structure 9a (with + S), a governor for each other is without, each other is a governor, and an accessible SUBJECT is AGR inherent in the matrix INFL. Thus this sentence should be grammatical because each other is bound in its governing category (the circled S in 16), which is contrary to fact.

(16)

\[
\text{\begin{tikzpicture}

  \node (S) at (0,0) {$S$};
  \node (N) at (-2,1) {$N''$};
  \node (INFL) at (0,1) {$\text{INFL}$ [+AGR]};
  \node (PP) at (2,1) {$\text{PP}$};
  \node (V) at (0,2) {$V''$};
  \node (they) at (-2,0) {they};
  \node (arrive) at (0,3) {arrive};
  \node (without) at (2,0) {without};
  \node (each other) at (2,2) {each other};
  \node (knowing it) at (2,1) {knowing it};

  \draw[->] (S) -- (INFL);
  \draw[->] (INFL) -- (PP);
  \draw[->] (INFL) -- (V);
  \draw[->] (V) -- (N);
  \draw[->] (V) -- (they);
  \draw[->] (V) -- (arrive);
  \draw[->] (PP) -- (without);
  \draw[->] (without) -- (each other);
  \draw[->] (without) -- (knowing it);

  \end{tikzpicture}}
\]

If, on the other hand, a governing category is the S in 9b, all the facts in 11 through 14 follow except the PRO case, which I will return to later. The anaphors are not bound in the governing categories in 11, the pronominals are free in the governing categories in 12, and the R-expressions are free in 13. At this point, I will rely on the intuition in Reuland 1983, i.e., a potential governor in with constructions is -ing which is ‘a realization of a nominal element in the verbal inflection marker’ (Reuland 1983: 102).

Chomsky 1981 argues that AGR inherent in INFL [+Tense] has a nominal character, assigning nominative Case to a subject which AGR...
governs. If so, we cannot a priori exclude the possibility that \textit{-ing} in \textit{with} constructions, which has a nominal character, is also INFL governing a subject. A few comments should be added here, however. A nonfinite verbal form in \textit{with} constructions does not have a Case-assigning feature, i.e. \([+\text{AGR}]\). Then a problem arises: how to assign Case to a post-\textit{with} NP? Notice that the structure \textit{with} + \textit{S'} excludes the possibility that \textit{with} governs and Case-marks a subject because of an intervening \textit{S'}, which is an absolute barrier to government.

A Case-assignment mechanism is operative under the stipulation that a head of a phrase assigns Case to a head of its complement. Thus a transitive verb assigns objective Case to \textit{N}, a head of an objective complement.

\begin{equation}
(17) \begin{array}{c}
\text{\[VP \underline{V}[NP \ldots N \ldots]\]} \\
\text{objective Case-assignment}
\end{array}
\end{equation}

Assuming this mechanism, the same holds of \textit{with} constructions. \textit{With} constructions are PPs, so a head is a preposition \textit{with}. A post-\textit{with} \textit{S'} is a complement to \textit{with}, the head of which is INFL \textit{-ing}. An objective Case-assignment is correctly applied and this Case is subsequently transmitted to a post-\textit{with} NP via \textit{CASE TRANSMISSION}. See the schematized form below.

\begin{equation}
(18) \begin{array}{c}
\text{\[PP \underline{P [with]}[s' [s NP \underline{[INFL -ing]}][VP V \ldots]]\]} \\
\text{Case Transmission} \\
\text{objective Case-assignment}
\end{array}
\end{equation}

At this stage, I will nullify a possible counterargument that a subject in an objective tensed clause complement does not receive objective Case but nominative Case. This objection is untenable. A tensed clause has INFL \([+\text{Tense}, +\text{AGR}]\) in its minimal domain which induces a nominative Case-assignment. This is reminiscence of the Case-Resistance Principle stated in Stowell (1982: 245).

\begin{equation}
(19) \begin{array}{c}
\text{Case may not be assigned to a category which bears a Case-assigning feature (i.e. \([-\text{N}]\) or \([+\text{Tense}]\)).}
\end{array}
\end{equation}

I think this derives from the principle that Case should be assigned as minimally as possible. Presumably the linguistic faculty of the human being is equipped with this principle, but I will leave open this biological commitment.

The second question posed earlier is not answered yet, viz, the occurrence of a PRO subject. If the previous discussion about governing
-ing' is correct, which I assume is really the case, a post-without PRO in 20 is governed contrary to the assumption of the GB theory (PRO is un governed).

(20) A visitor entered without PRO knocking.
I presume that the structure concerned is derived by Operator-Movement which raises an empty operator to a COMP position as in 21.

(21) A visitor entered \([PP \ without \ [S' O_i [S t_i knocking]]]\)
Here \(O_i\) is an empty operator and \(t_i\) is a trace left by Operator-Movement. The trace is properly governed by \(O_i\) without inducing the ECP violation.\(^{11}\)

Notice that a trace left by Operator-Movement is by definition a variable.

(22) \(X\) is a variable if it is locally \(\bar{A}\)-bound and in an A-position.
\[(cf. \ Chomsky \ 1981, \ 1982)\]
Returning to the example 21, \(t\) is \(\bar{A}\)-bound by an empty operator in COMP and is in an A-position, satisfying both requirements for a variable. The supporting evidence for \(t = \) a variable comes from the examples in 23a-b. A variable bound by a \(wh\)-word in COMP can occupy a subject position, the structure of which is shown in 23c.\(^{12}\)

(23) a. With what annoying you, are you so unhappy?
b. With what in every port, does Harry feel pretty contented?
c. With \([s' \ what \ [s \ t \ annoying \ you]]\]

2.2. BEING DELETION ANALYSIS. In this section, I will argue against the Having Deletion analysis touched upon in Ishihara 1982 and in McCawley 1983, and instead propose that this analysis can be rejected with recourse to There Insertion. The relevant data are 24.

(24) a. With three brothers and two sisters, Harry had little time to himself.
b. With a girl in every port, Harry feels pretty contented.
\[(McCawley \ 1982: \ 277)\]

\(^{11}\) Proper government: government by a lexical category, i.e. V, N, A, or P, or a coindexed NP in COMP. The second half of this definition applies to the discussion in the text.

\(^{12}\) However, (ia-b) are unacceptable, in which \(wh\)-words originate in non-subject positions.

( i ) a. *With whom John being obedient to ...
b. *With what John being involved in ...
McCawley's contention is that the sentences above are derived by deleting PRO + having. Thus an underlying form for 24b is 25.

(25) With PRO having a girl in every port, Harry feels pretty contented.

The evidence employed by McCawley is that S-initial adverbs in nonfinite clauses are barred (cf. Emonds 1976). The same is true of the cases in which apparently being is deleted as in 27.

(26) a. *Mary arranged for, in St. Louis, John to rent a house cheap.
    b. *They build machines for, during lunch hours, businessmen to exercise on. (Emonds 1976: 196)

(27) a. *With currently lawyers (being) subjected to frequent attacks in the press ...
    b. *With still his wife (being) in Florida ...

Such adverbs are tolerated in the sentences like 24.

(28) a. With currently a girl in every port ...
    b. With usually more money than she knows how to spend ...

However, we can account for the position of adverbs without stipulating the Having Deletion analysis.

Take the example 24b. The base form is 29.

(29) \[PP \text{with} [s', [s \text{a girl being in every port}]]\]

(30) \[PP \text{with} [s', [s e_i \text{being} \# \text{a girl}_i \text{in every port}]]\]

30 derives from 29. Here, \# indicates a position possible for an adverb. A surface form is attained with subsequent BEING DELETION in PF component.\(^{13}\) If There Insertion applies, the surface form 31 results.

(31) With there being \# a girl in every port ...

2.3. S'-WITH VS. V''-WITH. In this section, I will argue that with constructions expressing attendant circumstances are attached to V'' (the V''-with), and that with constructions equivalent in meaning to adverbial subordinate clauses are dominated by S' (the S'-with). Coreference facts confirm this.\(^{14}\)

C-command prescribes that no coreference be obtained when NP\(_1\) c-commands NP\(_2\), and NP\(_2\) is not a pronominal. The definitions of

\(^{13}\) Cf. Nishi 1984.

\(^{14}\) Cf. Sakakibara 1982, in which he deals with other phenomena than coreference facts. I cannot compare his system with mine for lack of space, however.
c-command run as follows (Reinhart 1981: 612).\(^{15}\)

(32) a. **THE NONEXTENDED C-COMMAND**

Node A c(onstituent)-commands node B iff the branching node most immediately dominating A also dominates B.

b. **THE EXTENDED C-COMMAND**

Node A c(onstituent)-commands node B iff the branching node \(\alpha_1\) most immediately dominating A either dominates B or is immediately dominated by a node \(\alpha_2\) which dominates B, and \(\alpha_2\) is of the same category type as \(\alpha_1\).

With this brief review in mind, see the relevant data in 33 through 36. The extended version of c-command correctly predicts coreference possibilities and/or impossibilities.

(33) a. John sat there with his legs crossed.
b. *John sat there with John's legs crossed.
c. John hit Mary with her back against the wall.
d. *John hit Mary with Mary's back against the wall.

(34) a. With his legs crossed, John sat there.
b. *With John's legs crossed, John sat there.
c. With her back against the wall, John hit Mary.
d. With Mary's back against the wall, John hit Mary.

(35) a. John was worried with his mother hanging around.
b. *John was worried with John's mother hanging around.
c. John scolded Mary with her mother hanging around.
d. John scolded Mary with Mary's mother hanging around.

(36) a. With his mother hanging around, John was worried.
b. ?With John's mother hanging around, John was worried.\(^{16}\)
c. With her mother hanging around, John scolded Mary.
d. With Mary's mother hanging around, John scolded Mary.

First concentrate on 33 and 34, i.e. the V''-with. In nonpreposed forms, 33b and 33d are ungrammatical under the intended interpretation in which coreference holds between the intalicized NPs, while in

\(^{15}\) Various definitions of c-command have hitherto been proposed (Reinhart 1981, Rouveret and Vergnaud 1980, Koopman and Sportiche 1982, among others). The extended version of c-command extends the nonextended c-command in an obvious sense of the word 'extension', minor variations among authors omitted. I will not go into the detailed discussion here as to why various definitions should be postulated.

\(^{16}\) This sentence sounds a little bit awkward. However, (i) is quite acceptable.

(i) With John's mother having recovered from cancer, John felt very happy.
preposed forms, 33d musters up its strength. The answer to this
discrepancy is quite straightforward. 33a-b have the structure indi-
cated in 37a while 33c-d are of the form shown in 37b.

(37) a. 
   \[ S \]
   \[ \overrightarrow{\text{N"}} \]
   \[ \overrightarrow{\text{V' sat there}} \]
   \[ \overrightarrow{\text{PP}} \]
   \[ \overrightarrow{\text{his \text{"John's}}} \]
   \[ \overrightarrow{\text{hit Mary}} \]

The NP contained in PPs are both c-commanded by their respective
antecedents, excluding the nonpronominal forms in PPs.

Assuming that VP-dominated PP is moved into a COMP position (cf.
Emonds 1976), the preposed configurations are described as 38.

(38) a. 
   \[ \overrightarrow{\text{S'}} \]
   \[ \overrightarrow{\text{COMP PP}} \]
   \[ \overrightarrow{\text{his \text{"John's}}} \]
   \[ \overrightarrow{\text{John sat there}} \]

Notice that I assume that a head of S is INFL, and that S' is a projection
of this INFL. Thus S = INFL', and S' = INFL". I also presume that
COMP does not project onto any other categories, COMP being a
maximal projection by itself if the term 'maximal projection' applies to
COMP. Then all the coreference facts follow. In 38a, the subject
John extendedly c-commands the NP contained in the PP in a COMP
position, while the object Mary does not in any way c-command the
NP in PP.

Next turn to the S'-with.

(39) a. 
   \[ S' \]
   \[ \overrightarrow{\text{S}} \]
   \[ \overrightarrow{\text{PP}} \]
   \[ \overrightarrow{\text{his \text{"John's}}} \]
   \[ \overrightarrow{\text{John was worried}} \]

b. 
   \[ S' \]
   \[ \overrightarrow{\text{S}} \]
   \[ \overrightarrow{\text{PP}} \]
   \[ \overrightarrow{\text{her \text{"Mary's}}} \]
   \[ \overrightarrow{\text{John scolded Mary}} \]
The postulation of an E node is motivated, considering the data which Reinhart 1981 presents. Reinhart notes that sentential PPs, when preposed, allow COMP to be filled with wh-words (see 41), and that coreference facts force us to adopt the view in which preposed sentential PPs should be attached to nodes higher than S'. If sentential PPs are attached, say, to S', Rosa in 42a–b extendedly c-commands the italicized NPs in the sentential PPs, barring the nonpronominal form Rosa.17

(41) When she finishes school, what will she do?

(42) a. When she finishes school, Rosa will go to London.
    b. When Rosa finishes school, Rosa will go to London.

(Reinhart 1981: 628)

Under my analysis, in which with constructions are dealt with as sentential PPs, it comes as no surprise that with constructions show the same behavior also as to 41. After preposing with constructions, wh-words appear in matrix COMP positions.

(43) With his mother hanging around, what was John worried about?

Returning to the main issue, in 39a the NP in PP is c-commanded by John, and in 39b Mary in PP is sanctioned by not being c-commanded by the matrix object Mary. The preposed cases, as in 40a–b, pose no problem, because the NPs in matrix clauses cannot in any way c-command the elements in the PP dominated by E.

17 It may be argued that E is not a unit of sentence grammar but a unit of discourse grammar hitherto unclarified. Presumably, S' is a ‘bridge’ connecting sentence grammar with discourse grammar. Moreover, it might be conceivable that all main clauses are dominated by S', and that S' is in turn dominated by E. I will leave open this conjecture for future study.
This concludes, quite consistently, that the two types of *with constructions are distributed differently. The independently motivated notion of c-command leads to this result.

3.1. Parasitic gap phenomena. A typical instance of parasitic gaps is exemplified in 44, where *t is a trace left by WH-Movement, i.e. a real gap, and e is a parasitic gap licensed only under the presence of a real gap. The true nature of parasitic gaps is in dispute however.

(44) Which article did John file *t without reading e?
The formulation by Chomsky (1982: 40) is as follows. Although Chomsky redefines it later (p. 66) considering resumptive pronouns, 45 is sufficient for my argument.

(45) In the configuration [... a ... t ... e ...], order irrelevant,
   (a) a locally A-binds t
   (b) t does not c-command e
See in this regard the following examples. In 46, t is A-bound, not A-bound, since *John and *Mary in matrix clauses are in A-positions. In 47, t c-commands a parasitic gap.

(46) a. *John was killed t by a tree falling on e.
   b. *Mary seemed t to disapprove of John's talking to e.
      (Engdahl 1983: 13)
(47) a. *Which articles t got filed by John without him reading e?
   b. *Who t remembered that John talked to e?
      (Engdahl 1983: 20)
A parasitic gap is by definition a variable A-bound by a at S-structure.

Chomsky 1982 is rather vague in discussing these constructions. He seems to adopt the nonextended version of c-command (p. 40), and to take the structure of *without clauses (attendant circumstances) as S-domination without giving any motivation (p. 47). The first assumption is descriptively adequate. However, no consistent explanation is obtained from the second assumption. The difference in domination discussed earlier gives us quite a different picture from Chomsky's formulation.

Consider the V""""-with(out) and the S'-with(out). It can be seen that the occurrence of parasitic gaps is barred in 48b but not in 48a.

(48) a. These are the articles that Bill wrote t without correcting e.
   b. *These are the articles that you knew Bill wrote t even without analyzing e. (Chomsky 1982: 52)
The parasitic gap in 48b must be replaced by a pronominal. This discrepancy is due to the difference in the depth of embedding as shown below.

(49) a.

\[
S \rightarrow N'' \rightarrow V'' \rightarrow \text{these} \rightarrow V' \rightarrow \text{are} \rightarrow N' \rightarrow S' \rightarrow \text{the articles} \rightarrow \text{COMP} \rightarrow \text{that} \rightarrow N'' \rightarrow \text{INFL} \rightarrow V'' \rightarrow \text{Bill} \rightarrow V \rightarrow \text{write} \rightarrow N'' \rightarrow \text{without correcting e}
\]

b.

\[
S \rightarrow N'' \rightarrow V'' \rightarrow \text{these} \rightarrow V' \rightarrow \text{are} \rightarrow N' \rightarrow S' \rightarrow \text{the articles} \rightarrow \text{COMP} \rightarrow \text{that} \rightarrow N'' \rightarrow \text{INFL} \rightarrow V'' \rightarrow \text{even without analyzing e} \rightarrow \text{you} \rightarrow \text{knew} \rightarrow S' \rightarrow \text{S} \rightarrow \text{Bill} \rightarrow V \rightarrow \text{write} \rightarrow N'' \rightarrow t
\]

It might be objected that the distinction of the two types of with constructions is irrelevant here, since it makes no difference if the PP in 49b is dominated by the second highest V". However, in this way, the ungrammaticality of 50 cannot be accounted for.
(50) *These are the articles John filed \( t \), with there being a necessity to read \( e \).

Notice that we should have recourse to the nonextended sense of c-command in order to allow the occurrence of a parasitic gap in 48a. \( t \) in 48a extendedly c-commands \( e \), but does not nonextendedly c-command it. On the contrary, \( t \) in 48b, in any sense of c-command, does not c-command \( e \). I hold that the difference in behavior derives from the difference in domination effects. The circled S in 49a functions as a governing category for \( t \); \( t \) = a governee, write = a governor for \( t \), and an accessible SUBJECT = INFL under the circled S. A governing category for \( t \) in 49b is also the circled S, so \( e \) in PP is not dominated by a governing category for \( t \). I will formulate the following restriction (revised later) for the occurrence of parasitic gaps.

(51) A parasitic gap occurs only in a position dominated by a governing category for a variable which allows a parasitic gap.

This restriction accounts for grammaticality and/or ungrammaticality in other constructions than with(out) clauses. The sentences below are all cited from Chomsky (1982: 38-54).

(52) a. *This is the student everyone expected \( t \) to be intelligent because John believed \( e \) to be intelligent.
b. *This is the student everyone expected you would like \( t \) because John said he liked \( e \).
c. This is the kind of food you must cook \( t \) before you eat \( e \).
d. Here is the influential professor that John sent his book to \( t \) in order to impress \( e \).
e. Here is the student that my attempt to talk to \( e \) scared \( t \) to death.

Chomsky does not give conclusive explanation on the ungrammaticality of 52a–b. He only notes (p. 54): ‘It may be that other factors such as those already mentioned [Case conflict, a parallelism constraint, and the like – Mihara] are involved here, since 52b also seems unacceptable though there is again no ECP violation. In general, there is plainly much more to learn about the factors that enter into determining the status of parasitic gap constructions beyond those that follow directly from the previously discussed principles of GB theory, though the latter do appear to account for a substantial core of significant cases’.

I hold that the other factor mentioned by Chomsky in the foregoing citation is in fact the restriction which I have formulated in 51. The structure corresponding to 52a is the same as 49b in relevant respects,
i.e., the *because* clause is dominated by S’, the node higher than the circled governing category. The rest of the examples, I will leave to the reader to verify.

### 3.2. Governing Domain

I will rephrase the restriction 51 as 54 in terms of the notion **GOVERNING DOMAIN**.

(53) The Governing Domain is all the positions dominated by a governing category for a variable which is $\overline{A}$-bound by an element in an $\overline{A}$-position.

(54) A parasitic gap occurs only in the Governing Domain.\(^ {18} \)

The last question to be asked is why a parasitic gap is permitted only in the Governing Domain.

According to the current understanding of the scope interpretation of a *wh*-word, *wh* is considered to have scope over its c-command domain (cf. May 1977). However, in this connection, Haïk’s 1984 argument is very telling. She argues that for scope interpretation with respect to other NPs, it is not the *wh*-word itself that should be considered, but rather its trace. The following example shows that *someone* in the matrix clause does not fall in the scope of the plural *wh*-quantifier.

(55) Which men did someone say that Mary likes t?

(Haïk 1984: 195)

If 55 has an answer like *John and Bill*, this answer cannot be verified in the situation in which different persons did the saying; for instance, X said that Mary likes John, and Y said that Mary likes Bill, with X $\neq$ Y (see Haïk 1984: 196). This cannot be predicted if the scope of a *wh*-word is determined according to a S-structure position. The COMP position is higher than that of *someone*, so *someone* should be in the

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\(^ {18} \) This restriction cannot block all ungrammatical sentences containing parasitic gaps. Obviously the parasitic gaps are in the Governing Domain in the following sentences.

(a) He is a man whom everyone who meets the woman who marries e/him admires t. (Chomsky 1982: 52)

(b) Which report did you file t without telling John to pass e/it on to Mary? (Safir 1984: 606 note 3)

Pronouns are preferable in these sentences. Maybe some performance factor is involved here, ruling out the parasitic gaps embedded in extra deep positions. However, it is not so clear to me whether (ia) is totally out or not. Chomsky (1982: 53) says that (ia) is ‘less acceptable’ than (ii).

(ii) He is a man whom everyone who meets e admires t.
scope of the plural *wh*-quantifier, contrary to fact. The same holds of *wh*-in-situ, which should have scope over NPs in a matrix clause after *WH*-Raising is applied at LF, also contrary to fact.

(56) Une femme a dit que Marie aimait quels hommes.
     ‘A woman said that Mary likes which men?’

(Haïk 1984: 196)

Haïk also argues that NP₁ may have scope over NP₂ only if the two are contained inside the same minimal S,¹⁹ or if NP₁ c-commands NP₂ when S'-boundaries intervene between them. The first half of this scope interpretation is attested with the following sentence.

(57) Someone said that some woman loves many men.

It can be seen that *many men* has scope over *some woman*, meaning that different women love many men.

Concluding remarks should be given. A parasitic gap, being a variable, must be bound by an operator in an *A*-position which binds a real gap. If Haïk’s argumentation is correct, which I assume is on the right track, the scope of the operator should be determined according to its original position, i.e. the position occupied by a real gap. The scope of this variable ranges over the minimal S which contains the variable. A parasitic gap, as its name implies, cannot survive without a real gap. Thus it can be concluded, quite consistently, that the domain of a governing category for a real gap coincides with the Governing Domain for a parasitic gap.

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¹⁹ This reminds us of the scope interpretation of a *wh*-word which Aoun, Hornstein, and Sportiche (1980: 76) discuss: the scope of a *wh*-word fronted by *WH*-Movement is the S it c-commands at S-structure.
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