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Symmetries in Locality*

1. Introduction

Locality has been a pervasive topic of discussion in the generative literature for a long time. Over and above that, locality passes off as a remarkably successful achievement in syntactic research. It typically denotes the fact that dependencies created over two positions may not involve too long a distance. This is the “locality-qua-upper-bound” condition on dependencies; call this “Standard Locality.” What we will do in the following is subject the formation of dependencies — derived by movement as well as (apparently) construal — to the hypothesis that there is also a locality condition formulated in terms of a “lower bound;” call this “Anti-Locality.”¹ In particular, I will present the *Anti-Locality Hypothesis*, which is exactly that: a hypothesis that explores a reverse locality effect, namely that two positions must not only conform to an upper bound on locality (be not too far apart), but also a lower bound (be not too close) in order to form a legitimate dependency.

As innocent as this hypothesis may sound, it might look crazy, if as potential evidence for the existence of Anti-Locality effects, we consider expressions like (1):

- (1) a. *John likes. / *John or Mary like. / *John and Mary like.
b. *Him softly kissed her. / *Him softly kissed she. / *He softly kissed she.
c. *Who, Mary detests? / *Who, does Mary detest? / *Who does, Mary detest?

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¹ As a notational device, I will capitalize “Standard Locality” and “Anti-Locality” whenever these expressions specifically denote the upper-bound-on-distance and lower-bound-on-distance version of locality, as understood so far. As such, Standard Locality subsumes any favourite account of “classic” locality effects, while Anti-Locality offers a novel way of looking at distance.

But this is indeed what we will do. I will start off with a brief overview of Standard Locality in section 2. Here I will present the basic facts of dependency formation pertaining to measurements of “distance” in theoretical frameworks past and present. We then discuss how this can be applied to XP-movement (A'- and A-dependencies), head movement, and (apparent) non-movement dependencies. Section 3 lays out the Anti-Locality Hypothesis — the initial question whether movement must cover a minimum distance and supporting data, how to formulate such a lower-bound condition, and how to compute the measurement for minimum distance. In section 4 we will discuss the arising question: if there is both an upper and a lower bound on locality, are we dealing with an asymmetric notion of locality or can we find symmetries in the formation of dependencies? As the title suggests, we will find an answer in favour of the latter. Section 5 concludes the paper.

2. Locality Conditions on Dependency Formation

In this section we will briefly go over Standard Locality effects and accounts. The purpose of this section is two-fold. First, we need to smooth the way for the discussion of a reverse or anti-local condition on the distance between two positions in a given dependency; to do that we need to know what we mean by Standard Locality. Second, as we're aiming to unify upper-bound and lower-bound versions of locality conditions on the computation, a common ground is important.

2.1. A Brief History of Locality

In early generative approaches, locality effects were basically subsumed under more general discussions of cyclicity and the (strictly) local application of transformations. *Standard Theory* (Chomsky 1965) assumed an ordering of transformational rules (which applied to a lower S, the sentence domain, before applying to a higher S) and introduced the notion of a cyclic node (which was S, and S only). Ordered Singulary Transformations replaced Generalized Transformations (from Chomsky 1955). The cyclic application of ordered rules within S accounted for the well-formedness of (2a) and the ill-formedness of (2b): ordering passive and deletion rules, for example, within each S — first the lower S2, then the higher S1 — *John* ends up in its surface position (from its base-generated one via intermediate ones, as indicated by ‘__’); in order to make *Mary* and *her* coreferent, however, a rule would have to evoked that applies to S2 only (see e.g. Jacobs & Rosenbaum 1968).

- (2) a. [_{S1} John was believed __ [_{S2} __ to have been hurt __]]
 b. [_{S1} Mary_i tried [_{S2} Ø to hurt her_{*i/k}]]

But at this point, the theory had little to say about the long movement sketched in (3), as S' hasn't yet entered the equation. Thus, (3) should be perfectly well-formed, with the Wh-expression undergoing long movement from within S3 to (the only) S':

- (3) [_{S'} who did [_{S1} you say [_{S2} John thinks [_{S3} Mary likes __]]]]

A crucial development of this era is signified by Ross's (1967) important "discovery" of islands, domains immune to extraction. In the wake of this work, *Extended Standard Theory* (Chomsky 1973) established NP as a cyclic node as well. Rule ordering was still understood to apply to a lower S before applying to a higher S; moreover, rules applying to a higher S may not affect a lower S (only) — the Strict Cycle Condition. Locality was first mentioned as following from Subjacency, the condition that movement may not cross more than one cyclic node. These two conditions enforce successive-cyclic movement and ban rule application at the time-step of a given domain A (S or NP) to or within a domain B, lower than A.

Locality proper played a more central role in *Government and Binding Theory* (GB; cf. Chomsky 1981, 1986a, 1986b). The *Barriers*-version in particular treated certain projections as barriers to extraction: IP and VP, as well as subject NPs and adjuncts. Locality was restated as the restriction that movement cannot cross more than one barrier. (Note that through the Subjacency Condition, an additional rule was added to the theory, and cyclicity can only be enforced by further assumption; but see Freidin 1978 for early attempts to derive its effects and Freidin 1999 for historical perspective.) One consequence is that clause-internal Wh-movement had to adjoin to VP to save Locality-qua-Subjacency (adapted from Chomsky 1986a:29):

(4) [_{CP} who did [_{IP} John I [_{VP} ___ [_{VP} see ___]]]]

Rizzi (1990) generalized locality through *Relativized Minimality* in terms of a potential α -governor (ranging over head and antecedent government) if the governee is not c-commanded by an intervening potential α -governor. Relativized Minimality is one condition that applies equally well to A-, A'- and head-dependencies with less machinery than the *Barriers*-theory (which needs at least two, if not three, concepts: "L-marking," "barriers by inheritance" and the "Minimality Condition"). And rather than complicating the computation, Relativized Minimality only considers *potential* intervenors — an A-specifier is never able to intervene in an A'-chain and so on.

Within the *Minimalist Program* (MP; adopted here), the generalized locality condition Relativized Minimality typically reduces to a condition on movement or attraction (of features and/or phrases). Among the potential candidates are the Shortest Move Requirement (Chomsky 1993) or the Minimal Link Condition (Chomsky 1995). (But see the discussion of the apparent conflict between "shortest move" vs. "fewest steps" in Zwart 1996.) Alternatively, any other formulation specified to the displacement of features, such as Attract (Chomsky 1995) and/or Agree (Chomsky 1998) would perhaps do. In short, Standard Locality is supposedly captured by some condition on the computation that puts an upper bound on the distance between two positions, bars skipping potential landing sites, and prohibits movement over potential intervenors. Moreover, displacement in general is subject to the Extension Condition (Chomsky 1993), the requirement that each application of (the revived) Generalized Transformations and Move (qua Copy plus Merge) extend the phrase marker — basically replacing a separate condition for the cycle. In (5), then, *John* cannot skip an intermediate position, into which *it* would get inserted later, as sketched in (6) below ('#' indicating an illegitimate step in the derivation).

- (5) *John appears it is likely to kiss Mary.
- (6) a. [appears [is likely [John to kiss Mary]]]
 b. [John appears [is likely [__ to kiss Mary]]]
 c. #[John appears [it is likely [__ to kiss Mary]]]

The gist of this brief overview is that locality effects on dependency formation have been discussed for a long time, in any generative framework. In addition, such discussion has always played a central role for the (re)formulation of the theoretical apparatus. I'll illustrate Standard Locality a bit more and then turn to Anti-Locality.

2.2. Locality and Movement Dependencies

A classic class of cases that illustrate the role of locality conditions, understood as an upper bound on the distance between two positions in a given dependency, is captured by the GB-term “A'-dependency” — that type of dependency that involves at least one A'-position: either through movement from an A- to an A'-position (clause-internal) or from one A'-position to another A'-position (across clauses).²

With the repertoire of rules and conditions briefly laid out above, there are a number of ways to account for the ungrammaticality (or marginality, as it “only” violates Subadjacency) of extracting out of Wh-islands, for example:

- (7) a. ??What does John wonder whether Mary gave to John?
 b. ??What does John wonder when Mary gave to John?
 c. ??What does John wonder why Mary gave to John?
 d. ??What does John wonder who Mary gave to?

Wh-movement out of an embedded interrogative is illicit, regardless whether the embedded clause is introduced by an interrogative conjunction or another Wh-phrase proper. In the latter case, it doesn't matter whether the Wh-phrase is a referential adjunct, a true adjunct or an interrogative argument. The Strict Cycle Condition rules out any derivation under which the matrix interrogative is formed first by fronting *what* — regardless whether this is done successive-cyclically (via movement through the embedded Comp-position) or in one fell swoop — as the embedded interrogative could then only be created through later insertion of *whether* (or insertion/movement of *when*, *why* and *who*, respectively). (Arguably, such an approach is also ruled out by Trace Theory; cf. Freidin 1978.) This option for (7d) is shown in (8), where, from now on, copies left behind by movement appear in strikethrough:

- (8) a. [_{IP1} John wonder [_{CP2} [_{IP2} Mary gave what to who]]
 b. [_{IP1} John wonder [_{CP2} what [_{IP2} Mary gave ~~what~~ to who]]
 c. [_{CP1} what does [_{IP1} John wonder [_{CP2} ~~what~~ [_{IP2} Mary gave ~~what~~ to who]]]
 d. #[_{CP1} what does [_{IP1} John wonder [_{CP2} who ~~what~~ [_{IP2} Mary gave ~~what~~ to ~~who~~]]]

² In GB, an A'-position is defined negatively, i.e. as a non-A(argument)-position. A'-positions typically involve Comp or (the specifier of) CP. MP dispenses with the fundamental distinction of A- and A'-positions, but their different behaviour still needs to be captured.

Likewise, any technical implementation of Relativized Minimality rules out the creation of the embedded interrogative first (by inserting or moving *whether*, *when*, *why* or *how*) followed by moving *what* to matrix Comp — again, regardless whether this is movement applies successive-cyclically (9c) or in one fell swoop (9c’):

- (9) a. [_{IP1} John wonder [_{CP2} [_{IP2} Mary gave what to who]]
 b. [_{IP1} John wonder [_{CP2} who [_{IP2} Mary gave what to ~~wh~~]]
 c. #_{[CP1} what does [_{IP1} John wonder [_{CP2} ~~what~~ who [_{IP2} Mary gave ~~what~~ to ~~wh~~]]
 c’.#_{[CP1} what does [_{IP1} John wonder [_{CP2} who [_{IP2} Mary gave ~~what~~ to ~~wh~~]]

Under either alternative, the one-fell-swoop approach is ruled out by any account of Standard Locality, viz. an upper bound on distance: the Wh-phrase would have to skip a potential landing site, move across a potential intervenor, or plainly, cross a distance between the base-generated position and the final landing site that is too far. (Many more examples follow basically the same line of explanation; among the rich literature on locality and A’-movement, see especially Hornstein 1995, Pesetsky 2000, Sabel 2001 for recent discussion as well as the sources cited above.)

Something similar can be said about A-dependencies. For this class, the classic case is arguably exemplified by (subject-to-subject) raising of the sort illustrated by the contrast between (10) and (11):

- (10) a. John is likely to appear to like Mary.
 b. John seems to have been believed to be dead.
- (11) a. *John is likely it appears to like Mary.
 b. *It seems John to have been believed to be dead.

The subject of an embedded infinitival clause may, in fact must, raise to a finite Infl-position (SpecIP or, as I assume throughout, SpecTP) — the canonical subject position of a finite clause (at least in order to receive/check nominative case). The relevant matrix environment for this movement is the finite Infl (or IP/TP) of raising predicates, a class which includes passivized Exceptional Case-marking (ECM-) verbs. Alternatively, the subject may stop in an intermediate position, if an expletive is inserted into the subject position of the raising verb in the matrix clause:

- (12) a. It is likely that John appears to like Mary.
 b. It seems that John was believed to be dead.

What (11) shows us is that this raising may not take place if the expletive appears in an intermediate subject position or if the intermediate position is not finite. (The latter case, (11b), just illustrates that it is indeed the subject position of finite Infl that is targeted, regardless when and where the expletive appears.) No matter in which order we apply the derivational steps to derive the ungrammatical case, the same result obtains as above: the distance between the landing site in the matrix clause and the most deeply embedded launching site is too far.

These cases, and numerous others, are well known, hence we can dispense with further illustration or discussion. Let us turn briefly to another case usually subsumed under Standard Locality, head movement. The generalization that head movement may not skip other heads along the way is thus just another application of Standard Locality (the Head Movement Constraint; cf. Travis 1984): the distance between two positions may not be too far. What differs in each of these cases (A-, A'- and X⁰-movement) is the measurement of distance (or, in other words, what counts as an intervenor). Without further discussion at this point, Standard Locality accounts for the following (but see Lasnik 1995a for an alternative):

- (13) You will be home tonight.
- (14) a. Will you be home tonight?
b. *Be you will home tonight?

As we will see shortly, head movement will not concern us any further. Our discussion of Anti-Locality will reveal that X⁰- and XP-movement differ in one crucial aspect, namely in the former being adjunction and the latter substitution. This will give us the desired result that head movement always conforms to the formal condition on Anti-Locality to be formulated in section 3, while something additional needs to be said for XP-movement. But first things first. To wrap up our brief history of Standard Locality, let us consider one more type of dependency which will be relevant for the subsequent discussion.

2.3. Locality and Non-Movement Dependencies

Some dependencies between two positions do not involve movement — at least not according to standard views. I will briefly present two such cases relevant for the Anti-Locality Hypothesis, which we can then turn to in the next section.

One classic non-movement dependency concerns Binding Theory, which in GB was assumed to be the module of the grammar responsible for the local binding of anaphoric expressions (Condition A), the local freedom of pronouns (Condition B) and the global freedom of R-expressions (Condition C). Relevant in the present context is Condition A, a tiny sample of which is illustrated in (15) and (16) — where coindexation indicates binding, following standard notation:

- (15) a. John_i likes himself_i.
b. Bill_k thinks (that) John_i likes himself_{i/*k}.
c. *John_i thinks (that) Mary likes himself_i.
- (16) a. John_i expects himself_i to win the race.
b. Bill_k thinks (that) John_i expects himself_{i/*k} to win the race.
c. *John_i thinks (that) Mary expects himself_i to win the race.

The fact that *himself* needs to be bound (c-commanded by its antecedent) locally allows us to assume a dependency between two positions, that of the anaphor and

that of its antecedent. In most approaches, this dependency is not one derived by movement, but by construal.³ Nevertheless, in languages like English, this dependency is subject to Standard Locality conditions, just as the examples we have seen above: the distance between the antecedent- and the anaphor-position may not be too far, and there may be no intervenors along the way.

Another classic GB-module is Control Theory. Just as anaphors need to be licensed (locally), a class of unpronounced elements, “PRO,” must be controlled locally — again, further details and discussion aside. The relationship between controller and controllee is typically assumed to be one of construal:

- (17) a. John_i wants PRO_i to kiss Mary.
 b. John_i wants Peter_k PRO_{*i/k} to kiss Mary.
- (18) a. John_i left Mary_k without PRO_{i/*k} saying good-bye.
 b. John_i seems to have left Mary_k without PRO_{i/*k} saying good-bye.
 b. John_i told Bill_k to leave Mary without PRO_{*i/k} saying good-bye.

Just as I wasn’t concerned with the specifics of islands or A’-movement, further issues pertaining to A- and head/X⁰-movement, or detailed licensing of binding relations, I am not interested in pursuing control any further. The intention of this section was simply to “show” (building on a very rich body of literature that goes back several decades) that Standard Locality conditions take us a long way. Even without discussing specific formulation or technical implementation in a particular framework, Standard Locality can be characterized by a ban on the formation of dependencies between two positions which are too far apart from each other. This ban can be applied to all types of dependencies — created by movement or not, involving A- or A’-positions or even two heads.

What we will do in the following is ask whether any dependency must not only conform to an upper bound, but also a lower bound on the distance between two positions. To my knowledge, this question has not been asked before, and as we will see there might be a good reason. However, exploring the central desideratum of any minimalist approach to linguistic theory to its fullest, we face a situation in which this question is anything but senseless. What I have in mind is the guiding objective that all conditions on the computation (including the formation of dependencies, whether created by movement or construal) follow from Bare Output Conditions. A strict adherence to this objective should force us to reconsider, if not drop, certain well-established principles, conditions, axioms and so on from earlier frameworks, especially from GB, and derive their effects in some other way.

In short, I will provide the background that allows us to frame the question whether Anti-Locality effects are real and pursue one condition that both explains such Anti-Locality effects and follows from Bare Output Conditions.

³ But see the discussion in section 3. I will not discuss the alternative view that the reflexive moves to its antecedent at LF; see Heim, Lasnik & May (1991) building on Lebeaux (1983). (See also the discussion of reflexive “LF-cliticization” in Chomsky 1993 and Chomsky & Lasnik 1993.)

3. The Anti-Locality Hypothesis

This brief overview of how Standard Locality restricts the formation of dependencies in terms of an upper bound on distance contains nothing new; we can thus turn to a more novel issue. One question that has not yet been asked is whether there is the opposite restriction to (the locality of) dependency formation also. We could thus ask whether there is a lower bound on distance, banning movement that is too close. The following discussion suggests that such a restriction does indeed exist; in the absence of a more appropriate term, I dub it *Anti-Locality*.

3.1. A First Glance

What could a lower bound on the distance between two positions within a given dependency mean? To illustrate, consider (19), repeated from (1a), for starters:

- (19) a. *John likes.
 b. *John or Mary like.
 c. *John and Mary like.

Expressions such as (19), and many more, are all ungrammatical. To investigate the relevance of these examples further, we would first have to consider what they could mean. It is not enough to say (the obvious) that the predicate in these cases is a transitive verb and the internal argument has been left out. Such arguments may well be left out with some transitive verbs. Take (20), where the implied internal argument is “someone/something or other,” often recoverable from the discourse:

- (20) a. John eats.
 b. John kissed.

However, if we replace the subject of (20b) by *John and Mary* (analogous to (19c)), the preferred reading that immediately becomes available would probably be *John and Mary kissed each other*. In this context, we might wonder why (19b) could not mean the same (either used reciprocally or reflexively). More generally, then, why can't (19a) be used to express a similar reading, one of reflexivity? This said, consider (21a-c) as potential interpretations of the hypothetical cases in (19a-c):

- (21) a. John likes himself.
 b. John or Mary like themselves.
 b'. John and Mary like each other.

One answer would be to say “it just doesn't.” What is the relevance to locality, or *Anti-Locality*, the (by now perhaps disinterested) reader may ask? Well, one could in principle envision a derivational history for (19) as sketched in (22): the surface subject (thematically speaking, “agent”) is inserted in the derivation as the “theme” and undergoes movement to the agent-position (before subsequently checking nominative case and agreement in the canonical subject position, not indicated here,

as we concentrate on the relevant part of the derivation, internal to the VP-shell or, in more current terminology, the light verb projection vP).⁴

- (22) a. #_{[_{vP} John v [_{vP} likes ~~John~~]]}
- b. #_{[_{vP} John or Mary v [_{vP} like ~~John and Mary~~]]}
- c. #_{[_{vP} John and Mary v [_{vP} like ~~John and Mary~~]]}

As the hash marks indicate, these hypothetical derivations are not available to the computation and we might wonder why they shouldn't be.

GB had, of course, a very simple and elegant answer. Theta Theory, another module within the language faculty, is responsible for the discharge and assignment of thematic roles, or more generally, the licensing of thematic relations altogether. We can thus name the Theta Criterion (Freidin 1978, Chomsky 1981) as the principle of the grammar that rules out this kind of derivation: all arguments must be assigned one and only one thematic role. If the theme argument moved to the agent position, this argument would end up with two thematic roles.

In MP, however, this retreat is not as clear anymore. The Theta Criterion applies at D-structure, the GB-level of representation that interfaces with interpretation, one of the four levels of representations the theory made available (alongside S-structure, PF and LF). MP assumes only two such levels (or “components” in some recent approaches, as we will soon discuss): LF, sending the relevant information to the conceptual-intentional interface and PF, feeding the articulatory-perceptual interface (Chomsky 1993:169). The levels of D- and S-structure are hence dispensed with, on the grounds of “virtual conceptual necessity.”

Moreover, the entire modular approach to grammar, well developed in GB, should give way to a simpler, less constrained view, if we take the minimalist desideratum seriously that the inventory of operations, conditions, tools and the like is regulated purely by “(virtual) conceptual necessity.” This is basically the implementation of Ockham's razor — “less is more” — applied conceptually on many fronts. Concerning modules, there is no minimalist denial that the language faculty constitutes one particular module in the mind/brain. To be sure, there is no “official” denial that this language faculty be made up or not of further “internal” modules either, as Hornstein (2001a:215) notes. However, he continues, this claim, deeply embodied within GB, “has been neither endorsed nor repudiated by the Minimalist Program.” Applying the less-is-better-than-more strategy to other areas could be taken to suggest that we should dispense holding fast to such “internal” modularity. In the absence of empirical evidence, then, if we can dispense with the Theta Module, the Binding Module, the Control Module and so forth, yet explain the relevant facts in some other way, we would come out with a theory that doesn't need to postulate additional machinery. The only way to test this is to dispense with such machinery and strive for module-independent mechanisms.

⁴ For simplicity's sake, I abstract away from finer thematic differentiation and collectively call the thematic subject “agent,” the thematic direct object “theme,” and the thematic indirect object “goal.” This said, I will also regularly refer to the grammatical functions simply as “subject,” “(direct) object,” and “indirect object” — without the specification “grammatical” or “surface.”

One consequence of this line of reasoning is that nothing a priori should rule out movement into thematic positions, as formerly ensured by the Theta Criterion (viz. Theta Theory). In the “early” era of minimalism, Bošković (1994) already suggested that thematic roles should be considered formal features just as anything else that drives the computation (alongside Case- and agreement-features, Wh- and focus-features etc.). This idea was picked up by Lasnik (1995c), Bošković & Takahashi (1998), and Hornstein (2001a), among others (for a different perspective, yet in the same spirit, see also Manzini & Roussou 2000). In other words, if every operation in the course of the derivation — Move as well as Merge — is motivated by the need to check a formal feature, why not derive the effects of Theta Theory by the need to check thematic features? A simple by-product of such an approach is that movement into theta-positions should be possible, if this movement checks a feature. In the bigger picture, this approach allows us to motivate not only the operation Move, but also the operation Merge.⁵ I thus assume in general, that the theory of grammar is not modular in the GB-sense and in particular, that the Theta Criterion does not exist as a condition on the computation.

What “(virtual) conceptual necessity” dictates is that all conditions on the computation follow from Bare Output Conditions. These are conditions that relate directly to the conceptual-intentional and articulatory-perceptual interfaces (see Chomsky 1995:221ff.). With the elimination of D- and S-structure as “levels of representation,” PF and LF are the sole interface levels (or, less representationally, components). As such, all D-structure (and S-structure) remnants in the theory should be dispensed with. One plausible candidate is certainly the principle of Full Interpretation, a condition that the conceptual-intentional interface imposes on LF; on the PF-side, Kayne’s (1994) Linear Correspondence Axiom (LCA) might be argued to be an appropriate Bare Output Condition, at least in the sense interpreted by Chomsky (1995) and also Nunes (1995, 1999), in the sense that “expressions [need to] be pronounced in a particular serial order” (Hornstein 2001a:15). Again, the Theta Criterion does not qualify — for by now obvious reasons.⁶

Returning to (22), we now have no straightforward answer why the relevant step in the derivation depicted should be ruled out. After all, *John* would move in (22a), for example, to check an additional θ -feature. The scholars just mentioned employ multiple θ -roles in a number of cases (scrambling, control, parasitic gaps etc.), and we will return to some later on. For now I want to bring home that if we accept the possibility of moving into θ -positions, it is not at all clear why the derivations shown in (22) should all be ill-formed. Naturally, if this were the only case in the grammar where such an obvious “close” derivational relation holds between two positions, we might want to look deeper into the existence of the Theta Criterion, but as we will see, case after case shows a very similar pattern, namely that two positions cannot be too close to each other to form a legitimate dependency.

⁵ On the role of Merge and Move with respect to one being “simpler” than the other or being more economical in any obvious sense, see Castillo, Drury & Grohmann (1999), for example.

⁶ This still holds, even if we moved the application of the Theta Criterion to LF: Full Interpretation has basically the same effect, ruling out derivations where unchecked features would survive the interface(s). Applying Ockham’s razor again, the latter wins because it is less specific.

3.2. Anti-Locality

To come back to our discussion of (Anti-)Locality, then, the hypothetical derivational history that one might consider to underlie the equally ill-formed expressions in (19), provided in (22), does not seem to exist. The explanation that I am proposing why this should be so is that the illegitimacy of (19) derives from a principled condition that bars the type of movement indicated in (22) as part of the Anti-Locality Hypothesis, intuitively formulated as follows:

- (23) *Anti-Locality Hypothesis*
 Movement must not be too local.

What I want to do next is to show first that (23) can be applied to a wider range of cases than those above and second, that it can be defined by a single condition that follows from Bare Output Conditions. Such a condition would not be part of an exuberant array of principles, filters, criteria, conditions, and assumptions on the grammar (nor on the computation). Rather, I will suggest a single condition on the computation that interacts with the derivation of a linguistic expression — if we are willing to take a slightly different view on the composition of the clause. We will soon see how a tripartition of the clause structure of the sort I am endorsing is conceptually motivated as well as empirically supported, and lends itself naturally to a highly derivational view of the computation, in which the interfaces are fed cyclically, through multiple Spell Out at well-defined points of the derivation.

But before we get to that point, let us consider other cases that illustrate what a formulation of Anti-Locality could further capture. Take (24), repeated from (1b):

- (24) a. *Him softly kissed her.
 b. *Him softly kissed she.
 c. *He softly kissed she.

These expressions are ungrammatical, in fact equally as ill-formed as those in (19). Again, we need to first ask what (24a-c) could (be intended to) mean before we can consider hypothetical derivational steps that need to be ruled out. In the context of Standard Locality, such examples are typically discussed in graduate syntax classes to illustrate “equidistance” (Chomsky 1993, 1995): the agent cannot move to the object position to check accusative, the theme cannot move to the subject position to check nominative, and neither version can mean *He softly kissed her*. (See fn. 4 for the convention on thematic and grammatical functions.) This is not what (24) is supposed to mean here; rather, regard these expressions as illegitimate versions of *He softly kissed her* — resulting from any of the hypothetical derivations in (25) and similar ones:

- (25) a. #_{[TP him T [_{Agrop} him AgrO [_{vP} softly [_{vP} him v [_{VP} kissed her]]]]]}
- b. #_{[TP (she) him T [_{Agrop} (she) him AgrO [_{vP} softly [_{vP} him v [_{VP} kissed she]]]]]}
- c. #_{[TP (she) he T [_{Agrop} (she) he AgrO [_{vP} softly [_{vP} he v [_{VP} kissed she/her]]]]]}

In plain English, why can't the agent move to the object position and check accusative, then move to the subject position to check nominative, and come out with accusative case, as in (25a) or (25b)?⁷ (Let's take SpecAgrOP to be the object and SpecTP the subject position; the adverb is added to indicate the *v*P-boundary and not confuse issues with a potentially raised verb.) The theme would either receive default case or also move to the object position, at LF, and check accusative (or even to the subject position for nominative), as in (25b) or (25c). Regarding "default case" — whatever it is (such as the "citation form;" see Etxepare & Grohmann 2001 or, on a more critical note, Schütze 1999) — accusative seems to be an appropriate choice for English, judging from other instances, where Case arguably isn't checked "as usual" (e.g. hanging topics). But this should not concern us. The relevant derivational step simply is not possible, neither with *she* nor with *her* as the object. (And neither can the agent move to both object- and subject-position, and still come out with nominative case-marking, as in (25c).)

Again, GB has a straightforward account. A further module of the grammar is Case Theory, and among other things, some version of the Case Filter (originally formulated in Vergnaud 1982), akin to the Theta Criterion, could be evoked to rule out multiple assignment of structural case (or Case). NPs must bear Case, but may bear only one. If movement to both the object and the subject position of one NP is followed by Case-assignment in each instance, the Case Filter would be violated.

In MP multiple Case-checking is banned in pretty much the same manner. The requirement that all NPs be Case-marked, even if this marking is not pronounced, is formulated in terms of Checking Theory: all Case-features must be checked. This checking must take place overtly (if strong) or by LF (if weak), and as all Case-features are uninterpretable, no unchecked feature may reach the interfaces. Under this story something additional needs to be said for the unavailability of default case for the theme/object. We could envision the requirement that all NPs bear Case-features and if technically possible, these must be checked; if accusative is checked in some AgrO-position, hanging topics could not technically check Case, but the theme/object element could — if the agent/subject doesn't move there first. (And if it does, the usual locality requirements apply; see Chomsky 1993, 1995). Or we give up the idea of default case altogether (see Schütze 1999 for a principled account) — and are still left without a satisfactory explanation.

Given the skeptical view of the modular structure of the GB-grammar mentioned above and the quest for as few additional assumptions within MP, is there another way of ruling out the hypothetical derivations in (25)?

⁷ In the face of the rather unclear (and certainly problematic) status of head movement in MP, particularly the question of verb "movement" (if this is the right term), I refrain from indicating verb positions wherever possible. In particular, I don't indicate potential traces or even copies of "displaced" verbs (though see the brief discussion below). In recent work, Chomsky (1995, 1998, 1999, 2001) suggests that head movement is a "PF-phenomenon" — of whichever order or form (such as a "low-level PF-reordering," offered by Stjepanović 1998; see also Boeckx & Stjepanović 2001, Bošković 2001). Bobaljik & Brown (1997) offer a way out of the dilemma that head movement poses with respect to the Extension Condition in terms of "interarboreal movement" (related to "sideways movement" applying to XPs, proposed in Nunes 1995).

If Anti-Locality is, as understood at this point (viz. (23)), an intuitive requirement that movement cross a minimum distance, the structures in (25) are all of a sudden very similar to those in (22): no argument can move from one theta- to another theta- or from one Case- to another Case-position.

Such a conclusion is corroborated by another type of ill-formed expressions:

- (26) a. *Who, Mary detests?
 b. *Who, does Mary detest?
 c. *Who does, Mary detest?

These examples, repeated from (1c), are just as bad as the previous ones we've seen. The intended meaning is facilitated by the comma, indicating an intonational pause of the type we get in topicalization-constructions. Thus, what we see here is that Wh-expressions do not move to check their Wh-feature and then topicalize, or vice versa. Consider some hypothetical derivations for (26) in (27), where Foc(us)P is the locus of Wh-checking and Top(ic)P the landing site for topics (advocated by Rizzi 1997 and many others; alternatively, replace them by recursive CPs):

- (27) a. #_[TopP] who Top _[FocP] ~~who~~ Foc _[TP] Mary detests ... (~~who~~)
 b. #_[TopP] who Top _[FocP] ~~who~~ does-Foc _[TP] Mary detest... (~~who~~)
 c. #_[FocP] who does-Foc _[TopP] ~~who~~ Top _[TP] Mary detest... (~~who~~)

All derivations sketched here need to account for two properties implied by (26): (i) they contain an interrogative Wh-phrase that needs to be licensed and (ii) this Wh-phrase also functions as a topic. we take (i) to be licensed syntactically by checking [Wh], (ii) by checking [Top], in their own (functional) projections within the Comp-system (a possibly finer articulated CP à la Rizzi). What (27) shows is that no single element may move to both positions in the course of the derivation, regardless whether TopP dominates FocP in English (as in (27a-b)) or vice versa (cf. (27c)) and whether/where *do*-support takes place.⁸

Yet again, GB has a story to tell (and possibly more than one). Rather than appealing to yet another “internal” module, the presumably most straightforward explanation would be in terms of Affect Criteria (cf. Brody 1990, Rizzi 1991, Haegeman 1991, 1995, Haegeman & Zanuttini 1991; see also the recent discussion in Puskás 2000) — operators must be licensed in a unique constellation, similar to the Theta Criterion (but differing in the strict specifier-head configuration and most

⁸ Please bear in mind that these expressions are simply out, hence a “grammatical sounding” version is hard to concoct. A perhaps clearer example comes from Epstein (1992:247), who discusses the illegitimacy of topicalizing Wh-elements in embedded contexts:

- (i) *Who said that who John likes?

Epstein needs to assume Lasnik & Saito's (1984) filter, that “[i]n LF representation each Wh-phrase must occupy a [+Wh] Comp” (Epstein 1992:236). This filter, combined with an Economy-approach, ensures that a derivation which overtly topicalizes a Wh-phrase is more costly than one that Wh-moves the interrogative at LF. Thanks to Joachim Sabel for reminding me of this article.

likely also in that they hold at S-structure). The Wh- (or Focus-) Criterion forces Wh- (focussed) elements to be in a Spec-Head configuration with a head that bears [Wh] ([Foc]), and as such cannot then move to another position. Alternatively, one could turn to semantic incompatibilities between interrogative/focussed constituents (carrying “new information”) and topicalized ones (“old information”). Yet another avenue would be to evoke the Principle of Unambiguous Binding (Müller & Sternefeld 1993), banning movement from one A'- to another A'-position (but see Rizzi 2000, among others, who refines this categorical ban).

An MP-line is not immediately obvious; certain is that something in addition to the common constraints on the operation Move must be said. The semantic incompatibility might be a reasonable direction to take, given that all features must be checked by LF, the level of interpretation, where such a clash in information content might raise some eyebrows. It is safe to follow Lasnik & Uriagereka's (1988:156) contention that “[t]he descriptive generalization seems to be that a Wh-phrase cannot undergo Topicalization; but why that should be remains unclear.”

Let's sum up what the concocted data and hypothetical derivations show us. The structures considered in this section share one property: all indicated movement steps involve two closely related positions. The Anti-Locality Hypothesis of (23), which I'm going to develop next, will take the similarity of the two “closely related positions” in each case into consideration and unify the data accordingly.⁹

In the first type of example, (19), there is hypothetical movement from one theta- to another theta-position. The second set of data in (24) suggests that movement from one Case- (or more generally, agreement- or phi-) position to another is prohibited. And the final hypothetical type of derivations in (26) involves movement from one Comp- to another Comp-position, where Comp stands for some discourse notion (topic, focus etc.). Under traditional approaches, both within GB as well as most MP versions, these derivational steps are easily ruled out. The movement underlying (22) violates the Theta Criterion. The Case Filter would account for the illicitness of moving within Infl and check two different Case features, as in (25). Various Affect Criteria could account for the ungrammaticality of (27).

Scrutinizing core minimalist premises, however, this line isn't tenable anymore, or should at least be seriously rethought. Theta Criterion, Case Filter or Affect Criteria cannot follow from Bare Output Conditions on the computation, as these don't directly relate to the two interface systems. Recasting any of these to hold at LF (or PF) wouldn't help much either: each of these conditions is highly specific, regulating on type of feature only, and are thus unlikely candidates for a (virtually) conceptually necessary concept of the grammar. Rather than appealing to additional filters, conditions or principles, we would like to know now whether the structures discussed in this section can be ruled out on independent grounds — or, as we will see, by one general condition on the computation.

⁹ One might hold against this conclusion that there is one type of movement that is quite local, indeed extremely local: head movement (if it exists; cf. fn. 7). Section 3.4 discusses this potential objection at a more convenient point. I will first introduce the condition that captures the Anti-Locality Hypothesis from (23), which will be in terms of a PF-requirement, from which it follows that head movement as standardly construed does not fall under it.

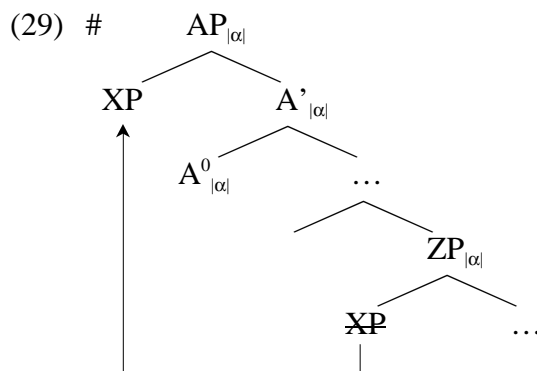
I suggest that an explanation in terms of Anti-Locality offers a positive answer. The next section will pursue a formulation of the Anti-Locality Hypothesis, repeated here from (23) above:

- (28) *Anti-Locality Hypothesis*
 Movement must not be too local.

Let's try and see what we would have to do to formalize the Anti-Locality Hypothesis, what other assumptions we will need, and how natural these are.

3.3. Prolific Domains

Given (19), (24) and (26) — or rather: the accompanying structures in (22), (25) and (27) — above, the arguably most straightforward way to capture “too local” movement would be movement within a specific part of the clause, or a “domain” or sorts, sketched in (29); the “specific part” would correlate to the “closely related positions” noted in the discussion above already (characterized already as theta-, phi- and discourse-positions):



If a ban such as indicated in (29) could really take us further, we will need the means to compute the relevant domain within which movement of an XP, as illustrated in (22), (25) and (27), is ruled out — the “specific part” again. Call this specific part a *Prolific Domain*, characterized along the following lines. The part or domain relevant to compute too local or anti-local movement steps corresponds to a domain of shared contextual information — a Prolific Domain. As generalized in (29), a Prolific Domain may contain thematic context (the “ θ -Domain”), agreement context (the “ ϕ -Domain”), or discourse context (let’s call this the “ ω -Domain”). In this sense, $|\alpha|$ in (29) would correspond to one particular context of $\{|\theta|, |\phi|, |\omega|\}$.

Let’s understand a Prolific Domain (abbreviated, where appropriate, to $\Pi\Delta$ in subsequent structural representations) as follows:

- (30) *Prolific Domain*
 A Prolific Domain is a contextually defined part of the computational system,
 i. which provides the interfaces with the information relevant to the context and
 ii. which consists of internal structure, interacting with derivational operations.

Such a view offers a natural tripartition of the clause, where each part is locally licensed, not too far remote from current thinking (see fn. 10 below):

(31) *Clausal Tripartition*

- ❶ θ -Domain: part of the derivation where theta relations are created
- ❷ ϕ -Domain: part of the derivation where agreement properties are licensed
- ❸ ω -Domain: part of the derivation where discourse information is established

Prolific Domains are “prolific” in the sense that each domain is arguably made up of finer articulated structure. This includes $[_{\theta\Delta} \nu P [VP]]$, or any other understanding of “VP-shells” (cf. Larson 1988, also Hale & Keyser 1993a) for the thematic layer (θ -Domain). The ϕ -Domain is the area of the clause dominated by TP, arguably containing an object position (at least one for accusative checking), call it AgrOP, and whatever else it needs; relevant for us are these two, but more projections are plausible (for voice or aspectual properties, perhaps): $[_{\phi\Delta} TP... [AgrOP...]]$. The finer articulated ω -Domain could look like $[_{\omega\Delta} CP [TopP^* [FocP [TopP^*]]]]$, slightly modifying Rizzi’s (1997) original structure (see Grohmann 1998, 2000a, 2000b). They are “domains” in the usual sense, denoting a particular (and unique) part of the structure characterized by contextual information.¹⁰

Beyond mere (new) terminology, the Anti-Locality Hypothesis offers a novel way to formalize the intuitive tripartition of the clause (see fn. 10). This will be outlined in the next sub-section.

3.4. Domain Exclusivity

If movement within a Prolific Domain is to be ruled out, as the data from sections 3.1 and 3.2 suggest, this ban should follow from Bare Output Conditions, or the argument to simplify our inventory of rules goes down the drain. Let us now focus on such a view of the Anti-Locality Hypothesis.

The one and only condition that I would like to propose, needed to account for all Anti-Locality effects, is the *Condition on Domain Exclusivity* (henceforth, CDE):

(32) *Condition on Domain Exclusivity*

- An object O in a phrase marker must have an exclusive Address Identification AI per Prolific Domain $\Pi\Delta$, unless duplicity yields a drastic effect on the output.
- i. An AI of O in a given $\Pi\Delta$ is an occurrence of O in that $\Pi\Delta$ at LF.
 - ii. A drastic effect on the output is a different realization of O at PF.

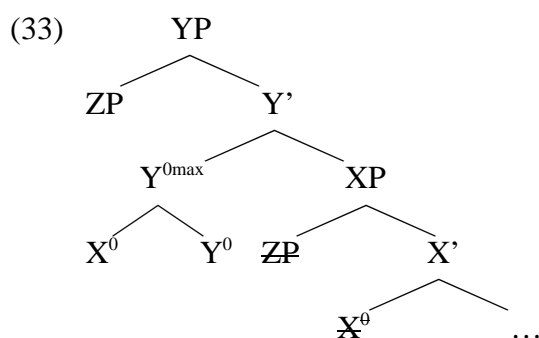
(Grohmann 2000a:61)

¹⁰ Note that this tripartition is nothing new or revolutionary, but rather reminiscent of earlier conceptions of the clause — cf. $[COMP [INFL [VP]]]$ from Chomsky (1986a), for example. The proliferation of functional projections, from the works of, among many others, Pollock (1989), Chomsky (1991), Hale & Keyser (1993a), Baker (1997), Rizzi (1997), Poletto (2000), and the tripartition assumed in Platzack (2001) are also relevant in this context. What is new, however, is the formalized tripartition envisioned here. But especially in the light of the last work cited, the additional assumption that the clause be split into three parts seems quite natural and still in line with our less-is-better-than-more understanding of minimalism.

The main assumption is that LF and PF are accessed cyclically, i.e. in the course of the derivation, very much in the sense of “Multiple Spell Out” proposed by Uriagereka (1995, 1999). (Chomsky 1998, 1999, 2001 entertains now a similar view, although in a different framework, which I will touch upon towards the end; see also Bresnan 1971 for historical precursors.) This would lead us to say that LF and PF are interface *components*, rather than *levels* of representation: PF and LF are not full-blown structures that are accessed after the syntactic computation, but interface with the syntactic component in being accessible up to the point of Spell Out (which will be defined over each Prolific Domain).

We can understand “Address Identification” as “interpretive visibility”: the LF-presence of an object in the phrase marker (from (32i)), coupled with a unique PF-matrix (per (32ii)). As a result, the Anti-Locality Hypothesis (“Don’t move within a Prolific Domain”) can now be recast as a PF-condition — and as such follows, as desired, straight away from Bare Output Conditions — viz. the CDE. The long and short of (32) is that an expression must have one and only one phonological occurrence in a given Prolific Domain, whether it is pronounced or not.

Within the Copy Theory of movement (Chomsky 1993; see e.g. Chomsky 1995, Nunes 1995, Lasnik 1999, Hornstein 2001a for more discussion), multiple occurrences of an object in the phrase marker refer to non-distinct copies of that object: the dependency $D = \{XP, \cancel{XP}\}$ contains two non-distinct copies of XP, one of which needs to be deleted (presumably for reasons of linearization; cf. Nunes 1995, 1999). In other words, the CDE concerns maximal phrases only; by definition, head movement creates a new object (via adjunction),¹¹ as morphemes, pronounced or not (the “real” input of functional heads), obligatorily change the PF-matrix of the element that moves/adjoins to them. This is illustrated in (33), where we concentrate on the moving head X^0 , moving to a higher head, Y^0 :



¹¹ But see fn. 7 for complications. For purposes of illustration, I present the more traditional view of head movement. This means that typically, V moves to v , which then moves to AgrO and T, into the CP-layer — depending on the finer architecture of the clause. Naturally, (many of) these movements take place within one and the same Prolific Domain. Crucially, however, they don’t conflict with CDE.

Note that if the controversy raised by some authors mentioned above turns out to be right — and head movement doesn’t exist — the issue of what to do with heads in an Anti-Locality framework doesn’t even arise. It is interesting to note, though, that if head movement exists in the “traditional” form, we have more reason to regard the CDE as a PF-condition (see the discussion on Copy Spell Out in section 3.5).

If a head X , with the PF-matrix $[X]$, moves to adjoin to another head Y , with the PF-matrix $[Y]$, the complex head $[_Y X-Y]$ has the PF-matrix $[XY]$ — not $[X]$ or $[Y]$. Movement of ZP, qua substitution to SpecYP, on the other hand doesn't involve change or enrichment of the PF-matrix — both (non-distinct) copies of ZP have the PF-matrix $[ZP]$. If X and Y are both in the same Prolific Domain (i.e. if they both share the contextual information $|\alpha|$), two occurrences of $[ZP]$ violate a well-formed PF at the point of Spell Out. The point of Spell Out is the formation of the Prolific Domain, that is very locally, once ZP-movement takes place. (For more discussion, see Grohmann 2000a:58ff.)

This understanding of the computation makes one simple prediction. If a dependency between two positions within the same Prolific Domain were to involve different PF-matrices, the CDE should be satisfied. Following recent discussion in the literature, this prediction seems indeed to be borne out.

3.5. Copy Spell Out

As the discussion on head movement suggests, the Anti-Locality Hypothesis (in terms of the CDE) is not an absolute ban on too-close movement, but rather a restriction that no dependency may contain two non-distinct copies within a too-close environment (i.e. one and the same Prolific Domain). Let us whether we find related dependencies. These should be well-formed and involve two identical elements whose PF-matrices are different. A rigid investigation of such a possible state of affairs will lead us to a strictly derivational view of the computational system, very much in the spirit of Hornstein's (2001a) study: to simplify the inventory of rules and conditions on the grammar, recasting as much as possible of "traditional" rules of construal in terms of movement dependencies, wherever possible and well-suited.¹²

Taking (certain) pronouns to be grammatical formatives, rather than fully lexical expressions (see among others Aoun & Benmamoun 1998, Aoun & Choueiri 2000, Aoun, Choueiri & Hornstein 2001, Hornstein 2001a for discussion), Domain-internal dependencies involving two XPs with a different PF-matrix assigned to each copy can indeed be found: as grammatical formatives, these pronouns are thus derived; in derivational terms, they are inserted into the derivation, given some trigger. The trigger, I suggest, is the CDE.

One example concerns the relation between the peripheral XP and a coreferent resumptive pronoun (RP) in certain left dislocation constructions — but not others. There is a type of left dislocation that exhibits clear diagnostics for movement. (34) is one such instance, illustrating the availability of a bound variable reading between a quantified subject and a pronoun contained in the left-dislocated constituent (where the left-dislocated constituent and the RP are in an "anti-local relationship," as shown in (34b): CP and TopP are part of the ω -Domain). (The coreference is indicated by italics and the bound variable reading in this case by subscription.)

¹² Rhetoric aside, the Anti-Locality Hypothesis can easily be stated in representational terms, with minor modifications, but for purposes of exposition I choose the "strictly derivational" route (and vocabulary).

- (34) a. [*Seinen_i Vater*], *den* mag jeder_i.
 his-ACC father RP-ACC likes everyone
 ‘His father, everyone likes.’
 b. [_{CP} seinen Vater C [_{TopP} *den* mag-Top [_{TP} jeder T...]]]

This example is from German and is typically known as “contrastive” left dislocation. Contrastive left dislocation stands in clear contrast to another type of left dislocation found in German (and English), known as “hanging topic” left dislocation (or, in German traditional grammar, *nominativus pendens*):

- (35) a. [*Sein_i Vater*], jeder_{*i/k} mag *den/ihn*.
 his-NOM father everyone likes RP/him-ACC
 ‘His father, everyone likes him.’
 b. [_{CP} sein Vater [_{CP} C [_{TP} jeder mag-T den/ihn...]]]

Hanging topics appear in nominative case, while the RP receives the “proper” Case. Moreover, the RP may appear low in the structure, as opposed to the topic position. What we see in (35) is that the bound variable reading from (34) disappears. If the left-dislocated constituent with the pronominal element inside has moved in one case, but not the other, this difference is predicted: at some point in the derivation (after reconstruction at LF, for example), the quantifier and the pronoun are in a command relationship, licensing binding of the variable.

It is easy to show that there exist clear contrasts between contrastive and hanging topic left dislocation beyond the one illustrated here. These have been known, debated and analyzed for a long time (see van Riemsdijk 1997 for an overview, and many papers old and new in Anagnostopoulou et al. 1997, but also my own work in Grohmann 1997, 2000b, 2000c, and references cited, for discussion).

In particular, the former construction does not display Weak Crossover or Condition A effects, but is sensitive to Condition C. Moreover, the two differ with respect to other consequences of reconstruction, such as the possibility of left-dislocating idiom chunks, whether they may appear in embedded contexts, and whether they allow multiple left-dislocated XPs.

Analytically, we could capture these differences as follows: contrastive left dislocation involves movement of the left-dislocated element (XP) through two Comp-positions — i.e. movement within the ω -Domain. As with head movement, such a step is only legitimate if the two copies are made non-distinct; by the CDE, the non-distinctness must be one in terms of PF-properties. And just as heads move via adjunction, thus creating a different PF-matrix, we would expect that if the left-dislocated XP moved within a Prolific Domain in contrastive left dislocation, this movement would result in a different PF-matrix of one of the two copies. Following the standard argument that in cases of doubt it is the lower copy that deletes (as it has a less complete set of checked features), we can say that in these cases it is the lower copy that changes its PF-matrix. Let us thus take the RP as the spelled out copy, resulting in a dependency that conforms to the CDE. The relevant derivational step for (34a) would thus be the following, where Copy Spell Out is indicated by ‘☉’.

- (36) [_{CP} seinen Vater C [_{TopP} ~~seinen Vater~~ ↻ den mag-Top [_{TP} jeder T...]]]

Hanging topics, on the other hand, are base-generated in a CP-adjoined position (see Grohmann 2000a, 2000b for arguments for this analysis) and the RP is inserted directly into derivation, not involving Copy Spell Out. These different derivations are represented in the (35b) and (36), respectively.

Under the same assumption — that certain pronominal elements are grammatical formatives and that dependencies should be derived by movement wherever possible — another application of Copy Spell Out can be argued for local anaphors, where reflexives, for example, are the result of spelling out a copy that would otherwise violate the CDE. In other words, under such a view, local anaphors would also be introduced in the course of the derivation (see, for example, Lees & Klima 1963, Lidz & Idsardi 1997, Hornstein 2001a for precursors).

Parallel to (34) then, we could derive local anaphors just as RPs, via Copy Spell Out. Recall (15a) from above, for example, repeated here for convenience, alongside the proposed analysis in line with the Anti-Locality Hypothesis:

- (37) a. John_i likes himself_i.
 b. [_{TP} John T [_{VP} ~~John~~ v [_{VP} likes-V ~~John~~ ↻ himself]]]

Given that movement from one theta- to another theta-position need not be ruled out by additional conditions (see section 3.1), the CDE forces Copy Spell Out of the lower instance of *John*. Compare this with the structure in (22) above: if Copy Spell Out didn't apply, the structure would violate the CDE and thus be illicit.

This proposal makes the right predictions for (15b-c) also, repeated as (38):

- (38) a. Bill_k thinks (that) John_i likes himself_{i/*k}.
 b. *John_i thinks (that) Mary likes himself_i.

If local reflexives are the result of a very local Copy Spell Out — within the same θ -Domain, it seems¹³ — matrix *Bill* can never serve as the “antecedent” for embedded *himself* (in (38a)), and neither can *John* in (38b). This is the abbreviated proposal from Grohmann (2000a:112-141ff.), where an analysis for local reciprocals along the same lines is also discussed (see also Grohmann 2001b for more).

The requirement that reflexives get spelled out in the θ -Domain is not absolute. Otherwise, cases such as (16), repeated as (39), could hardly be captured:

¹³ In Grohmann (200a), I also discuss other instances of local reflexivization, including the paradigm below and a number of arising complications (e.g. reflexives in double object constructions).

- (i) a. [_{VP} John v [_{VP} introduces ~~John~~ ↻ himself to Mary]]
 b. [_{VP} John v [_{VP} introduces Mary to ~~John~~ ↻ himself]]
 c. [_{VP} John v [_{VP} introduces Mary to ~~Mary~~ ↻ herself]]

In (i), we see the reflexive as Copy Spell Out of theme-to-agent movement in (ia), goal-to-agent movement in (ib), and goal-to-theme movement in (ic), disregarding further aspect of the structure of VP (cf. Baker 1997). For more, see the discussion in Grohmann (2000a:123-128).

- (39) a. John_i expects himself_i to win the race.
 b. Bill_k thinks (that) John_i expects himself_{i/*k} to win the race.
 c. *John_i thinks (that) Mary expects himself_i to win the race.

Following suggestions by Koizumi (1995) or Lasnik (1995b), for example, offers new possibilities: the subject of ECM-constructions, such as (39a), doesn't sit in an embedded (SpecTP) position, but in the matrix SpecAgrOP, where it checks accusative. This movement takes place overtly (in line with proposals by Castillo, Drury & Grohmann 1999, Bošković 2001 and many others, but contra Chomsky 1991 and Lasnik & Saito 1993, who assume LF-movement). This allows us to relocate the point of Copy Spell Out. Rather than taking place in the embedded θ -Domain, where there is no room for two arguments (namely, what come out as the matrix agent/subject *John* and the embedded agent/subject *himself*), it happens in the matrix ϕ -Domain.

The derivation, first proposed in Grohmann (2000a) and subsequently developed in Grohmann (2001b), proceeds as follows:

- (40) [_{TP} John T [_? expects [_{AgrOP} ~~John~~ \Rightarrow himself AgrO [_{VP} ~~John~~ v [_{VP} expects [_{TP} to-T [_{VP} ~~John~~ v [_{VP} win-V the race]]]]]]]]]

If this is correct, the illicit coindexation from (39b-c) is ruled out trivially. See the references just cited for more discussion on the analysis; especially the latter work integrates a wider range of cases, in essence assimilating the behaviour of ECM-subjects to those of small clause-constructions. (The motivation for stepping over the embedded SpecTP-position will be discussed in section 4.2 below.)

This leads us to the question what Copy Spell Out actually is. Intuitively, it seems to rescue an otherwise illicit step in the derivation. Standard deletion of the lower copy within an anti-local environment (the same Prolific Domain) is ruled out by the CDE, but if the lower copy receives a different PF-matrix, the CDE is satisfied. Copy Spell Out doesn't delete, but spell out the lower copy, and by doing so assigns it a different PF-matrix in the guise of a grammatical formative — namely, a pronominal element. A critic might object (as does Boeckx 2001a:47, for example) that inserting a pronoun for a copy would violate the Inclusiveness Condition, as a symbol of sorts that wasn't part of the initial array/numeration gets introduced in the course of the derivation. However, we are not forced to fall into this trap; no idle symbols are added to the computation. consider the following suggestion. Recall that the CDE is a PF-condition. Little that we know about PF, it is the component of the grammar that takes an expression and assigns it a pronunciation, which can be null. The simplest way to imagine how PF works is to assume that it takes specifications provided by the feature-bundle of an expression and churns out some PF-readable form (what I call the "PF-matrix"). Copy Spell Out is not an adding operation, but a modification process, just like a Last Resort account of *do*-support (cf. Arnold 1995).

To illustrate with an example, an expression *John* gets pronounced /dʒɒn/ at some point of the derivation (i.e. when it is shipped to the PF-component) because its feature make-up contains all relevant articulatory, physical and phonetic instructions

for PF to pronounce it as such *and* it bears all formal (morpho-syntactic and semantic) features that identify it exhaustively (3rd person singular, masculine, Case etc.). In the case of local reflexives, we can imagine the following representation:

$$(41) \left[{}_{\alpha\Delta} \text{XP} \Rightarrow /dʒɔn/ \dots \cancel{\text{XP}} \Rightarrow /hɪmsɛlf/ \right]$$

John
3sg.
masc.
Case

John
3sg.
masc.
Case

For practical purposes, then, if an element XP, specified (at least) as in (41), moves within the same Prolific Domain $\alpha\Delta$ (such as the θ -Domain, viz. (37)), PF will be fed two identical sets of feature bundles *when the Prolific Domain is established and its information sent to the interfaces*. That is, at the time-step of the movement, everything is fine, but once PF receives two identical directions to pronounce two non-distinct copies, the CDE kicks in and either causes the derivation to crash or to repair the illegitimate PF-information. In the latter case, the lower copy receives the PF-matrix /hɪmsɛlf/ which can then check its (yet unspecified) Case-feature, i.e. accusative in this case, while the higher copy, to be pronounced /dʒɔn/, checks its feature [Case], namely nominative under standard assumptions.

I leave the discussion of the suggestion how to conform copy Spell Out to the Inclusiveness Condition as is, leaving aside further details yet to be worked out. What is important is that Copy Spell Out does not *insert* something (new), it uses an existing feature bundle and assigns it a pronunciation. By the CDE, the pronounced lower copy must be different from the higher one in the same Prolific Domain, and the default option is a pronominal form that matches in all relevant respects (such as ϕ -features). A more thorough investigation of the details would need to take into account different default forms for different Prolific Domains, for example, to get a demonstrative pronoun in contrastive LD and a reflexive/reciprocal in local anaphoric constructions and so on (on reflexives vs. reciprocals, see Grohmann 2000a:139-141ff. for brief discussion).

From the preliminary discussion sketched here, we can take home that pronominal elements that surface as spelled out copies are taken to be RPs of sorts, “rescuing” an otherwise illegitimate dependency. In more general terms, we can formulate a ban on Domain-internal movement along the following lines:

$$(42) \textit{Ban on } \Pi\Delta\textit{-internal movement}$$

$$* [{}_{\alpha\Delta} \text{XP} \dots \cancel{\text{XP}}], \text{ unless } \text{XP} \Rightarrow \text{Y}, \text{ where } [\text{PF}]_{\text{XP}} \neq [\text{PF}]_{\text{Y}}$$

If Copy Spell Out creates resumptives of sorts, then RPs seem to appear in two diametrically opposite environments. RPs appear in a dependency if the two related positions would otherwise be too far from each other to allow movement (qua Copy, Move, Merge and Delete), such as resumption strategies in relative constructions in many languages; this is standard resumption. Alternatively, RPs appear when a dependency would be too close, as suggested here, i.e. resumption qua Copy Spell Out); for a more general discussion, see Grohmann & Haegeman (in progress).

4. Symmetry or Asymmetry?

What we have seen so far are apparently two different restrictions on the formation of dependencies: one prohibits movement that covers too long a distance (through Relativized Minimality, for example, viz. “Standard Locality”) and one prohibits movement that covers too short a distance (through Prolific Domains, viz. “Anti-Locality”). Two natural questions at this point, I take it, would be:

- (i) Is there one locality condition or are there two ?
- (ii) How, if at all, do Standard and Anti-Locality go together?

My answer is going to be that the formal tripartition of the clause into Prolific Domains allows us not only to formulate an account of Anti-Locality, but to integrate Standard Locality as well. In this section we’re going to look at derivational steps that underlie the formation of simple clauses vis-à-vis clause-internal or “intra-clausal” movement and of more complex structures involving movement across clause boundaries, “inter-clausal” movement. In a nutshell, the former forces movement to always target *a position within the next higher Prolific Domain*, while the latter targets *a position within the Prolific Domain of the same type in the next higher clause*. In a way, this allows us to generalize successive-cyclic movement to all types of displacement. After presenting the basic idea, we’re going to look at extensions and discuss recent changes in MP that may have some bearing on the issues at hand.

4.1. Intra-Clausal Movement

The Anti-Locality Hypothesis bans movement of a maximal phrase XP within a given Prolific Domain, unless the lower copy of XP receives a different PF-matrix. This allows us to refrain from categorically excluding certain types from movement, such as movement into theta-positions. Movement is unconstrained with respect to the *types* of position it involves, but it is constrained with respect to the *locality* of the positions it involves. This suggests that Anti-Locality, a lower bound on the distance between two positions in a given dependency, and Standard Locality, an upper bound, need not be mutually exclusive; they can be made to work together. One obvious domain of application is movement that crosses a Prolific Domain. I suggest that within a given clause, movement always targets a position within the next higher Prolific Domain. Let’s scrutinize this hypothesis.

We have seen in (4) above, repeated here as (43) for convenience, that the *Barriers*-framework had to assume movement of a simple Wh-phrase within a clause to pass through an intermediate “position.”

- (43) [_{CP} who did [_{IP} John I [_{VP} ___ [_{VP} see ___]]]]

For *Barriers*, this assumption was necessary to circumvent a Subjacency violation — VP and IP are bounding nodes and each movement step can cross at most one. The intermediate “position” was taken to be adjunction to the VP from which the

Wh-phrase originated. This hinges on our assumptions about “exclusion” (Chomsky 1986a:9), including (or not) “segments” as appropriate sub-parts of structure relevant to determine domination (cf. May 1985). Details as to how to enforce this condition, what problems arise, and how it can be modified and fixed are irrelevant at this point (see e.g. Rizzi 1990, Lasnik & Saito 1992). What matters is that there was an intuition that unless the Wh-object touches down prior to reaching its landing site, the distance between VP-internal thematic object position and Comp-internal canonical Wh-position is too far.

Replace the former by “some position within the θ -Domain” and the latter with “some position within the ω -Domain,” and you get something very similar to what I suggest here: in order to move XP from a θ -Domain position to an ω -Domain position, XP must pass through a position along the way — a natural position would be one within the ϕ -Domain. (44) illustrates, showing only the abstract structure relevant for us:

(44) [ω_{Δ} who did [ϕ_{Δ} John ~~who~~ [θ_{Δ} see ~~who~~]]]

The *Barriers*-account in terms of VP-adjunction might be suspect to us for two reasons. First, it is not at all clear that adjunction to VP, or rather vP (the θ -Domain), could be interpreted as displacement into a different Prolific Domain. One would have to argue that the specifier of vP is part of the θ -Domain, but additional material hanging up there is not. The argument that certain adverbs are adjoined to vP (if one doesn't adopt the functional-projection-per-adverb approach of Cinque 1999; cf. (24)/(25) above) comes about because they modify the event expressed by the verb (phrase), not some inflectional material. Thus, some adverbs, adjoined to VP or vP , are certainly part of the θ -Domain — how can we then make the adjoined Wh-phrase be part of a higher Prolific Domain? Secondly, it is not at all clear that movement of XP should be allowed to adjoin. I discuss the second, and presumably more controversial, point at length elsewhere (see Grohmann 2000a, 2001a). I will return briefly to both points in section 4.3 below.

More relevant to the current issue is that — at least one version of — MP tries to capture the intuition that Wh-phrases move through an intermediate position before reaching their [Wh]-marked landing site as part of Checking Theory. Just as subjects have to dislocate into Infl (the ϕ -Domain, presumably SpecTP) to check agreement and Case, objects have to do so also. In the wake of the work by Pollock (1989), Belletti (1990) and Chomsky (1991), among others, what we call the ϕ -Domain contains a projection for accusative case into whose specifier the object moves for checking its Case-feature. (This is the position we have assumed to be AgrOP above.) Thus in “early” minimalism, the relevant derivation could be taken to be the following:

(45) [$_{CP}$ who did [$_{TP}$ John T [$_{AgrOP}$ ~~who~~ AgrO [$_{vP}$ John v [$_{VP}$ see ~~who~~]]]]]]]

This derivation is remarkably similar to the one I suggest in the Anti-Locality framework, namely (44). In the MP-version of Chomsky (1993) — and, until section

4.10, of Chomsky (1995) in general — the intermediate touch-down could be taken to be forced by Checking Theory. As a DP, *who* has a Case-feature, [Acc], which needs to be checked overtly or covertly. If *who* moves in the overt component to a position higher than the Case-checking position, AgrOP, it must pass through AgrOP and check [Acc] overtly. If *who* stays in situ (as in *Which man saw who*), this is done covertly, at least through feature-movement. But once in CP, [Acc] cannot be checked at LF, unless we reintroduce a “lowering” operation (though see Chomsky 1995:202f.).

In sum, the hypothesis that overt Wh-movement passes through a Case-checking position is not novel and doesn’t seem crazy either.¹⁴ The reason why in most approaches this step has been eliminated is theory-internal, rather than driven by empirical counter-evidence.

So, overtly displaced arguments move into the ϕ -Domain for Case-checking (see fn. 14). This can be a corollary operation, as in the case of A’-movement (as above). Obviously, it can be A-movement proper, as in raising from agent to subject position or theme to object in languages that move (all) their arguments out of their base-generated position. The first case can be illustrated with English, assuming the Predicate-Internal Subject Hypothesis (see McCloskey 1997 for a recent overview and sources); the second one with German, pursuing Zwart’s (1993, 1997a) analysis that takes German to be a “well-behaved” underlying VO-language, head-initial throughout (though see vanden Wyngaerd 1989 for arguments that movement into AgrOP takes place, even if we take the German VP to be head-final):

- (46) a. John saw Mary.
 b. Peter hat Maria gesehen.
 Peter has Maria seen
 ‘Peter saw Mary.’

Under an early MP-approach, the derivations would be something like (47); in the current system, the for us relevant parts are shown in (48) in terms of Prolific Domains, disregarding finer structure:

- (47) a. [_{TP} John T [_{VP} ~~John~~ v [_{VP} saw Mary]]]
 b. [_{TP} Hans hat-T [_{AgrOP} Maria AgrO [_{VP} ~~Hans~~ v [_{VP} gesehen ~~Maria~~]]]]]
 (48) a. [_{ϕ Δ} John [_{θ Δ} ~~John~~ saw Mary]]
 b. [_{ϕ Δ} Hans hat Maria [_{θ Δ} ~~Hans~~ gesehen ~~Maria~~]]]]]

There is thus evidence for two states of affairs. First, A-dependencies involve a position within the θ -Domain and a position within the next higher ϕ -Domain. Second, A’-dependencies involve a position within the θ -Domain and a position within the ω -Domain of the same clause, passing through the next higher ϕ -Domain.

¹⁴ In Grohmann (2000a) I argue that the motivation for movement into (or through) the ϕ -Domain is not checking of Case, but checking of agreement or ϕ -features. Case-marking was taken to be a corollary, following from the mechanism of checking defended there (see also Grohmann 2001a).

In other words, clause-internal movement can be captured by taking place from one Prolific Domain to the next higher one, illustrated in (49):

(49) $[_{\alpha\Delta} \dots \text{XP} \dots [_{\phi\Delta} \dots \text{XP} \dots [_{\theta\Delta} \dots \text{XP} \dots]]]$

This allows the generalization (50) about movement within a clause (“intra-clausal”); displacement of an element from Prolific Domain α targets a position within Prolific Domain β , where β is of a different type than α and immediately dominates Prolific Domain α :

(50) *Intra-Clausal Movement Generalization*
 $[_{\beta\Delta} \text{XP} \dots [_{\alpha\Delta} \dots \text{XP} \dots]]$, where $\beta > \alpha$

In the current framework, the Intra-Clausal Movement Generalization follows straightforwardly without unmotivated assumptions, and as such is nothing too exciting. It rather is a natural combination of Standard Locality and Anti-Locality: movement within a Prolific Domain is ruled out by the latter, movement targeting the next higher Prolific Domain is enforced by the former.

4.2. Inter-Clausal Movement

Let’s now consider movement across clause, or inter-clausal movement. Analogous to the Intra-Clausal Movement Generalization, I suggest the generalization in (51) for movement across clause boundaries:

(51) *Intra-Clausal Movement Generalization*
 $[_{\alpha\Delta} \text{XP} \dots \ddagger \dots [_{\alpha\Delta} \dots \text{XP} \dots]]$, where \ddagger = clause boundary

The most apparent support comes from successive-cyclic movement of the sort witnessed in long Wh-movement. For the longest time, successive-cyclic Comp-to-Comp has been on the agenda of generative theory (see also sections 2.1 and 2.2 above). Thus, the relevant underlying derivation for (52a), repeated from (3), would be something like (52b), where we want to focus on the last step(s), successive-cyclic movement of *who* from CP3 to CP2 to CP1:

(52) a. Who did you say John thinks Mary likes?
 b. $[_{\text{CP1}} \text{who did-C } [_{\text{TP1}} \text{you say } [_{\text{CP2}} \text{who C } [_{\text{TP2}} \text{John thinks } [_{\text{CP3}} \text{who C } [_{\text{TP3}} \text{Mary T } [_{\text{AgrOP}} \text{who AgrO } [_{\text{VP}} \text{Mary } \nu [_{\text{VP}} \text{likes who}]]]]]]]]]]]$

In order to get to the matrix CP, *who* has to move through all intermediate CP-positions. We have seen some arguments for successive-cyclic movement in section 2; other arguments come from languages which show a morphological reflex in such constructions (such as Irish; cf. McCloskey 1990).

Concentrating on the role of Prolific Domains, (52a) would receive the abstract structure (53):

- (53) $[_{\omega\Delta 1} \text{ who did } [_{\phi\Delta 1} \text{ you } [_{\theta\Delta 1} \text{ say}$
 $\quad \ddagger [_{\omega\Delta 2} \text{ who } [_{\phi\Delta 2} \text{ John } [_{\theta\Delta 2} \text{ thinks}$
 $\quad \quad \ddagger [_{\omega\Delta 3} \text{ who } [_{\phi\Delta 3} \text{ Mary who } [_{\theta\Delta 3} \text{ likes who}]]]]]]]]]$

More general, on a par with (49), the Inter-Clausal Movement Generalization can be illustrated as follows:

- (54) a. $[_{\omega\Delta 1} \dots \text{XP} \dots [_{\phi\Delta 1} \dots [_{\theta\Delta 1} \dots \ddagger [_{\omega\Delta n} \dots \text{XP} \dots [_{\phi\Delta n} \dots \text{XP} \dots [_{\theta\Delta n} \dots \text{XP} \dots]]]]]]]]$

Note that the Intra-Clausal Movement Generalization, coupled with the Inter-Clausal Movement Generalization, makes the right prediction: movement takes place from a position within one Prolific Domain to a position within the same type of Prolific Domain in the next higher clause, once that position is reached (by movement from one Prolific Domain to the next higher Prolific Domain in the original clause).

We don't only find this type of successive-cyclic movement with A'-dependencies. Traditional analyses of raising assume the same successive-cyclic derivation for the raised subject depicted in (55b) for (55a) (repeated from (10a)):

- (55) a. John is likely to appear to like Mary.
 b. $[_{TP1} \text{ John T seems } [_{TP2} \text{ John to-T be likely } [_{TP3} \text{ John to-T appear } [_{TP4} \text{ John to T } [_{VP} \text{ John like Mary}]]]]]]]$

In current notation, this would look like (56):

- (56) $[_{\phi\Delta 1} \text{ John } [_{\theta\Delta 1} \text{ seems}$
 $\quad \ddagger [_{\phi\Delta 2} \text{ John to } [_{\theta\Delta 2} \text{ be likely}$
 $\quad \quad \ddagger [_{\phi\Delta 3} \text{ John to } [_{\theta\Delta 3} \text{ appear}$
 $\quad \quad \quad \ddagger [_{\phi\Delta 4} \text{ John to } [_{\theta\Delta 4} \text{ John like Mary}]]]]]]]$

The pattern is the same: the most deeply embedded element undergoes all relevant movement in its immediate clause and then moves to a position within the same type of Prolific Domain in the next higher clause. Again, we can assume that one state of affairs is forced by Anti-, the other by Standard Locality.

Given that movement into θ -positions is in principle allowed, we might wonder what the impact of the Inter-Clausal Movement Generalization could be for other constructions. One that immediately comes to mind — especially in the face of the discussion so far and the strong resemblance to the program envisioned in Hornstein (2001a) — is the control construction. Hornstein argues that the obvious structural similarities between raising and control (where a matrix subject is “identical” with an embedded infinitival subject) should be taken to be more than pure accident. Moreover, as he is also concerned with the abolishment of superfluous, conceptually unnecessary or unwelcome devices, he is doubtful about the existence of PRO (as part of getting rid of the GB-Control Module and the PRO-Theorem altogether).

One way of establishing the identity of the matrix and embedded subject in control structures, such as (17a), repeated here for convenience from (57a) above, is to analyse them as a movement dependency, rather than a dependency of construal (construing the matrix subject with the embedded PRO subject). The different analyses are represented in (57b) and (57c), respectively, in preliminary fashion:

- (57) a. John wants to kiss Mary.
 b. [_{TP} John_i wants [_{TP} PRO_i to kiss Mary]]
 c. [_{TP} John wants [_{TP} ~~John~~ to kiss Mary]]

If it turns out that our wariness of employing PRO is well-founded (see Hornstein 2001a for discussion, and section 3.1 above), (57b) is the less preferred analysis. Hornstein opts for some form of (57c), and we will do so too.

Based on the Inter-Clausal Movement Generalization, an obvious derivation would be the following slightly more detailed one:

- (58) [_{TP} John T [_{VP} ~~John~~ v [_{VP} wants-V [_{TP} to-T [_{VP} ~~John~~ v [_{VP} kiss-V Mary]]]]]]]

John is agent of both *kiss* and *want*; it bears two θ -roles. Given that it cannot receive nominative from the embedded infinitival, it has to move into the matrix clause, just as in raising constructions. The major difference between raising and control is, however, that raising subjects bear one, control subjects two θ -roles. The by now obvious solution is to move *John* in control structures from the embedded θ - to the matrix θ -position, where it checks an additional θ -role/feature. The Inter-Clausal Movement Generalization allows, or predicts, exactly this operation. It thus stands in contrast to the one originally provided by Hornstein (2001a:27, 38, but see fn. 15 below), where *John* moves into the matrix θ -position via embedded SpecTP:

- (59) [_{TP} John T [_{VP} ~~John~~ v [_{VP} wants-V [_{TP} ~~John~~ to-T [_{VP} ~~John~~ v [_{VP} kiss-V Mary]]]]]]]

The major difference between (58) and (59) is, of course, the embedded SpecTP position, mentioned above already. Ever since the postulation of the Extended Projection Principle, henceforth EPP (Chomsky 1981, 1982), this “intermediate” subject position was needed for theoretical reasons, however to be formulated. In recent years, a strong awareness of the peculiarity of the EPP turned out a lot of fruitful research (see, among many others, Boeckx 2000, Bošković 2001, Castillo, Drury & Grohmann 1997, 1999, Epstein & Seely 1999, Grohmann, Drury & Castillo 2000, Lasnik 2001, and references cited in these works).

The bottom-line of this discussion is that the status, theoretically and empirically, of the EPP is anything but clear. That means that there is no a priori reason for specifier positions of deficient, infinitival clauses to be filled. Recall the discussion from section 3.5 that some of the elements that have been argued to sit in such a position can be analysed differently. The subject of an infinitival clause in ECM-constructions, for example, can arguably be understood to move to a higher position within the matrix clause — even in the overt component.

Relevant at this point is that, as Castillo, Drury & Grohmann (1999) and Grohmann, Drury & Castillo (2000) suggest, there is no condition or principle like the “EPP” that forces this kind of position to be filled.

Interestingly, Bošković (2001), eager to dispense with the EPP if at all possible, finds that while the EPP as such is neither empirically motivated nor theoretically necessary, filling of this funny intermediate specifier position of a deficient TP is necessary for locality reasons. By Standard Locality, the subject of an infinitival clause in raising constructions, for example, as in (55a), cannot move from its base-generated θ -position to the matrix SpecTP in one fell swoop. This is reflected in our analysis of raising constructions as well.

Note that this conclusion is also reflected in the Inter-Clausal Movement Generalization (50): if we understand at least parts of Standard Locality in terms of distance qua Prolific Domains (of the same type), successive-cyclic movement from SpecTP to SpecTP in raising is predicted without evoking the “EPP.” Let’s now see what, if anything, this line of reasoning has to say about the other type of infinitival complementation discussed here, namely control.

Recall the two competing analyses from (58) and (59). Any implementation of the EPP would prefer (59), the one suggested originally by Hornstein (2001a).¹⁵ However, if we dispense with the EPP and understand movement to conform to Standard and Anti-Locality conditions, such as the Inter-Clausal Movement Generalization in this case, we should favour (58). This is exactly the step we make.

We now yield not only the similarities between raising and control (by moving the embedded subject in both types of construction), but also a difference, namely one in structure: raising involves movement through SpecTP, control doesn’t. In both cases, however, the operations that displace the subject of an infinitival complement clause adhere to Standard and Anti-Locality qua the Inter-Clausal Movement Generalization. This is depicted in (60a) for raising and (60b) for control:

- (60) a. $[_{\phi\Delta} \text{XP T} \dots [_{\theta\Delta} \emptyset \text{ raising-V} \dots \ddagger \dots [_{\phi\Delta} \text{XP T} \dots [_{\theta\Delta} \text{XP V} \dots]]]]$
 b. $[_{\phi\Delta} \text{XP T} \dots [_{\theta\Delta} \text{XP control-V} \dots \ddagger \dots [_{\phi\Delta} \emptyset \text{ T} \dots [_{\theta\Delta} \text{XP V} \dots]]]]$

This basic discussion should suffice. Much more can and need be said, of course, such as differences in the structure of the θ -Domain in the two cases; one could say, for example, that the θ -Domain does not contain vP in raising, but it does in control constructions (cf. Zwart 2001). I leave further details for future studies devoted to infinitival complementation in an Anti-Locality setting. So far we have seen a pretty successful implementation of the Inter-Clausal Movement Generalization.

¹⁵ The reference to Hornstein (2001a) is appropriate because this is one serious attempt, within MP, to assimilate raising and control constructions in as far as possible, plausible and desirable (extended in Hornstein 2001b, including a discussion of apparent counter-examples from partial control brought up in Landau 1999). For an earlier attempt to do this, see Bowers 1973. Note that Hornstein (2001a:ch. 2, esp. pp.56f., and p.223, fn.12) also offers the alternative account without movement through non-finite SpecTP, following Castillo, Drury & Grohmann’s (1999) proposal — but the reasoning in favour of this alternative adopted here is for different reasons, combining the Anti-Locality Hypothesis more naturally, I believe, with the proposal in Bošković (2001).

This is not to say, of course, that this kind of approach is without any (empirical and conceptual) complications, but I will leave them for further study. One might, for example, ask whether the Inter- (and Intra-, for that matter) Clausal Movement Generalizations follow from anything or whether they are simply postulated. In the spirit of the minimalist views expounded here, the former is clearly desirable. As Joachim Sabel (p.c.) observes, the generalizations — and cases considered — bear an obvious resemblance to the Uniformity Condition (cf. Browning 1987, Chomsky & Lasnik 1993, Chomsky 1993). Uniformity is typically expressed to hold over chains, a construct I don't adopt here in the formal sense vis-à-vis a “real” object, as it seems to violate the Inclusiveness Condition (see Chametzky 2000:116, Hornstein 1998, Hornstein 2001a:67, fn.49).

Given the discussion about the two generalizations above, something has to be said about constructions of the following type:

- (61) a. John seems to hope to win.
 b. John wants to appear to win.
 c. John seems to want to be certain to expect to win.
 d. John wants to be certain to expect to be likely to win.

I leave grammaticality judgements aside; it is not clear that all structures are equally well-formed, but then again, it's not clear what might make some of these marked. It might be some semantic/pragmatic mismatch expressed. What is relevant for us is that it looks as if combination of raising and control complementation is possible, even iterated, regardless of the order (if the right predicates are chosen).

All of this suggests that there might be something to the Intra- and Inter-Clausal Movement generalization hypothesized here and that this “something” could be due to an independently motivated principle of Universal Grammar. But the latter, more interesting point needs to be carefully investigated in a separate study, so I leave it at that. The generalizations themselves are simply hypotheses that seem to fit what we have said so far, and with what other scholars have proposed independently — such as Bošković's approach to deficient SpecTP, locality and the EPP, for example, or Castillo, Drury & Grohmann's program regarding the abolishment of the EPP, Hornstein's movement analysis to control or even Nunes' proposal of sideways movement). They need not be right (and neither do the approaches which these generalizations seem to support), but that would not jeopardize the Anti-Locality Hypothesis presented here. I believe that there is something to the formal tripartition of the clause presented in section 3.3 and also to a notion of Anti-Locality. Whether and how all this fits in with Standard Locality is another matter,¹⁶ but a symmetric view (such as the one suggested here) is indeed feasible.

¹⁶ Note that I have been silent about the status and technical implementation of islands throughout. The reason is that the Anti-Locality Hypothesis is only in its beginnings and I deemed it more appropriate to lay out the concept in as much detail as space permits. The connection to Standard Locality could consequently only be touched upon, something I would like to intensify in the near future. As for a minimalist definition of islands, this is one of the toughest problems, which I will leave for now (for recent attempts, see for example, Boeckx 2001a, Sabel 2001, Starke 2001).

4.3. A Final Note on Locality and Derivation

I would like to conclude the paper with a brief comparison. As has been noted in the discussion above, the Anti-Locality Hypothesis, as formulated here (especially in connection with the Intra- and Inter-Clausal Movement Generalizations), suggests that certain operations apply to save locality violations of sorts. In particular, it was suggested for Wh-movement that it passes through an agreement-position, very similar in vein to the intermediate VP-adjunction analysis of the *Barriers*-framework (Chomsky 1986a).

There is another recent attempt to build in this intuition in a more minimalist setting, namely Chomsky's (1998) inquiries (developed further in Chomsky 1999, 2001). Interestingly, this approach not only recaptures some of the *Barriers*-insights, it also splits the clause in a particular way, namely in "Phases," which at first sight looks remarkably similar to the partition in Prolific Domains.

The following is thus the attempt to relate the two approaches to one another and see where the differences lie in (and why). The upshot will be that while mutually exclusive in technical implementation, the differences that exist follow from diverging assumptions about the computational system of human language. As such it is not the case that either Phases are the right way to go or Prolific Domains, but rather that one has to decide (and work out further details) which set of assumptions is more to the point and go with that.

For starters, if we return to the "bigger picture" of the current framework, it is worth noting that such a dynamic conception of the computation is not novel, nor is it the only one around. Modifying Uriagereka's (1995, 1999) concept of a cyclic application of Spell Out, Chomsky (1998, 1999, 2001) also splits up the clause into formal sub-parts and sends these off to the interfaces as the derivation unfolds. In this model, the relevant parts ("Phases," here capitalized for the same reason that the concept of "Prolific Domains" is capitalized) are slightly different from both Uriagereka's domains of Spell Out (basically, in terms of left branches) and ours (viz. Prolific Domains) — and subsequently, the consequences of a Phase-driven framework diverge from the consequences of a Domain-driven framework. Nevertheless it is interesting to see how they differ, and to observe that these differences do not per se argue in favour of one over the other; rather, the choice of Phases or Prolific Domains depends on other assumptions on the structure and mechanisms of the grammar one wants to hold on to. What follows is a basic comparison of some of these differences.

Consider (62):

(62) *Comparing Phases (PH) with Prolific Domains ($\Pi\Delta$)*

- i. propositional PH vs. contextual $\Pi\Delta$
- ii. PH and $\Pi\Delta$ are convergent (Spell Out)
- iii. Phase Impenetrability Condition vs. Condition on Domain Exclusivity
 - a. Attract/Agree vs. Move (local evaluation)
 - b. multiple vs. unique specifiers (no edge)

The first point regards the licensing of the sub-parts relevant for convergence and Spell Out. Chomsky (1998) suggests that Phases are propositional, and as such identifies vP and CP as the only Phases of a clause (or “strong” Phases in Chomsky 1999). In the present framework, we basically identified vP , TP and CP as Prolific Domains, identified by contextual information. Both Phases and Domains are convergent sub-parts, that is, they are both locally evaluated and spelled out cyclically. The assumption that vP and CP, and *only* these two, is not without problems; the same, on the other hand, might be said about contextual licensing of the three Prolific domains suggested here, and only these. As both have been suggested and at least partially motivated, we can record in any case that both concepts of sub-parts relevant for Spell Out are well-grounded in some way, even if this way is different.

The same accord can be found concerning the second point, (62ii). Once sub-parts are motivated, they should do something. Both frameworks assign the notion of convergence to the relevant sub-parts, and both implement convergence in shipping off the information to the interfaces locally. Perhaps one more local than the other (recall that Phases are only recognized and closed off as such at the time-step of the next higher Phase-inducing head), but locally nevertheless.

Theoretical implications arise with respect to point (62iii), where the two models diverge. Each framework seems to have one crucial condition that applies to operations within and across the convergent sub-parts. In this sense, there is another similarity between the two, but of course the implementation of the Phase Impenetrability Condition and the Condition on Domain Exclusivity, in combination with the choice of convergent sub-parts, yields very different results.

As the discussion so far suggests, it is a property of the moving element that forces displacement (i.e. Move), whereas Chomsky (1995, 1998) pin-points the trigger to the attracting head (by movement viz. Agree in the former or without, namely through a long-distance application of Agree in the latter version, developed further in Chomsky 1999, 2001). Again, this can be debated, maybe even independently (see, for example, Hornstein 2001a for arguments in favour of Move), but it is clear that the choice of Move vs. Attract/Agree makes different predictions for the derivation.

A more formal difference, and arguably the critical point of divergence, is that a Phase-based system depends on multiple specifiers, to create “escape hatches” for material to get out of a Phase. This is done via an “edge,” the only possibility for a higher Phase-inducing head to attract the relevant material and thus closing off the lower Phase. By not assuming multiple specifiers (see Grohmann 2000a, 2001a for extensive conceptual discussion, and Zwart 1997b, 2001 for potential empirical arguments), this difference is by far not detrimental for a Domain-based system: as mentioned above, a Prolific Domain is evaluated at the point of creation, while a (strong) Phase is then closed off when the next highest Phase enters the computation. Again, this is an issue where a purely empirical approach has little to offer in terms of a solution. It rather depends on what machinery we want to admit to derive the properties of bare phrase/ X' -structure and the necessary relations (see Boeckx 2001b for an interesting view or the discussion in Grohmann 2001a on “natural relations”).

In other words, these properties of the two different systems have to do with the fact that two different well-formedness conditions are at work. Movement out of a Phase is restricted by the Phase Impenetrability Condition, whereas movement within a Prolific Domain is subject to the Condition on Domain Exclusivity.

The upshot of this comparison is that the framework of Prolific Domains fares *prima facie* no worse than a Phase-based system in conception or empirical coverage. In order to decide for one of the two, a number of background assumptions have to be teased apart, which I will leave for future work to decide.

5. Conclusion

This paper dealt with the symmetries found with locality effects on the computation formulated in two ways: as an upper bound on the distance between two positions in a given dependency (what we called Standard Locality) and as a lower bound (Anti-Locality). The discussion showed that while the first, uncontroversial condition can possibly be captured by some version of Relativized Minimality (in terms of some condition on short movement), the second seems to contradict such a formulation.

By tripartitioning the clause into three Prolific Domains and motivating the Condition on Domain Exclusivity, we found the means to implement the Anti-Locality Hypothesis technically and resolve the conflict with Standard Locality accounts. This approach enabled us to have both the requirement that movement must be local and that it must not be too local. If the generalizations concerning movement within and across clauses are on the right track, a (future) formulation of them might also derive the movement-as-local-but-not-too-local construal of displacement in one uniform fashion. The concept of Copy Spell Out, reshaping an element's PF-matrix, allowed us further to establish anti-local relations between two elements without jeopardizing the Anti-Locality Hypothesis, in fact without even evoking a violation of the Condition on Domain Exclusivity; the same can be said for head movement (if it exists).

What would be interesting to do in future research is a more careful examination of Standard Locality as understood here, rather than holding fast to established results and vague formulations. Recent work on islands might offer a promising starting point. We also discussed how the dynamic derivational system projected here fits in, or not, with other recent attempts, concluding that an independent choice of which fares better cannot be made. Rather, our set of assumptions regarding the computational system needs to be inspected more closely. In the light of other recent research relevant to the conceptual basis of minimalism this should be a welcome goal for the entire community.

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