Lines of inquiry into Wh-Movement

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Chapter 1

Lines of Inquiry into *Wh*-Movement

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1.1 "On *Wh*-Movement" and Beyond

In *Language and Problems of Knowledge*, Chomsky (1988, 60) characterizes linguistic inquiry as a process that typically begins with the study of structured expressions of a particular language, then passes into a grammatical description of (larger fragments of) a particular language (i.e., a theory of competence), and finally addresses the explanatory task of answering why the facts of human language are the way they are. This last task leads to research into the language faculty and into the construction of a theory of Universal Grammar (UG). As Chomsky notes, these three tasks of linguistic inquiry are mutually interdependent but, in practice, do not necessarily evolve in strict succession. Linguistic inquiry may take the route from studying linguistic expressions, to constructing a language-particular grammar, and finally to developing a theory of UG, but it may just as well operate in reverse: a particular conception of UG may, for example, influence the way the syntactician perceives linguistic expressions, and this in turn will affect his or her description of a particular language. One of the finest illustrations of the latter route is Chomsky's (1977) paper "On *Wh*-Movement" (henceforth: OWM), the paper we commemorate in this volume.

1.1.1 On *Wh*-Movement

OWM adopts and builds on the 1973 "Conditions on Transformations" framework, in which Chomsky initiated a research program that would lead to, among other things, a general theory of movement. The transformational rule system of this theoretical framework consists of general movement rules such as "Move *wh*-phrase" and "Move NP," which essentially apply blindly. It should be noted that in OWM (p. 85, (43)), the formulation of the *wh*-movement rule specifies the target of the movement operation: "Move *wh*-phrase into COMP."

The generative force of the movement rules is constrained by a set of conditions. One such condition is the condition of the (strict) cycle, which governs the order in which transformational processes apply.[1] Another, the Subjacency Condition, states that movement is local, where locality is defined in terms of the number of cyclic nodes (also called bounding nodes) that the moved constituent crosses (a single cyclic node being the maximum). More specifically, as stated in OWM (p. 73, (6)):[2]

(1) A cyclic rule cannot move a phrase from position Y to position X (or conversely) in:

$\ldots X \ldots [_{\alpha} \ldots [_{\beta} \ldots Y \ldots] \ldots] \ldots X \ldots$, where α and β are cyclic nodes.

Phenomena of long-distance movement are analyzed as movement dependencies created by the successive-cyclic application of local movement steps (COMP-to-COMP movement in the case of *wh*-movement). A third type of condition governing (*wh*-)movement concerns the constituent structure derived by the application of movement. The movement-derived structures, involving a relationship between a moved element and its coindexed trace, are taken to be subject to conditions such as the Propositional Island Condition (PIC) and the Specified Subject Condition (SSC) (see OWM, 73, (4)–(5)), which also govern anaphoric relations that are defined by so-called rules of construal. The dependency between the *wh*-phrase and its trace is interpreted as a quantifier-variable relationship at Logical Form (LF) by a rule of interpretation for *wh*-phrases. Importantly, as Chomsky points out (OWM, 83), the trace left behind by the moved phrase cannot always be identified as the variable within the scope of the *wh*-quantifier. This holds specifically in contexts where pied-piping is involved in the *wh*-movement process (e.g., *[Whose book]$_i$ did Mary read t_i?*). In those cases, pied-piped material (here, *book*) must be placed back—reconstructed—into the extraction site.

With the "big picture" of movement theory presented in "Conditions" as a theoretical background, in OWM Chomsky analyzes a variety of clausal constructions from English, such as comparatives (2a), topicalization (2b), clefts (2c), (finite and infinite) indirect questions (2d), (finite and infinitival) relatives (2e), infinitival complements within the adjective phrase (2f), and *easy-to-please* constructions (2g).

(2) a. They have more enemies than we have
b. This book, I really like
c. It is this book that I really like

d. I wonder who to see
e. I found a book for you to read
f. John is tall enough for us to see
g. John is easy (for us) to please

Until the appearance of OWM, generative analyses of these constructions mostly took the route of linguistic inquiry that goes from studying structured expressions of a language to constructing a language-particular grammar, and then to inquiring into the language faculty. An automatic consequence of this route was that syntactic analyses often did not go beyond the construction-specific and language-particular description of human language. Each clausal construction in (2) was derived by its own transformational rule (Comparative Deletion, Topicalization, Clefting, Indirect Question Formation, Relativization, a rule for adjective-qualifier complements, *Tough*-Movement), each stated in a rather language-specific way.[3] The final result of this type of inquiry was not greater insight into the nature of the language faculty, but a bigger grammatical apparatus (e.g., a large class of possible transformational rules) for describing a particular language.

OWM turned generative linguistic inquiry in a new direction. It showed that a particular conception of UG (specifically, the subtheories that concern the operation Move *wh*) influences the way one assigns structures to linguistic expressions of a specific language and how it influences the form of language-particular grammars. More specifically, Chomsky showed convincingly how the descriptively rich transformational rule system for English (e.g., for the constructions in (2)) could be eliminated, and how a varied set of English constructions like those in (2) could be explained in terms of a general (i.e., universal) movement rule, Move *wh*, in combination with general principles of language, each accounting for some general (universal) property of the *wh*-movement process. This integration of general principles of grammar with compelling, detailed analyses of particular phenomena in English makes OWM an exemplary publication in generative syntax.

Importantly, this reduction operation not only led to dismantling the grammatical apparatus for the description of English, it also limited the class of possible movement rules, as defined by UG (see OWM, 111). Movement, being one of the computational operations defined by UG, is no longer defined in terms of an information-laden structural description and a structural change. The class of movement rules (e.g., Move NP, Move *wh*) just states that something is moved. Movement ingredients

such as "What is moved?", "Where is it moved to?", "How local is the movement operation?", and "How is the movement operation ordered with respect to other movement rules?" are no longer part of the transformational rule itself; instead, they are "reallocated" as general, configurational properties to different components of the grammar (UG).

The importance of OWM also lies in the contention that these general configurational movement properties that have been isolated can serve as a kind of diagnostic tool for identifying the application of *wh*-movement in some syntactic construction. The key properties that Chomsky considers to be diagnostic of *wh*-movement are these (see OWM, 86, (49)):

(3) a. It leaves a gap.
    b. Where there is a bridge, there is an apparent violation of Subjacency, the PIC, and the SSC.
    c. It observes the Complex NP Constraint (CNPC).
    d. It observes the *Wh*-Island Constraint.

Property (3a) follows from the assumption that *wh*-movement moves a phrase, which in turn implies that a gap (i.e., a category voided of phonological content) is left behind in the extraction site. Property (3b) refers to the fact that *wh*-movement can circumvent a violation of Subjacency, the PIC, and the SSC in structural contexts involving so-called bridge verbs. An important presupposition here is that *wh*-movement can proceed successive-cyclically (i.e., stepwise on successive cycles, making use of all the intermediate COMP positions that separate the extraction site from the ultimate landing site). The island properties (3c) and (3d) are implied by Subjacency.[4]

Chomsky formulates the issue about the diagnostic function of the *wh*-properties in (3) as the central research question of OWM (see p. 86, (50)).

(4) "Where we find the configuration [(3)] in some system of data, can we explain it on the assumption that the configuration results from *wh*-movement?"

The aim of OWM is thus to investigate whether or not the configuration in (3) can serve as a diagnostic for *wh*-movement on the basis of the constructions in (2). Much of OWM then consists of demonstrating that each of the clausal constructions in (2) has (fully or to a great extent) the properties in (3). To give an example: the following sentences, most drawn from OWM, illustrate that an infinitival indirect question construction like (2d) is based on *wh*-movement:

(5) a. I wonder [who to see]
b. I wonder [who to order Mary [to promise [to visit]]]
b′. I wonder [who to persuade Mary [that she should promise [to visit]]]
c. *I wonder [who to insist on [$_{NP}$ the principle [$_{S'}$ that Bill should visit]]]
d. *I wonder [what$_i$ to ask her [when$_j$ to buy t$_i$ t$_j$]]

(5a) illustrates that movement of *who* leaves behind a gap in the direct object position after *to see*. (5b) and (5b′) show that *who* can be moved from the complement position of *visit* to the COMP position of the highest embedded clause thanks to the bridge properties of the verbs *to promise*, *to persuade*, and *to order*. (5c) and (5d) show, respectively, that infinitival indirect questions obey the CNPC and the *Wh*-Island Constraint.

In an infinitival indirect question like (2d), a *wh*-word (*who*) is overtly present at the surface, which, of course, is very helpful for identifying *wh*-movement. Identifying *wh*-movement in constructions lacking an overt *wh*-phrase is arguably more exciting, since there is no direct (overt) element signaling the presence of a displaced *wh*-phrase. Take, for example, a comparative construction like (2a). Even though no overt *wh*-expression is present in the comparative clause,[5] the *wh*-diagnostics lead us to analyze this construction in terms of *wh*-movement: that is, a *wh*-phrase is moved to COMP (Spec,CP in present-day terms). Consider in this regard the following examples, where *t* indicates the original extraction site:[6]

(6) a. John met more linguists [than you met t]
b. John met more linguists [than we thought [you said [Bill believed [Sue met t]]]]
c. *John met more linguists than I believed [$_{NP}$ the claim [$_{S'}$ that Sue had met t]]
d. *John met more linguists than I wondered [$_{S'}$ when Sue had met t]

(6a) illustrates the gap property. (6b) shows that an apparently unbounded dependency can be created if the necessary bridge requirements are fulfilled. (6c) exemplifies the CNPC effect, and (6d) shows that comparative formation is subject to the *Wh*-Island Constraint. The presence of the configuration of *wh*-properties suggests that a rule of *wh*-movement is also involved in the derivation of comparatives. According to OWM, this rule moves an (overt) *wh*-phrase to COMP, where it subsequently gets deleted by a (local) *wh*-phrase deletion rule (see Chomsky's deletion rule (47), p. 86).

Thus, OWM made a crucial contribution to the abandonment of a construction-based view of syntactic rules. Furthermore, it introduced the idea of a diagnostic tool in generative syntax—an instrument that can be used to find out whether some computational operation is involved in the derivation of a linguistic expression. Ever since its introduction, this tool has been recognized as an important instrument in syntactic research and it has been employed by numerous linguists in studying a variety of constructions (see, e.g., Van Riemsdijk 1978; Groos and Van Riemsdijk 1981; Cinque 1982, 1990). Besides making these contributions to linguistic description and theorizing, the approach taken in OWM led to a drastic reduction in the number of available rules of grammar, and therefore in the class of available grammars, which Chomsky considered to be "the major goal of linguistic theory" (p. 125). OWM also led to further refinement of the universal conditions that restrict the expressive power of the general transformational rules (Move *wh*, Move NP).

Regarding the reduction of the available rules, OWM contributed in an important and compelling way to the debate over whether or not syntactic theory should allow unbounded transformations. OWM defends the position that there is no distinction between bounded and unbounded rules. All (cyclic) movement rules are subject to the Subjacency Condition and are therefore bounded. Apparently unbounded movement dependencies are the result of successive-cyclic movement.

1.1.2 Specific Issues

1.1.2.1 Comparatives The discussion between Bresnan (1975, 1976a,b, 1977) and Chomsky (OWM) about the existence of unbounded rules may rightly be called exemplary as regards the integration of theoretical and empirical argumentation. The phenomenon of comparative formation in English played a central role in this debate. As shown in (6b), the compared constituent in the comparative clause can be arbitrarily far from the head of the clause in comparative deletion constructions (Ross 1967). Bresnan proposes to account for this unbounded dependency between the two compared constituents by means of a transformation termed *Comparative Deletion*. This rule deletes the compared constituent of the comparative clause under identity with the head of the clause and can apply over an unbounded domain (so-called deletion over a variable). An important assumption in Bresnan's analysis is that comparative deletion (see (6a)) and comparative subdeletion (see (7)) are one and the same phenomenon, and as such involve the same computational operation.

(7) John met more linguists than you met [____ biologists]

As Bresnan (1977) points out, the missing constituent in the subcomparative clause does not correspond to anything that could have been moved. As shown in (8), for example, a specifier like *how many* cannot be removed from a noun phrase.

(8) *[How many]$_i$ did John meet [t_i biologists]?

For Bresnan, the well-formedness of (7) and the ill-formedness of (8) show that movement cannot be involved in subdeletion. And if subdeletion and comparative deletion are one and the same process, then comparative deletion should not be derived by movement either. In view of facts like (6a–d), this in turn leads to the conclusion that deletion must be long-distance deletion that is subject to island constraints, implying that islandhood is not a diagnostic property of movement processes.

Chomsky goes into the matter at length in OWM. He presents evidence calling into question a uniform treatment of comparative deletion and comparative subdeletion. If comparative deletion involves *wh*-movement and hence displays the *wh*-diagnostics, then subdeletion should not be accounted for in terms of this movement rule.

1.1.2.2 Cylicity and Cyclic Nodes As pointed out above, OWM also led to further refinement of some of the universal conditions that restrict the expressive power of the general transformational rules. One refinement we would like to mention in particular concerns the class of cyclic/bounding nodes that are relevant for Subjacency. In OWM, Chomsky proposes that, besides NP and S′, the category S should be added to the inventory of cyclic nodes.[7] This has the beneficial effect that the impossibility of extracting from a subject NP—so far captured by the ad hoc Subject Condition—can be explained in terms of a general condition, Subjacency (see OWM, 111). In (9), for example, *whom* crosses two boundaries, NP and S.

(9) *[Whom$_i$ did [$_S$[$_{NP}$ your interest in t_i] seem to me rather strange]]?

As Chomsky notes (OWM, 112), *wh*-movement cannot extract a phrase from a nonsubject NP either. In certain cases, this prediction turns out to be correct.

(10) *Who$_i$ did [$_S$ John destroy [$_{NP}$ a book [about t_i]]]?

In others, extraction from NP appears to be possible.

(11) a. Who did John write a book about?
b. Who did you see a picture of?

For (11a), Chomsky adopts Bach and Horn's (1976) proposal that the PP *about who* is in fact not part of the NP at D-Structure but rather a constituent within VP (see (12a)). Evidence for this is the possibility of pronominalizing the sequence *a book*, as in (12b).

(12) a. John wrote [a book] [about who]?
b. John wrote it [about Nixon]

As Pronominalization cannot be applied to (11b)—**John saw it of Nixon*—Chomsky concludes that (11b) is derived by first applying PP-Extraposition to *of who* and then applying *Wh*-Movement to the (NP-external) PP. Schematically:

(13) Who_k did you see [a picture t_i] $[_{PP}$ of $t_k]_i$?

Although we cannot do full justice to the many interesting facets of OWM in this brief introduction, we believe that the issues we have touched upon sufficiently indicate that OWM forms one of the landmarks in the development of generative syntax, and especially in the development of a general theory of movement. Perhaps most important, it set the stage for a radical shift from a construction-oriented and language-specific approach to language to a more principle-oriented approach. Furthermore, it showed that this shift did not have to be at the expense of empirical coverage. Quite the contrary, we would say. This integration of principle-based syntax and empirical coverage also characterized the next stage in the history of generative grammar, the Principles-and-Parameters (P&P) approach (Chomsky 1980, 1981, 1986b), which unifies a great many seemingly disparate grammatical phenomena in a conceptually simple and elegant overall framework of principles.

1.1.3 Minimalist Perspectives

In this section, we make a few remarks about the theory of (*wh*-) movement (also called "internal Merge") in the context of the Minimalist Program (Chomsky 1995), which explores the thesis that human language may be a "perfect system"—that is, a system optimally designed to meet certain interface conditions imposed by other cognitive systems that the language faculty (UG) interacts with. When we apply the minimalist approach to the phenomenon of *wh*-movement, the question arises how its properties can be explained in terms of principles of the interface systems (i.e., representational economy) and what principles of efficient com-

putation underlie the derivation of (clausal) expressions featuring a *wh*-phrase (i.e., derivational economy). Not unexpectedly, the properties or ingredients that are to be studied from this minimalist perspective are quite similar to those that were central in the "Conditions" framework (Chomsky 1973, OWM): "What is moved?", "Where is it moved to?", "How local is the movement operation?", "How is the movement operation ordered with respect to other operations of the grammar?" To this list, we should add the question, "What causes movement? That is, why move?" This question figures prominently in current minimalist research on movement, but was also addressed, though less extensively, in research on *wh*-movement within the "Conditions" framework.[8]

1.1.3.1 Optionality versus Last Resort In OWM (fn. 19), Chomsky states, "My assumption is that all rules of the 'core grammar' ... are optional, the apparent obligatoriness deriving from filters and principles of interpretation, along the lines discussed in Chomsky (1973)." In *The Minimalist Program* (Chomsky 1995), he takes a somewhat different view, proposing a principle of derivational economy according to which movement is an operation of last resort. Thus, there is no free, truly optional movement. Movement must take place in order to satisfy some interface requirement. This property is formally implemented by taking the movement process to be triggered by the goal of eliminating uninterpretable properties/features of the moved constituent (e.g., the *wh*-phrase) and of the target of movement (some functional head—e.g., C).

1.1.3.2 Traces versus Copies An important departure from the "Conditions" framework concerns the structure derived by movement—in particular, the nature of the chain created by movement. At the time OWM was written, it was assumed that movement left behind a trace that was coindexed with the fronted (*wh*-) phrase. From the minimalist perspective, however, no new grammatical objects (e.g., categories, features) may be introduced in the course of the derivation. The only material available for constructing a linguistic expression is that provided by the lexical items that are part of the numeration (the so-called Inclusiveness Condition: no new features are introduced by the computational system (see Chomsky 2000)). As a consequence of this, the copy theory of movement was reintroduced (see also Chomsky 1993 and in fact Chomsky 1955): moving a phrase involves copying the phrase into a higher position, the original occurrence subsequently being deleted (or left unpronounced).

This theory has the advantage that no complex theory of reconstruction is needed to account for various interpretive phenomena; see Chomsky 1993 for discussion.

1.1.3.3 Locality Conditions and Phases Research on locality is also an important line of inquiry in minimalist theorizing. According to the minimalist conception of locality, movement must be short; that is, it can operate only within a limited amount of structure. This shortness of movement was captured by the Subjacency Condition in terms of the limitation that a moved phrase can cross at most one cyclic node. This locality constraint on movement operations, which "in effect limits the 'memory' available to transformational rules" (OWM, 111), is now captured by the Phase Impenetrability Condition (Chomsky 2000, 2004a), which essentially states that only the edge (the specifier and head) of a phase (e.g., CP and vP) is accessible to syntactic operations in higher phases. This condition has the effect that a computational operation (e.g., the Agree relation, as part of the movement operation) cannot look too deeply inside a lower phase. According to this conception of locality, apparently unbounded movement results from successive-cyclic movement through the edges of different phases.

Another type of locality condition, based on Rizzi's (1990) Relativized Minimality, is the Defective Intervention Constraint (Chomsky 2000, 2004a; see also Chomsky's (1995) Minimal Link Condition). According to this principle, the probe (i.e., target of movement) always tries to enter into a matching relation (Agree) with the closest potential matching feature (i.e., dependencies must be satisfied in the smallest structure where they can be satisfied). An intervention effect (e.g., a violation of the *Wh*-Island Constraint) is obtained if the probe α matches an inactive category β that is closer to α than a matching γ. In such a configuration, an Agree relation between α and γ is barred.

1.1.3.4 Cyclicity The principle of cyclic rule application, present in OWM, is also central to the minimalist conception of the computational system of human language. In Chomsky 1993, structure is said to be built "bottom up," and this derivational process is said to be constrained by the Extension Condition: roughly speaking, application of (external) Merge or Move (i.e., internal Merge) to some structure K always leads to an extension of this structure, K*, which includes K as a proper part. As Chomsky notes, the Extension Condition yields a version of the strict cycle. Cyclicity also shows up in the context of the "timing" between

syntax, on the one hand, and semantics and phonology, on the other. The idea is that in the course of a derivation, syntactic objects (so-called phases) can be transferred to the interface systems for spell-out and interpretation. Once this is done, the information that was part of the transferred objects is "forgotten" and no longer accessible to the computational system (cf. the Phase Impenetrability Condition), which should considerably reduce the load on memory (see Chomsky 2000, 2001). All this means that information is only locally available during the derivation of a linguistic expression.

1.2 *Wh*-Movement Moving On

With Chomsky's OWM as a starting point of reflection, the present volume aims to further develop the theory of *wh*-movement (and movement in general). We have organized the chapters around four themes: (part I) *wh*-phrases and pied-piping, (part II) Ā-chains and the copy theory, (part III) cyclicity and locality, and (part IV) *wh*-constructions. In what follows, we summarize the chapters in each part.

1.2.1 *Wh*-Phrases and Pied-Piping

The starting point of Donati's chapter is the assumption made in OWM that *wh*-movement operates on a phrase (see OWM, rule (1b): "Move *wh*-phrase"). Donati observes that this approach is incompatible with the minimalist feature-based approach to movement, whereby only features are visible to the computational procedure, and phrasal properties of *wh*-movement need to be derived. Donati then argues that pure feature movement should be excluded as a syntactic option under the assumption that features cannot be merged. Thus, pied-piping is always involved. She proposes that head movement (i.e., pied-piping of X) is the unmarked pied-piping operation, since it is minimal (i.e., drags along the least material). The question then arises how to derive phrasal movement (pied-piping of XP—e.g., a *wh*-phrase) as an option of grammar. Donati proposes to relate the choice between head movement and phrasal movement to the phrase structure status of heads and phrases, in combination with the Condition on Uniformity of Chains (Chomsky 1995) and an economy condition on Merge Copy. An implication of this approach is that there is no principled reason for *wh*-movement to be restricted to phrasal constituents (e.g., a *wh*-phrase) in any context. To illustrate this point, Donati discusses two cases of *wh*-head movement: free relatives and comparatives.

Watanabe's chapter explores the existence of an uninterpretable formal feature whose role is to mark a constituent that must be pied-piped. This so-called pied-piper feature is needed to solve a problem that arises under a movement theory in which movement consists of three (successive) suboperations: Agree, pied-piping, and Merge. More specifically, if Agree renders the goal inactive, then both the goal category and some category that contains the goal become inaccessible for further computation in narrow syntax. Obviously, pied-piping cannot be ordered before Agree, because Agree must first locate the goal. Watanabe argues that the introduction of the pied-piper feature solves this problem: the pied-piper feature marks the category to be copied by pied-piping. He presents different types of empirical evidence in support of this feature: (1) the change of (Old) Japanese, a language with overt phrasal *wh*-movement and concomitant marking of the *wh*-phrase by the particle *ka*, into a *wh*-in-situ language without *ka*-marking on the *wh*-phrase; (2) the appearance of a focus particle on an overtly moved *wh*-phrase in languages with optional *wh*-movement (e.g., Kikuyu).

Agbayani's chapter discusses the nature of specifiers formed by movement by looking in particular at the peculiar behavior of *wh*-subjects in English, which have been argued to not undergo movement (George 1980; Chomsky 1986a), and which seem to display paradoxical behavior with respect to the *wh*-diagnostics of OWM (e.g., they obey Subjacency but apparently do not leave a gap). Agbayani offers an alternative perspective on the requirement that a specifier be created by overt (*wh*-)movement (i.e., the Extended Projection Principle), by closely examining the behavior of *wh*-elements as specifiers. In line with Chomsky (1995), Agbayani proposes that if a feature is extracted out of a category in overt syntax for checking, then PF requirements force subsequent pied-piping of the category, unless economy blocks the pied-piping, as he argues is the case with *wh*-subjects in English. He argues that such an analysis of specifier formation via movement is expressed naturally in a "two-chain" theory where bare feature movement (Move F) and subsequent category pied-piping take place in overt syntax. Evidence for such an approach to movement comes from the peculiar behavior of *wh*-subjects in English under the Vacuous Movement Hypothesis.

1.2.2 Ā-Chains and the Copy Theory

Rizzi's chapter starts by discussing the functional motivations of movement (i.e., movement as a last resort) and then connects this level of analysis to the study of the form of chains—in particular, Ā-chains—and

the formal principles that constrain possible chain configurations. Rizzi proposes that Ā-chains connect two semantic interface positions: an s-selection position and a criterial position, which expresses some scope-discourse property. He further tries to determine whether and under what conditions other positions are allowed to occur in well-formed chains, besides these semantic interface positions. He provides evidence for a principle of Criterial Freezing: a phrase meeting a criterion is frozen in place, and its chain cannot extend further. Rizzi further investigates subject chains, especially the EPP property (the obligatory appearance of subjects in clauses) and the Empty Category Principle property (the impossibility of subject extraction). He reduces the EPP to a particular criterion, the Subject Criterion, and proposes that the immobility of subjects can be analyzed as a consequence of Criterial Freezing.

In her chapter, Yang argues that two apparently related constructions, relative clauses and questions, do not necessarily involve the same movement operation. She argues that relative clauses in both Hindi and Punjabi involve successive-cyclic Ā-movement, while questions in both languages involve scrambling. Her argument is based on the observation that in Punjabi, an intermediate copy of a relative phrase can be overtly realized in Spec,CP. Furthermore, more than one copy in a relative movement chain can be pronounced. She argues that the multiple realization of relative phrases in a movement chain can only be accounted for under a theory of multiple Spell-Out (such as that proposed in Bobaljik 2002). She further shows that the relevant facts concerning multiple realization fall out from the CP-Phase Constraint, according to which only one copy of a movement chain can be overtly realized in a given CP phase.

Reintges, LeSourd, and Chung begin their chapter by contending that the copy theory of movement allows for the possibility that the lowest copy is pronounced. They argue that certain types of *wh*-in-situ patterns instantiate "hidden" movement configurations that are created by *wh*-movement in overt syntax with subsequent pronunciation of only the lowest copy. Their evidence comes from the phenomenon of *wh*-agreement: internally headed relative clauses in Passamaquoddy, an Eastern Algonquian language, and *wh*-in-situ interrogatives in Coptic Egyptian, an Afroasiatic language spoken in the fourth through the fourteenth centuries AD. Under the assumption that this special *wh*-agreement morphology records the history of *wh*-movement before the derivation is shipped to PF, its occurrence in certain *wh*-in-situ constructions reveals that in these cases as well, movement has taken place in overt syntax. The only difference from overt *wh*-movement is that the lower rather

than the higher copy is pronounced. The authors also show that despite superficial similarities, *wh*-in-situ constructions in Palauan, an Austronesian language, contrast sharply with Passamaquoddy relatives and Coptic *wh*-in-situ interrogatives. While *wh*-agreement is found in Palauan questions formed with overt *wh*-movement, this agreement is not triggered by *wh*-in-situ constructions, which suggests that no narrow syntactic movement is involved in such constructions. The authors propose that in those cases, the scope of the interrogative phrase results from unselective binding.

1.2.3 Cyclicity and Locality

Lasnik's chapter examines the motivations and consequences of different conceptions of the cyclic principle that have appeared in generative syntactic theorizing since the mid-1960s. Lasnik starts with the relation between the cycle and generalized transformations, and with how the latter have been resurrected in minimalism. He then discusses the necessity of the principle of strict cyclicity within minimalism. In particular, he points out that (1) empirical arguments for cyclicity, as Freidin (1978) notes, are based on derivations that can be independently excluded under plausible assumptions; and (2) the theoretical argument based on preservation of existing structure (Chomsky 2000) cannot be sustained under a set-theoretic conception of phrase structure. Lasnik further examines arguments for and against successive cyclicity for A-movement, concluding that A-movement is indeed successive cyclic.

Ishii's chapter investigates the weakening of intervention effects. In particular, he shows that indirect questions do not constitute *wh*-islands for extraction when the following two conditions are met: (1) indirect questions are infinitival or subjunctive, and (2) extracted *wh*-phrases are D-linked. He argues that this hitherto unexplained anomaly concerning the *Wh*-Island Constraint is given a principled minimalist account by an operation of covert restructuring and Chomsky's (2000, 2001, 2004a) Phase Impenetrability Condition (PIC). He shows that contrary to the widespread belief that the *Wh*-Island Constraint can be subsumed under the Defective Intervention Constraint, we still need a traditional Subjacency-type account based on the notion of the phase to fully accommodate the *wh*-island effect.

1.2.4 *Wh*-Constructions

Grohmann's chapter is concerned with monoclausal question constructions from German that involve two *wh*-phrases between which a topical-

ized constituent may or may not be sandwiched. He argues that what may look like a multiple *wh*-question involving a fronted topic is in fact a case of multiple topicalization and does not serve as a proper information question. Grohmann starts by claiming that the so-called intervention effect, also dubbed the "Beck effect," does not exist in German multiple *wh*-questions. That is, any attempt to capture the Beck effect in terms of some notion of intervention undergenerates and consequently fails. Grohmann then develops an alternative that capitalizes on a property other than quantification that illegitimate interveners share: they are all nontopicalizable. Thus, *wh*-movement is permitted only across a fronted topic in German. Building on this topicalizability-based account of intervention effects, Grohmann proposes that multiple *wh*-questions involving a fronted topic are derived by movement to a left-peripheral topic position of both *wh*-phrases (as well as the intervening topic). In other words, these multiple *wh*-interrogative constructions are actually multiple *wh*-topic constructions. Finally, Grohmann further connects these multiple *wh*-topic constructions to instances of clitic-doubling *wh*-phrases in (colloquial) Bulgarian.

Surányi's chapter deals with multiple *wh*-constructions in Hungarian. Surányi argues that Hungarian exhibits (at least) three syntactic patterns of multiple *wh*-questions, which he relates in a principled way to different focus structures. Modulo distinctions in focus structure, he relates the three multiple *wh*-constructions to three distinct sets of answerhood conditions they are matched with, arguing that multiple (overt or covert) movement to the same projection results in a pair-list interpretation, while otherwise only a single-pair reading is available. In closing, Surányi offers a typological perspective on languages that permit multiple *wh*-fronting and languages that do not. He shows that the account of answerhood conditions he has proposed on the basis of Hungarian can be maintained in the context of a more general typology of interpretations available in multiple *wh*-constructions.

Ko's chapter discusses the structural position of the reason *wh*-adverbial 'why' in three typical *wh*-in-situ languages: Korean, Japanese, and Mandarin Chinese. Ko proposes that in these languages, 'why' is externally merged in Spec,CP as a CP modifier and that this high base-position of 'why' plays a central role in determining its unique syntax in *wh*-in-situ languages. Evidence for base generation in Spec,CP comes from the interaction between 'why' and scope-bearing elements in Korean and Japanese. Additional support comes from acquisition data: children learning Korean make systematic distinctions, signaled by placement,

between the *wh*-expression *way* 'why' and other *wh*-adjuncts such as *eti* 'where'. Ko further explores the implications of the fine structure of CP for the syntax of 'why' in *wh*-in-situ languages. Examining the antisuperiority effect, she argues that there are two distinct C heads in *wh*-in-situ languages for licensing *wh*-interrogatives. In particular, 'why' is licensed by a lower C (C_{Int}), whereas the other *wh*-phrases are licensed by a higher C (C_{Foc}). This approach, in conjunction with other independent properties of *wh*-in-situ languages—in particular, the presence or absence of Ā-scrambling—explains the crosslinguistic variations between Korean and Japanese, on the one hand, and Chinese, on the other hand, regarding multiple *wh*-questions.

1.3 Conclusion

In various respects, Chomsky's paper "On *Wh*-Movement" is a landmark in generative-syntactic theorizing about *wh*-movement. First, it represents a crucial step in the development from a construction-oriented and language-specific approach to human grammar to an approach in terms of general rules and general principles. Second, it illustrates clearly how in-depth linguistic theorizing and detailed empirical analysis of linguistic phenomena in a particular language can go together. Finally, it shows the great benefit practicing syntacticians derive from the availability of good diagnostic tools. In this introduction, we have shown that OWM was also an important starting point for further theorizing on *wh*-movement. Many of the "*wh*-issues" that are central in OWM recur in later conceptions of the theory of grammar. At the same time, it is clear that new thoughts on *wh*-movement are still developing in current syntactic research.

Notes

1. In OWM (p. 73, (3)): "Cycle: transformational rules, e.g., [Move *wh*-phrase and Move NP], meet the condition of the (strict) cycle; the subjacency condition is a property of cyclic rules, i.e., part of the definition of the cycle."

2. In OWM, NP, S, and S′ are taken to be the cyclic nodes (see further discussion in section 1.1.2).

3. As a matter of fact, even the universal principles of grammar that were postulated often had a construction-specific flavor: the Tensed-S Condition, the Specified Subject Condition, and island conditions such as the Complex NP Constraint.

4. A fifth diagnostic that is not on Chomsky's list but is present in the discussion of topicalization and used as a *wh*-diagnostic thereafter is this: "It creates *wh*-islands."

5. As noted by Bresnan (1972), many dialects of American English allow the presence of *wh*-words in comparatives, as in *John is taller than what Mary is*.

6. In later work, *wh*-diagnostics are also used to identify null operator movement. For example, Chomsky (1986a, 55) shows that parasitic gap constructions display island effects, obeying for instance the *Wh*-Island Constraint and the Complex NP Constraint.

7. There is brief mention of getting rid of S′. Also, in the discussion about topicalization S″ is mentioned as a potential cyclic node.

8. As Chomsky stated in a recent interview regarding minimalism, ''The question we're now thinking about is the question 'why?' Why these principles and not some other principles? These 'why' questions, that's the Minimalist Program'' (2004b, 151).

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