Recent developments in syntactic theory posit the existence of a Long Distance Agreement mechanism, arguing that there is no such thing as a grammatically significant Spec,Head configuration (e.g., Chomsky 2004, 2005a, etc.). This claim is a hallmark of phase-based syntax and, consequently, its evaluation is relevant to our understanding of this framework. The issue is particularly interesting in light of recent arguments in the opposite direction (e.g., Koopman 2006, or Franck, Lassis, Frauenfelder and Rizzi 2006, a.o.). For instance, there is a crosslinguistic tendency for moved elements to trigger agreement, as opposed to in situ ones, a fact that calls for an explanation within this framework (Chomsky 2005a). Furthermore, the issue of how subject Specifiers check their theta-roles under the assumption that these are features (e.g., Bošković 1994, Bošković and Takahashi 1998, Hornstein 2003 and Lasnik 1995) remains unexplained in a system that dispenses with grammatically significant Spec,Head configurations. In view of these and related facts, here it is argued, that conceptual arguments against Spec,Head relations (e.g., Chomsky (2005a) can be circumvented and that Spec,Head relations exist in the system, though not in the traditional guise. In particular, it is argued that under a Multiple Spell-Out system (Uriagereka 1999 and 2008), when combined with the phase-based system, there can be checking relations in the Spec,H configuration, though not probing of the Spec by the Head under m-command. This is shown to solve the problems that the phase-based framework faces.

With regard to morphological agreement, the resulting framework predicts that some languages may sanction Spec,H relations as the domain of morphological agreement. Nonetheless, it is not clear why there appear to be very few cases in natural language where Long-Distance agreement is sanctioned as said domain. It is argued that within the above framework which adopts grammatically significant Spec,Head configurations, performance factors conspire to achieve this result. In particular, the differences in agreement morphology found across languages, depending on whether the Probe Goal relation is established locally (cf. the Spec,Head relation) or via a Long-Distance Agreement, are argued to be related to the workings of so-called Incrementality (cf. Barlow 1992).

Section 1 presents the relevant crosslinguistic generalizations concerning agreement paradigms and previous approaches to these generalizations within the phase-based system. Section 2 develops the current proposal concerning Spec,Head relations. Section 3 focuses on the role of Incrementality in agreement paradigms across languages.

1. On crosslinguistic variation in agreement paradigms

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1 I would like to thank T. Fujii, N. Horstein, H. Lasnik, J. Uriagereka, M. Yoshida, an anonymous reviewer and the audiences at WCCFL25, InterPhases 2006 and BIDE 06 for their comments and suggestions on parts of this paper. All errors are my own.
It is often claimed that one can find languages where agreement follows the paradigms in (1) and (2), but not the one in (3) (where this is illustrated in terms of Probes (P) and Goals (G)); the presence of overt agreement is indicated explicitly, whereas lack of any indication means a corresponding lack of agreement):

(1)  \( G \overset{\text{overt agreement}}{\rightarrow} P \overset{\text{vs.}}{\rightarrow} G \overset{\sqrt{}}{\rightarrow} \) across languages

(2)  \( G \overset{\text{overt agreement}}{\rightarrow} P \overset{\text{vs.}}{\rightarrow} G \overset{\sqrt{}}{\rightarrow} \) across languages

(3)  \( G \overset{\text{P}}{\rightarrow} \overset{\text{vs.}}{\rightarrow} P \overset{\text{overt agreement}}{\rightarrow} G \overset{*}{\rightarrow} \) across languages

The crosslinguistic validity of this observation is present in some way or other in Barlow (1992), Chomsky (2004), Corbett (1979), Franck, Lassis, Frauenfelder and Rizzi (2006), Koopman (2006), Manzini and Savoia (1998), Moravcsik (1978), Park (2006) and Samek-Lodovici (2002), among others. The following data from the Italian dialect of Ancona and French illustrate the pattern in (2), which will be of particular interest for the present discussion:

(4)  **Italian Dialect of Ancona** (Cardinaletti 1997a: 38-9)
   a. Questo, \( lo \overset{\text{fanno}}{\rightarrow} \overset{\text{anno}}{\rightarrow} \overset{\text{sempre}}{\rightarrow} \overset{\text{i}}{\rightarrow} \overset{\text{bambini.}}{\rightarrow} \) thisACC itACC do / does always the children
   b. Questo, \( \overset{\text{i}}{\rightarrow} \overset{\text{bambini}}{\rightarrow} \overset{\text{lo}}{\rightarrow} \overset{\text{fanno}}{\rightarrow} \overset{\text{anno}}{\rightarrow} \overset{\text{sempre.}}{\rightarrow} \) thisACC the children itACC do / does always

(5)  **French** (Boeckx 2004: 23)
   a. Jean a \( v\overset{\text{ue}}{\rightarrow} \overset{\text{la fille}}{\rightarrow} \) has seen / seen.AGR.FEM the girl
      ‘Jean saw the girl.’
   b. Quelle fille Jean a(-t-il) \( \overset{\text{vue}}{\rightarrow} \overset{\text{*vu?}}{\rightarrow} \) which girl Jean has-he seen.AGR.FEM / seen
      ‘Which girl did Jean see?’
   c. Cette fille a \( \overset{\text{étêt}}{\rightarrow} \overset{\text{vue}}{\rightarrow} \overset{\text{*vu}}{\rightarrow} \) this girl has been seen.AGR.FEM / seen
      ‘The girl was seen.’

A number of (often unrelated) languages follow this pattern, e.g., Arabic, Hungarian, and some African languages (see Samek-Lodovici 2002 for an overview), a fact that provides further evidence for the validity of the above generalization.

Such facts have played a prominent role in syntactic theorizing, because they provide an argument for the role of Spec,Head relations (cf. Kayne 1989). Within an approach to syntax which assumes grammatically significant Spec,Head configurations, the relation between the P and the G at the point of Spell-out is different in the in situ and the movement counterparts. Hence, it is natural to consider the Spec,Head relation the domain of (morphological) agreement (Kayne 1994), at least in the relevant languages. In keeping with this view, closely-related discussions in the literature converge on the necessity for such grammatically significant Spec,Head relations, both in theoretical and experimental research (e.g., Koopman 2006 and, Franck, Lassis, Frauenfelder and Rizzi 2006, respectively, among many others).

2 Note that the existence of language-particular variation in the realization of overt agreement is beyond question. Still, the correlation in (1-3) seems to be robust, a fact that we would like to explain. Therefore, I do not take such crosslinguistic variation to question the relevance of the observation and, consequently, the general approach explored in this research.
The picture changes once one assumes Long Distance Agreement (Chomsky 2001 and later work). Within such a system, there is no distinction between the moved and the in situ version in terms of the relation of P and G at the point of Spell-out; things move or do not move, but the agreement relation between P and G is the same no matter what. Therefore, such Agreement Asymmetries do not follow from the system, in contrast to an approach in terms of grammatically significant Spec,Head configurations or checking under m-command. In fact, as Chomsky (2005a:13) states, as the role of Spec,Head relations is diminished, this calls for a reconsideration of a number of issues, Agreement being the most relevant one.

Theta roles pose a similar puzzle. Specifically, the literature has provided evidence for the claim that theta roles are features (e.g., Bošković 1994, Bošković and Takahashi 1998, Hornstein 2003 and Lasnik 1995). For instance, Bošković and Takahashi (1998) provide evidence that scrambled sentences in Japanese involve obligatory LF movement of arguments base-generated in non-theta-positions to the positions where they receive theta-roles. Under this view, theta-roles are formal features capable of driving movement (Bošković and Takahashi 1998: 349-350):

   John-NOM Mary-NOM that book-ACC bought that thinks
   ‘John thinks that Mary bought that book.’

b. Sono hon-o John-ga [Mary-ga t katta to] omotteiru. Scrambling

The derivation corresponding to (6)b is the following under this view, where (7)a corresponds to narrow syntax, (7)b to PF and (7)c to LF:

(7) a. [IP Sono hon-o [IP John-ga [CP[IP Mary-ga [VP[V katta]]] to] omotteiru]]
   that book-ACC John-NOM Mary-NOM bought that thinks

b. sono hon-o John-ga Mary-ga katta to omotteiru

c. [IP John-ga [CP[IP Mary-ga [VP sono hon-o [V katta]]] to] omotteiru]

This analysis is particularly appealing in that it is not only empirically well-supported (see Bošković and Takahashi 1998 for details) but also it makes scrambling consistent with the Last Resort principle. In the present context, an understanding of theta-roles as features is relevant in that it is not clear how a(n externally-merged) subject Specifier may check its theta-role within VP. Similar issues arise for any Specifier that is not c-commanded by the head expected to license it (e.g., certain phrases base-generated in A-bar positions, e.g. topic phrases or wh-phrases like whether).3

In what follows, I provide an unified approach to the puzzle posed by morphological agreement, theta roles and externally-merged Specifiers in A-bar positions. Before doing so, I discuss a number of attempts in the literature to deal with said agreement facts.

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3 Recent trends in syntactic theory put forward the idea that a probing relation is involved in External Merge. For instance, Pesetsky and Torrego (2006) follow this view (see their Vehicle Requirement on Merge). Still, it is not clear that this would allow for a licensing/checking relationship between a head and a Specifier-to-be (e.g., a Specifier about to be externally merged). Pesetsky and Torrego provide evidence/claim that: i. external merge does not result in feature valuation/agreement (see Pesetsky and Torrego 2006: 2); ii. the attempt at feature valuation takes place after merge has already taken place (see Pesetsky and Torrego 2006: n. 26 and related discussion). Given this, it is not clear how this kind of probing would help a phase-based framework when dealing with licensing relations between Specs and a heads, because the feature valuation process would take place in a Spec,Head configuration even in the cases where the Spec undergoes external merge.
1.1. Previous approaches to crosslinguistic variation in agreement paradigms within the phase-based LDA framework

The literature includes (at least) the following attempts to deal with the above agreement facts in (2) within the LDA-based system:

i. the data are not a reflex of the Spec,Head relation, but of the way this configuration is established: internal Merge as opposed to external Merge (Chomsky 2004)

ii. Spec,Head configurations entail intermediate steps which allow for more direct licensing/checking relations than LDA, a fact reflected in the morphology. E.g., in the case of subject licensing in English existentials, LDA between T and the subject takes place indirectly via agreement between T and the head of the VP phase which, in turn, has agreed with the subject. This indirect agreement would be forced by the Phase Impenetrability Condition.4 In contrast, subjects that end up in a Spec,Head configuration agree directly with the Probe when escaping the VP phase (Legate 2001)

iii. rich agreement in the movement counterpart correlates with the presence of an (optional) agreement projection, absent in the case of the in situ counterpart (Boeckx 2004)

iv. Spec,Head configurations entail double-checking the relation between the Probe and the Goal, hence their stricter agreement requirements (Frank et al. 2006)5

Although these approaches are valuable, they have some limitations. Specifically, (i) seems to be mere coding. In turn, (ii) faces the challenge that such agreement asymmetries do not seem to correlate with the opacity effects caused by the Phase Impenetrability Condition (PIC). For example, in situ subjects of transitive verbs are available for direct agreement according to the PIC and, nonetheless, might correlate with poor agreement in certain languages (cf. (4)). (iii) is at odds with the rejection of agreement projections within the minimalist enterprise, and seems slightly ad hoc. Lastly, the solution in (iv), even though it would generate the data correctly, does not provide any explanation of how such a Spec,Head checking mechanism would work in the context of the conceptual arguments made by Chomsky (2005a, etc.) against this checking configuration (see below for details). So the puzzle that agreement paradigms posit for the phase-based system is real. Somewhat ironically, the traditional view that there are checking/licensing relations in the Spec,H configuration would solve the problem. The purpose of the next section is to address

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4 According to the Phase Impenetrability Condition (PIC), in a phase with head H, the domain of H is not accessible to operations outside α, only H and its edge are accessible to such operations; the domain of H is the sister of H, and the edge of H is a hierarchy of one or more Specs (Chomsky 2000:108).

5 The Agreement asymmetries under discussion are found in contexts other than verbal agreement morphology, e.g., internal to DP’s or PP’s as shown by Hornstein et al. 2005: 119). As a consequence, an analysis contingent on expletive subjects (Cardinaletti 1997b), though relevant, is not general enough to capture the paradigm.

Still another alternative approach to the agreement paradigms under consideration is to reject LDA and adopt a generalized Spec,Head analysis of (all) agreement configurations (Koopman 2003). This entails a radical readjustment/reconsideration of a number of standard structures and derivations. As a consequence, I abstract away from this possibility.
this concern, showing that Spec,Head configurations can indeed be grammatically significant.

2. Phase-based syntax allows for grammatically significant Spec,Head relations

According to Chomsky (2000, etc.), the licensing of in situ Goals takes place via LDA. It is not clear how this approach can be made compatible with crosslinguistic tendencies for moved elements to trigger agreement as opposed to in situ ones, in spite of the fact that the literature includes a number of approaches to this issue (cf. the previous section). Last but not least, theta-roles understood as features and phrases base-generated in A-bar positions pose the same kind of problem. In what follows I develop a unified approach to these issues. Specifically, I argued that there can be checking relations in the Spec,Head configuration, though not the regular probing of the Spec by the Head under m-command.

The point of departure of this proposal is Chomsky’s (2005a: 13) observation that ‘for minimal computation, the Probe should search the smallest domain to find the Goal: its c-command domain. It follows that there should be no m-command, hence no Spec,Head relations, except for the special case where the Spec itself can be a Probe.’ The same intuition can be found in Chomsky (2005b:14) and in Chomsky’s (2004:114) analysis of externally merged expletives (see Bošković 2001), where the expletive probes the head of the projection hosting it. As hinted already, a system allowing for grammatically significant Spec,H relations is able to deal with all these puzzles successfully. Chomsky’s framework is open to this possibility, but it is still unclear in exactly which contexts Specs would qualify as Probes. Chomsky characterizes Probes in the following way:

i. Probes are/have uninterpretable features (e.g., Chomsky 2001: 6)
ii. only heads can be Probes (e.g., Chomsky 2004: 109)
iii. only phase-heads drive operations (e.g., Chomsky 2005a: 11)

Under the assumptions that (a.) arguments be ar uninterpretable case features and (b.) arguments are phases (e.g., they have a phase head capable of driving operations), it follows that arguments in Specifier positions can be Probes.6 The only condition missing is that Specs would have to be heads. Uriagereka (1999) provides conceptual reasons in favor of this view.

Uriagereka’s (1999) Multiple Spell-Out proposal addresses some shortcomings of the Linear Correspondence Axiom as originally formulated (Kayne 1994). Kayne’s proposal concerning linearization includes a Base step and an Induction step:

(8) Linearization Procedure for Terminal elements
a. Base: If X asymmetrically c-commands Y, X precedes Y.
b. Induction: If X is dominated by Z, and Z precedes Y, X precedes Y.

According to Uriagereka, the stipulative Induction step is unnecessary. The logic of the Multiple Spell-out proposal is to spell-out ZP prior to connecting it to the

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6 Cf. Chomsky (2001: 14) for evidence that DPs are phases, and cf. Soltan (2003) for evidence concerning PPs. Cf. also Hornstein (1995) for independently motivated arguments that PPs have uninterpretable features (other than those valued by their arguments).
structure which is still live in the derivation. As a consequence, the issue that motivates the Induction step does not arise.

In Uriagereka’s proposal, all Specs are akin to heads (cf. also Gelderen 2004 for relevant discussion). For current purposes, this means, if taken at face value, that Specs qualify as Probes (given that they fulfill all the requisites) and, consequently, Spec,Head relations may exist in the system.

Chomsky’s argument against grammatically significant Spec,H relations is that checking would take place under m-command as opposed to c-command, in opposition to the conceptually desirable need to minimize the computation (cf. Chomsky 2005a:13 quoted above). However, once one adopts Uriagereka’s proposal as interpreted here, a Spec can probe the head of the projection hosting it under c-command. Crucially, this is consistent with the desire to minimize computations by having probing target the smallest domain, namely, the c-command domain.

Note that in a phase-based system it is labels that probe. In determining what a structure’s label is (or whether a syntactic unit is a probe), minimal search is key: ‘The label of an SO must be identifiable with minimal search, by some simple algorithm’ (Chomsky 2005a:11). Specifically, when merge takes place, ‘for optimal computation, one member of the pair must be available with no search. It must, therefore, be the head H of the construction α under consideration, α={H, XP}. Call H a probe P, which seeks a goal G within XP; P = H c-commands G, but that is a consequence of minimal search.’ (Chomsky 2004: 113). Similarly, Chomsky (2006: 16) approaches the issues as follows, noting that the notion “label” only plays an expository role: ‘In constructions of the form H-XP (H a head), minimal search conditions determine that H is the designated element (label) that enters into further operations; any other choice requires deeper search. At the phase level, H will be the probe, for the same reasons.’

To my knowledge, the idea of minimal search is not made explicit anywhere in Chomsky’s work. However, these passages and others suggest that for phrases to become probes one needs to apply some sort of costly ‘resolution rules’, akin to those found for coordinate structures. When the computational system merges two syntactic units, it needs to take into account all the elements within said units to see what their probing features turn out to be, where new phrases can be merged, etc. By contrast, in the case of heads, one has that information readily available. It is then more costly to have a phrase drive computations, rather than a head—a fact that is taken to underlie why probing is restricted to the latter.

This picture changes slightly once an independently motivated Multiple Spell-Out (MSO) framework (Uriagereka 1999) is adopted. While this framework explains why Specifier-internal components become inactive (deriving Huang’s 1982 Condition on Extraction Domains; cf. Hornstein, Lasnik and Uriagereka 2007 for a

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⁷ An approach in terms of Bare Phrase Structure, where both Specs and the unit formed by a head and its complement are heads predicts that both qualify as probes. E.g., Epstein and Seely (2006) claim that the unit formed by a complement and its head probes its Spec, whereas Heinat (2006) claims that phrases/specifiers probe. Nonetheless, it is not clear how these approaches relate to minimal search considerations, in contrast to the MSO analysis developed above. Furthermore, there is an ongoing discussion in the literature as to whether the phrase / head distinction should exist in the theory or not (e.g., see Carnie 2000). The rendition of the present discussion in terms of minimal search makes such ongoing debate orthogonal to the current concerns. As a consequence, I abstract away from it.
treatment of apparent counterexamples), the entire objects as such are available to further operations, or their exact place/role within the phrase-marker would be lost. Specifiers, that is to say, derived heads, can be argued to undergo independently motivated feature resolution processes, to determine, for instance, specific agreement specifications in corresponding heads. \(^8\) This allows the system to have relevant (featural) syntactic information readily available in spite of the fact that these are phrases/Specs. As a consequence of this feature resolution process, the burden of search when merging such Specifiers is reduced, and so feature search within a spelled-outSpecifier is minimized. In the spirit of Chomsky’s view that minimization affects labeling/probing, it is then possible to conclude that the label of spelled-out Specifiers is readily identifiable following the feature resolution mechanism. Due to the fact that operations are driven by labels (which in this system are probes), this means Specifiers can act as probes – with all the advantages that may bring into the picture (e.g. for the aforementioned crosslinguistic agreement paradigms, theta-roles or for traditional ‘antecedent government’ effects, which at this point have no treatment: the ‘Specifier’ can probe into a relevantly local structure to associate, aka ‘γ-mark’, a corresponding trace/copy in familiar conditions, not described in terms of mere cyclicity).\(^9, 10\)

The probing possibilities of the phase-based framework and of the framework put forward in this research can be illustrated in the following way, where the probing domain of the head/probe is indicated in grey and the probing head is indicated in bold:

\[\text{(9) Probing possibilities within the phase-based system}\]

\[
\begin{array}{c}
YP \\
/ \ / \ \ \\
ZP \ Y' \\
/ \ \ / \\
X \ldots \ Y \ldots
\end{array}
\]

\[\text{(10) Probing possibilities within the MSO system}\]

\(^8\) Independent evidence for this feature resolution process within phrases can be found in agreement attraction errors, e.g., cases like a bunch of aristocrats live(s) here. See Den Dikken (2000) for discussion and references. I thank J. Uriagereka for pointing this out to me.

\(^9\) One counterargument to this view runs as follows: Chomsky (2006: 16) claims that internally merged Specifiers cannot act as probes due to the fact that the moved XP is a “discontinuous element”, whereas the unit that the Spec will combine with is “unmodified and unary”. Still, heads can also be discontinuous under head-movement, just like phrases. Moreover, even if internally merged Specifiers are discontinuous, they will be minimized under the present view. Furthermore, the validity of this reasoning also depends on how one conceives movement (e.g an approach to move in terms or ‘remerge’ a priori could avoid the feature resolution costs associated with “discontinuity”).

\(^10\) One may wonder what prevents, within the current system, which boy from probing the embedded CP in the following configuration:

i. \([vP \text{ which boy asked } [CP \text{ what you eat}]]\]

Say this probing relations actually takes place, one possibility is to assume that derivational crashes free up other derivational options and, consequently, the sentence finally converges. Still another option is to assume that at the point which boy is introduced in the structure, the embedded CP is already syntactically inactive.
The scenario in (10)b is made possible by the fact that under the current system ZP is a derived head, which can act as a probe.

Note, finally, that a Spec might Probe a head and, nonetheless, that very head would label the resulting structure. I take this not to introduce a new assumption, but rather to follow from independent factors—namely, the subcategorization restrictions imposed by the head that merges with the resulting structure. In fact such restrictions might in certain cases allow/force the Spec that is probing a head to label the structure (see Chomsky 2005a: 12 or Iatridou et al. 2001 and Donati 2006 for discussion). At the same time, after such restrictions are met (early on) in the course of the derivation, in principle nothing would prevent a specifier from driving a re-labeling process. This is exactly what Hornstein and Uriagereka (1999) argue for, in terms of their independently motivated process of ‘reprojection’.\(^\text{11}\)

To sum up the discussion so far, the LDA mechanism, a hallmark of phase-based syntax (Chomsky 2000, etc.), fails to provide a proper understanding of agreement asymmetries across languages. The issue is even more dramatic, given that, in general, licensing relations between a Specifier and the head of the projection hosting it remain cryptic (e.g., this would be the case of an externally merged subject Specifiers in need of a theta role). Under the assumption that Specifiers in fact become heads (cf. Uriagereka 1999 and 2008) and that Probes are heads (Chomsky 2004: 119), it follows that Specifiers can be Probes, as suggested, for instance, in Chomsky’s (2004) analysis of externally-merged expletives. In this way, we can successfully address the puzzle that agreement paradigms, theta-role checking and related facts pose for the phase-based-system.

To be explicit about the agreement facts in (1)-(3), one could assume derivations of the pattern in (2), that is to say, derivations including elements triggering agreement under movement to proceed as in Frank et al. (2006), where it is argued that there is an LDA relationship followed by a Spec,Head Agreement relationship. This can be illustrated as follows:

(11) a. 1\(^{\text{st}}\) Agreement relation (LDA)  b. 2\(^{\text{nd}}\) Agreement relation (Spec,H)

\[\begin{align*}
&\text{XP} \\
&\begin{array}{c}
X' \\
/ \ /
\end{array} \\
&\begin{array}{c}
X \ldots \text{DP} \\
/ \ /
\end{array} \\
&\begin{array}{c}
\text{DP}_i \quad X' \\
\begin{array}{c}
/ \\
\end{array}
\end{array} \\
&\begin{array}{c}
\begin{array}{c}
X \ldots t_i \\
\end{array} \\
\end{array}
\end{align*}\]

\(^{11}\) According to Hornstein and Uriagereka (2002), reprojection is a process whereby a phrase marker’s label changes in the course of the derivation. For instance, in their system this allows binary quantifiers to take scope (at LF). See Hornstein and Uriagereka (2002) for details.
Given that the latter case corresponds in some sense to double-checking the agreement relationship, the presence of agreement would be more pervasive under movement than under lack of movement.\footnote{Within the phase-based system adopted in this research, this double-checking relationship would only be possible under the assumption that the first agreement relation does not result in the valuation of the phi-features on the probe and the case features of the goal (cf. the Activity Condition).} This would entail that movement and (some of the components of) LDA overlap.

Alternatively, it could be the case that movement and LDA are independent from one another (cf. Bobaljik and Wurmbrand 2005, Lidz and Williams 2002 and Park 2006). Under this view, agreement would take place after movement (cf. Park 2006). E.g., a probe \( P \) matches a Goal \( G \). Subsequently \( G \) moves to the Spec position of \( P \) and, afterwards, the \( P \) and \( G \) agree. If true, the reason why the patterns in (1-3) emerge could be the following: Under the minimalist assumption that the Language Faculty is in some sense optimal, it seems reasonable to expect the grammar to sanction the \textit{local} or optimal Spec,Head configuration as the domain of agreement at least in some languages, as opposed to the \textit{non-local} LDA relationship, which can be assumed to be less optimal; hence the contrast between (2) and (3), while allowing for (1) (cf. the next section for a detailed proposal).

I leave the issue of deciding among these two approaches open, noting that both are plausible alternatives that can deal with the data successfully. Crucially, though, the success of both implementations is contingent on the availability of checking relations under Spec,H configuration. Within the resulting system, externally-merged subject Specifiers can check their theta-roles and externally merged A-bar phrases can be licensed by the head of the projection hosting them.

In the next section, some remaining issues concerning agreement are addressed. In particular, the logic developed so far provides an argument for the existence of Spec,H relations in natural language. This allows for the Spec,H configuration to be sanctioned as the domain of agreement in certain languages. Still, one would like to derive the fact that the LDA configuration does not seem to be singled out or privileged in the same way. I have mentioned briefly above that locatality plays a role in this state of affairs. Below, it will be argued that this follows from the computational dynamics of the interfaces; more specifically, from the incremental nature of the parser/production system (Levelt 1989) and its interaction with the syntax (e.g., Bock et al. 1992, Phillips 1996 and Ferreira 1996).

3. On the role of Incrementality in agreement paradigms

With regard to regularities in agreement paradigms across languages, it has been argued that such data provide evidence for the redefined Spec,Head relations proposed above. The purpose of this section is to further investigate what underlies the fact that ‘poor’ agreement tends to be associated with LDA. The intuition presented before is that locality conspires to derive these facts. Nonetheless, agreement is agreement, whether local or long-distance in nature. It will be argued that this state of affairs follows from the incremental nature of the production system.

Recent research has provided evidence for i. the fact that overt agreement is a morphological phenomenon, not a strictly syntactic one (though it is contingent on the output of syntax, e.g., Sigurðsson 2006); ii. the incremental nature of production
(e.g., Bock et al. 1992, Phillips 1996 and Ferreira 1996). With regard to (i.), this literature shows that the realization of overt/morphological agreement is more peripheral than hard core syntax (though it is contingent on the outcome of the syntactic derivation). This is relevant for the discussion below, in that it is consistent with the view that performance factors may play a role in the realization of agreement. In turn, according to the Principle of Incrementality ‘different levels of processing can work on different pieces of an utterance at the same time. Thus, the phonological encoder can work on the early part of the clause while the syntactic encoder works on filling out what remains’ (Ferreira 1996, and Schriefers et al. 1998, Levelt 1989 or Phillips 1996). This allows for fast/efficient computation, in the sense that the production system does not have to wait for all elements of the sentence to be available before beginning the utterance. The syntactic framework that captures the incremental nature of production most naturally is Left-to-Right Syntax (Phillips 1996). I will adopt this framework at this point for the sake of exposition, (though see below for an alternative compatible with bottom-up syntax).

Within this framework, agreement is computed from left-to-right and the top of the tree is assembled/made available earlier than the bottom of the tree. Arguably, this state of affairs conspires to derive the above agreement asymmetries, an idea that goes back to Barlow (1992). Specifically, in the P–G order the production system works on P irrespective of whether the rest of the sentence has been coded or not, so as to allow for fast(er) production (cf. Phillips 1996). Nevertheless, a P showing morphological / rich agreement cannot be uttered until G has been coded, because agreement causes P to “wait” for G to become available. Only then can P be spelled-out. Inasmuch as such a “wait” goes against the spirit of incremental production, one option the production system has to avoid it is to drop agreement markers or adopt default agreement.

Let’s see how the proposal works for the data in (4)a, repeated here for the sake of exposition.

(12) Italian Dialect of Ancona (Cardinaletti 1997a: 38-9)
Questo, lo fa / *fanno sempre i bambini.
thisACC itACC does / do always the children

The crucial factor is whether the element triggering the agreement is already available or not (e.g., whether it has been encoded as part of the advanced planning unit, cf. n. 18), at the point that the element carrying the overt agreement morphology is hit.

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13 E.g. Schriefers et al. showed evidence that the verb is not automatically and obligatory part of the grammatical advance planning unit for finite clauses. In particular, in their experiments, native speakers of German described pictures of simple scenes, while they were presented with verbs as distractor words which were semantically related or unrelated to the verb of the picture description. For utterances with transitive verbs in initial position, utterance onset latencies were longer for the condition with semantically related distractor verbs than for the condition with unrelated distractor verbs. When the target verb did not occur in utterance initial position, the semantic interference effect was not obtained. This means that, at least at some level, the beginning of the sentence is available to the producer before the rest of the sentence is planned or encoded.
(13) Course of production of (4)a / (12)
Production stages
1st stage       Questo
2nd stage     lo
3rd stage     fa(no) *

* production contingent on the availability of the subject. As a consequence there are two options, to wait or to adopt default agreement.

In turn, in the G–P order (that is to say, in the Spec,Head configuration), the ‘wait’ for G takes place anyway, because it precedes P. Hence, there is nothing to be gained by dropping agreement markers. This is illustrated for (4)b, repeated here for the sake of exposition:

(14) Italian Dialect of Ancona (Cardinaletti 1997a: 38-9)
Questo, i bambini lo fanno / *fanno sempre.

(15) Course of production of (4)b / (14)
Production stages
1st stage       Questo
2nd stage     i bambini
3rd stage     lo
4th stage     fanno *

* The subject has already been encoded and overt Agreement can be computed accordingly at this stage.

Assuming that such a computation of overt Agreement is incremental and that Spec,Head relations can indeed exist in the cases under discussion, we can derive the mentioned Agreement Asymmetries within the LDA framework (Chomsky 2000, etc.).

Going back to the observation in (1-3), the present approach suggests the following ranking among Agreement patterns, from the most advantageous system in terms of Incrementality to the less advantageous one.

(16) G P overt agreement vs. P G
    G P overt agreement vs. P overt agreement
    G P vs. P overt agreement

Given this, the system at the bottom of the ranking should be fairly uncommon if it exists at all, as seems to be the case.

Finally, it is worth mentioning that, within the context of this research, the possibility of agreeing with an in situ Goal comes from the fact that the strategies of the parser/production system are defeasible: e.g., center embedding in English is disfavored due to its costly nature, but it is not banned by the parser/production system. In this sense, the present approach succeeds in providing a rationale for the existence of the paradigms under consideration. The choice to follow the most

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14 If overt morphological agreement is computed after syntax in the spirit of Distributed Morphology framework (Halle and Marantz 1993), this approach would be compatible not only with left-to-right syntax, but also with standard bottom-up syntax.
incremental pattern or to ‘defeat’ the strategies of the parser/production system would be a language-particular matter.  

3.1. On the relationship between Spec,H relations and Incrementality

Given this state of affairs, one wonders whether Spec,Head relations are actually necessary to capture the puzzle posed by morphological agreement for the phase-based system. Could one just blame Incrementality as the sole independent factor underlying the said crosslinguistic variation? This does not seem possible. As discussed, for instance by Lasnik (1999), the interpretation of linguistic data that are consistent with properties of the parser/production system is not trivial. In particular, Lasnik points out that the properties of the parser/production system may give rise to some of the properties of the grammar (cf., for instance, the seminal work of Berwick and Weinberg 1984 or Wexler and Culicover 1980. For this reason, one cannot conclude that the link between crosslinguistic variation in morphological agreement and Incrementality necessarily excludes the need for checking relations in the Spec,H configuration. Inasmuch as the need for grammatically significant Spec,H relations goes beyond morphological agreement and includes at least theta roles if understood as features (Bošković 1994, and Bošković and Takahashi 1998, Hornstein 2003, Lasnik 1995) and phrases generated in situ in A-bar positions, it follows that checking relations in the Spec,H configuration are part of the system.

4. Conclusion

The present approach explains how evidence for grammatically significant Spec,Head relations can be accommodated within the phase-based Long Distance Agreement framework (Chomsky 2000 and later work). Specifically, the independently motivated proposal of Multiple Spell-Out (Uriagereka 1999 and 2008) has been argued to open the door for Specifiers to establish a Probe Goal relationship with the head of the projection hosting them. This relation would fulfill the minimalist desiderata of restricting probing to c-command domains and complying with minimal search conditions on probing. This allows the present system to circumvent conceptual arguments against Spec,Head relations under m-command put forward in Chomsky (2005a) and related work. The resulting system is able to address successfully a number of puzzles for the phase-based system, e.g., the fact that across languages moved elements tend to trigger overt agreement as opposed to in situ ones or the issue of how phrases base-generated in A-bar positions are licensed. Furthermore, it has been argued that the differences in agreement morphology found across languages depending on whether the Probe Goal relation is established locally (cf. Spec,Head relation) or via Long-Distance Agreement are related to optimality considerations as suggested by the Principle of Incrementality.

References


15 One may wonder whether the pattern in (3) is attested at all as indeed one would expect given that the strategies of the parser are defeasible. Anti-agreement effects exemplify this pattern.


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